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COMPUTER APPLICATIONS

TOPIC1:COMPUTERFUNDAMENTALS(WINDOWS, MS-OFFICE & INTERNET)

TOPIC2:DESKTOPPUBLISHING(PAGEMAKER,

CORELDRAW, PHOTOSHOP)
TOPIC3:HTML/DHTML,DREAM WEAVER
TOPIC4:MANUALANDCOMPUTERIZEDACCOUNTS
TOPIC 5: PROGRAMMING IN C & C++
PRACTICALLABASSIGNMENT&VIVAVOICE

COMPUTERFUNDAMENTALS

Computer is an electronic device that is designed to work with Information. The termcomputerisderivedfromtheLatinterm‘compute’,thismeanstocalculate.Computer

cannotdoanythingwithoutaProgram.Itrepresentsthedecimalnumbersthroughastring of binary digits. The Word 'Computer' usually refers to the Center Processor Unit plus Internal memory.

CHARLESBABBAGE

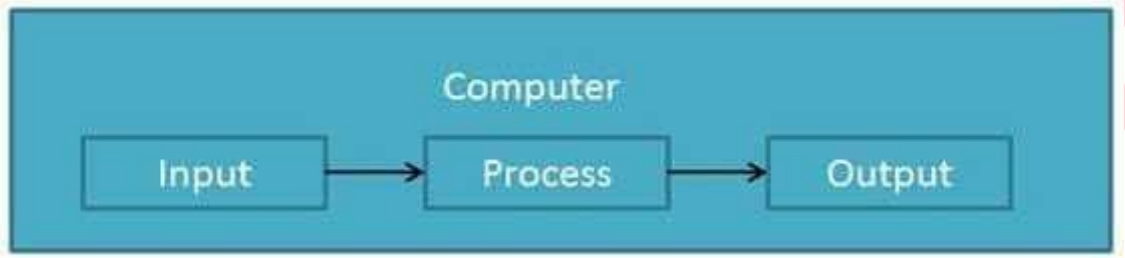
Charles Babbage was an English polymath. He was a mathematician, philosopher, inventor and mechanical engineer, who is best remembered now for originating the concept of a programmable computer.

Considered a "father of the computer", Babbage is credited with inventing the first mechanical computer that eventually led to more complex designs. His varied work in otherfieldshasledhimtobedescribedas"pre-eminent"amongthemanypolymathsof his century.

FUNCTIONALITESOF COMPUTER:

Anydigitalcomputercarriesoutfivefunctionsingrossterms:

- Takesdataasinput.
- Storesthedata/instructionsinitsmemoryandcanusethemwhenrequired.
- Processthedataandconvertitintousefulinformation.
- Outputtheinformation.
- Controlalltheabovefoursteps.



Definition

ComputerSystemisanelectronicdataprocessingdevicewhichdoesthefollowing:

- Acceptandstoreaninputdata.
- Processthedatainput.
- Andoutputtheprocesseddatainrequiredformat.

ADVANTAGESOFCOMPUTER:

Followinglistdemonstratestheadvantagesof Computers:**High Speed**

- Computerisaveryfastdevice.
- Itiscapableofperformingadditionofverybigdata.
- Thecomputerhasunitsofspeedinmicrosecond,nanosecondandeventhe picoseconds.
- It canperformmillionsof calculationsin afewsecondsascomparedtomanwho can spend many months for doing the same task.

Accuracy

- In addition to being very fast, computer is very accurate. The computer can perform calculations 100% error free.
- Computersperformalljobswith100%accuracy.

StorageCapability

- Memoryisaveryimportantcharacteristicofacomputer.
- Thecomputerhasmuchmorestoragecapacitythanhumanbeings.
- Itcanstorelargeamountofdata.
- It can store any type of data such as images, videos, text, audio and any other type.

Diligence

- Unlike human beings, a computer is free from monotony, tiredness and lack ofconcentration.
- Itcanworkcontinuouslywithoutcreatinganyerrorandboredom.
- Itcandorepeatedworkwithsamespeedandaccuracy.

Versatility

- Acomputerisaveryversatilemachine.
- Acomputerisveryflexibleinperformingthejobstobedone.

Thismachinecanbeusedtosolvetheproblemsrelatingtovariousdifferent fields.

- At one instant, it may be solving a complex scientific problem and the very next moment it may be playing a card game. **Reliability**
- Acomputerisareliablemachine.
- Modernelectroniccomponentshavefailurefreelonglives.
- Computersare designedto makemaintenance easy.

Automation

- Computerisanautomaticmachine.
- Automationmeansabilitytoperformthetaskautomatically.
- Onceaprogramisgiventocomputeri.estoredincomputermemory,theprogram and instruction can control the program execution withouthuman interaction.

ReductionInPaperWork

- Theuseofcomputersfordataprocessinginanorganizationleadstoreductionin paper work and speeds up the process.
- As data in electronic files can be retrieved as and when required, the problem of maintenance of large number of files gets reduced.

Reduction In Cost

- Though the initial investment for installing a computer is high but it substantially reduces the cost of each of its transaction.

DISADVANTAGESOFCOMPUTER:

Followinglistdemonstratesthedisadvantagesof Computersintoday'sarena.

- Acomputerisamachineandhasnointelligenceofitsowntoperformanytask.
- Eachandeveryinstructionhastobegiventothecomputer.
- Acomputercannottakeanydecisiononitsown.

Dependency

- Itcanperformfunctionasinstructedbytheuser,soitisfullydependentonhuman being.

Environment

- Theoperatingenvironmentofcomputershouldbedustfreeandsuitabletoit. **No Feeling**
- Computerhasnofeelingoremotions.
- It cannot make Judgment based on feelings, tastes, experiences and knowledge unlike a human being.

APPLICATIONSOFCOMPUTER

Banking

TodayBankingisalmosttotallydependentoncomputer. Banks

provide following facilities:

- Bankson-lineaccountingfacility,whichincludecurrentbalances,deposits, overdrafts, interest charges, shares and trustee records.
- ATMmachinesaremakingiteveneasierforcustomerstodealwithbanks.

Insurance

Insurance companies are keeping all records up to date with the help of computer. The Insurance Companies, Finance houses and Stock broking firms are widely using computers for their concerns.

InsuranceCompaniesaremaintainingadatabaseofallclientswithinformationshowing

- howtocontinuewithpolicies
- startingdateofthepolicies
- nextdueinstallmentofapolicy
- maturitydate
- interestsdue
- survivalbenefits
- bonus

Education

ThecomputerhasprovidedalotoffacilitiesintheEducationSystem.

- The uses of computer provide a tool in the Education system is known as CBE (Computer Based Education).
  CBEinvolvesControl,DeliveryandEvaluationoflearning.
- The computer education is very familiar and rapidly increasing the graph of computer students.
- Therearenumberofmethodsinwhicheducationalinstitutionscanusecomputer to educate the students.
- It is used for prepare a database about student performance and analysis are carried out.

Marketing

InMarketingusesofcomputerarefollowing:

- **Advertising:** With computers, advertising professionals create art and graphics, writeandrevisecopyandprintanddisseminateadswiththegoalofsellingmore products.
- **At Home Shopping:** At home shopping has been made possible through use of computerized catalogues that provide access to product information and permit direct entry of orders to be filled by the customers.

HealthCare

ComputershavebecomeimportantpartinallMedicalSystems.

Thecomputersarebeingusedinhospitalstokeeptherecordofpatientsandmedicines. It is also used in scanning and diagnosing different diseases. ECG, EEG, Ultrasounds and CT Scans etc. are also done by computerized machines.

Someofmajorfieldsofhealthcareinwhichcomputerareused:

- **DiagnosticSystem:**Computers are used to collect data and identify cause ofillness.
- **Lab-diagnosticSystem:**Alltestscanbedoneandreportsarepreparedby computer.
- **PatientMonitoringSystem:**Theseareusedtocheckpatient'ssignsfor abnormality such as in Cardiac Arrest, ECG etc.
- **PharmaInformationSystem:**ComputerchecksDrug-Labels,Expirydates, harmful drug side effects etc.
- Nowadays,computersarealsousedinperformingsurgery.

Engineering Design

Computersarewidelyusedinengineeringpurposes.

OneofmajorareasisCAD(ComputerAidedDesign).CADprovidescreation,editionand modification of image. Some fields are:

- **Structural Engineering:** Requires stress and strain analysis required for design of Ships, Buildings, Budgets, and Airplanes etc.

Industrial Engineering: Computers deals with design, implementation and improvement of integrated systems of people, materials and equipments.

- **Architectural Engineering:** Computers help in planning towns, designing buildings, determining a range of buildings on a site using both 2D and 3D drawings.

Military

Computers are largely used in defense. Modern tanks, missiles, weapons etc. employ computerized control systems. Some militaryareas where a computer has been used are:

- MissileControl
- MilitaryCommunication
- Militaryoperationandplanning
- SmartWeapons

Communication

Communicationmeanstoconveyamessage,anidea,apictureorspeechthatisreceived and understood clearly and correctly by the person for whom it is meant. Some main areas in this category are:

- E-mail
- Chatting
- Usenet
- FTP
- Telnet
- Video-conferencing

Governmentapplications

Computers play an important role in government applications. Some major fields in this category are:

- Budgets
- Salestaxdepartment
- Incometaxdepartment
- Male/Femaleratio

- Computerizationofvoterslists
- Computerization of Driving Licensing system
  Computerization of PAN card □

WeatherForecasting.

TYPESOFCOMPUTER:

Computercanbebroadlyclassifiedbytheirspeedandcomputingpower.

Sr. No.	Type	Specifications
1	PC(PersonalComputer)	Singleusercomputersystem.Moderately powerful microprocessor.
2	on	Singleusercomputersystem.SimilartoWorkStati PersonalComputerbuthavemorepowerful microprocessor.
3	MiniComputer	Multi-user computer system. Capable of supportinghundredsofuserssimultaneously.
4	MainFrame	Multi-user computer system. Capable of supportinghundreds of users simultaneously. Software technology is different from minicomputer.
5	Supercomputer	Anextremelyfastcomputerwhichcanperform hundreds of millions of instructions per second.

INPUTDEVICES

Followingarefewoftheimportantinputdeviceswhichareusedin ComputerSystems

- Keyboard
- Mouse
- JoyStick
- Lightpen

- TrackBall
- Scanner
- GraphicTablet
- Microphone
  MagneticInkCardReader(MICR)
- OpticalCharacterReader(OCR)
- BarCodeReader
- OpticalMarkReader

OUTPUT DEVICES

Followingarefewoftheimportantoutputdeviceswhichareusedin ComputerSystems

- Monitors
- GraphicPlotter
- Printer

CPU(CENTRALPROCESSING UNIT)

- CPUisconsideredasthebrainofthecomputer.
- CPUperformsalltypesofdataprocessingoperations.
- Itstoresdata,intermediateresultsandinstructions(program).
- Itcontrolstheoperationofallpartsofcomputer.

CPU itself hasfollowing threecomponents.

- Memory OrStorageUnit:
- ControlUnit
- ALU(ArithmeticLogicUnit)

Memoryor Storage Unit:

This unit can store instruction, data and intermediate results. This unit supplies informationtotheotherunitsofthecomputerwhenneeded.Itisalsoknownasinternal storage unit or main memory or primary storage or Random access memory (RAM).

Its size affects speed, power and capability. There are primary memory and secondary memory two types of memories in the computer.

FunctionofMemoryUnitis:

Itstoresallthedatatobeprocessedandtheinstructionsrequiredforprocessing. It stores

intermediate results of processing.

ItstoresfinalresultsofprocessingbeforetheseresultsarereleasedtoanoutputdeviceAll inputs

and outputs are transmitted through main memory.

Control Unit:

Thisunitcontrolstheoperationsofallpartsofcomputer.Itdoesnotcarryoutanyactualdata processing operations.

Functionsofthisunitare

Itisresponsibleforcontrollingthetransferofdataandinstructionsamongotherunitsofa computer.

Itmanagesandcoordinatesalltheunitsofthecomputer.

Itobtainstheinstructionsfromthememory,interpretsthemanddirectstheoperationofthe computer.

ItcommunicateswithInput/outputdevicesfortransferofdataorresultsfromstorage. It does

not process or store data.

ALU(ArithmeticLogicUnit):

Thisunitconsistsoftwosub-sectionsnamely

- Arithmeticsection
- LogicSection

ARITHMETICSECTION

FunctionofArithmeticsectionistoperformarithmeticoperations likeaddition,subtraction, multiplication and division. All complex operations are done by making repetitive use of above operations.

LOGIC SECTION

Function of logic section is to perform logic operations such as comparing, selecting,matching and merging of data.

Unitsof Computer MemoryMeasurements

1Bit=BinaryDigit(BitsofComputerare0and1) 8 Bits
= 1 Byte
1024Bytes=1KB(KiloByte)
1024 KB = 1 MB (Mega Byte)
1024 MB = 1 GB(Giga Byte)

Computer Memory

In computing,memoryrefers tothephysical devices usedtostoreprograms (sequences ofinstructions)ordata(e.g.programstateinformation)onatemporaryorpermanentbasis foruseinacomputerorotherdigitalelectronicdevice.Thetermprimarymemoryisused for the information in physical systems which function at highspeed (i.e. RAM), as a distinction from secondary memory, which are physical devices for program and data storage which are slow to access but offer higher memory capacity. Primary memory storedonsecondarymemoryiscalled"virtualmemory".Anarchaicsynonymformemory is store.

The term "memory", meaning primary memory is often (but not always) associated with addressable semiconductor memory, i.e. integrated circuits consisting of silicon-based transistors, used for example as primary memory but also other purposes in computers andotherdigitalelectronicdevices.Therearetwomaintypesofsemiconductormemory: volatileandnon-volatile.Examplesofnon-volatilememoryareflashmemory(sometimes used as secondary, sometimes primary computer memory) and ROM/PROM/EPROM/EEPROM memory (used for firmware such as boot programs). Examples of volatile memory are primary memory (typically dynamic RAM, DRAM), and fast CPU cache memory (typically static RAM, SRAM, which is fast but energyconsuming and offer lower memory capacity per area unit than DRAM) .

Volatile memory

Volatile memory is computer memory that requires power to maintain the stored information.MostmodernsemiconductorvolatilememoryiseitherStaticRAMordynamic RAM.SRAMretainsitscontentsaslongasthepowerisconnectedandiseasytointerface to but uses six transistors per bit. Dynamic RAM is more complicated to interface to and control and needs regular refresh cycles to prevent its contents being lost. However, DRAM uses only one transistor and a capacitor per bit, allowing it to reach much higher densities and, with more bits on a memory chip, be much cheaper per bit. SRAM is not worthwhile for desktop system memory, where DRAM dominates, but is used for their cache memories. SRAM is commonplace in small embedded systems, which might only need tens of kilobytes or less. Forthcoming volatile memory technologies that hope to replaceorcompetewithSRAMandDRAMincludeZ-RAM, TTRAM,A-RAMandETA RAM.

Non-volatilememory

Non-volatilememoryiscomputermemorythatcanretainthestoredinformationevenwhennot powered. Examples of non-volatile memory include read-only memory(ROM), flash memory, most types of magnetic computer storage devices (e.g. hard disks, floppy discs and magnetic tape), optical discs, and early computer storage methods such as paper tape and punched cards.

OPERATINGSYSTEM

An operating system is a program that acts as an interface between the softwareand the computer hardware.

- Itisanintegrationsetofspecializedprogramsthatareusedtomanageoverallresources and operations of the computer.
- It isspecialized softwarethat controlsandmonitorsthe execution ofallotherprograms that reside in the computer, including application programs and other system software.

ObjectivesofOperating System

- Makingacomputersystemconvenienttouseinanefficientmanner
- Tohidethedetailsofthehardwareresourcesfromtheusers
- Toprovideusersaconvenientinterfacetousethecomputersystem.
- To act as an intermediary between the hardware and its users and making it easier for the users to access and use other resources.
- Managetheresourcesof acomputersystem.
- Keep track of who is using whichresource, granting resource requests, according forresource using and mediating conflicting requests from different programs and users.
- Theefficientandfairsharingofresourcesamongusersandprograms

CharacteristicsofOperatingSystem

- **Memory Management** -- It keeps tracks of primary memory i.e. what part of it are in use by whom,whatpartarenotinuseetc.Allocatesthememorywhentheprocessorprogramrequests it.
- **Processor Management** -- Allocate the processor (CPU) to a process. De-allocate processor when processor is no longer required.
- **Device Management** -- Keep tracks of all devices. This is also called I/O controller. Decides which process gets the device when and for how much time.

- **File Management** --Allocatestheresources.De-allocatestheresources.Decideswhogetsthe resources.
- **Security**--Bymeansofpasswords&similarothertechniques,preventingunauthorizedaccess to programs & data.
- **Job accounting**--Keepingtrackoftime&resourcesusedbyvariousjobsand/orusers.
- **Control over system performance** --Recordingdelaysbetweenrequestforaservice&from the system.
- **Interaction with the operators** -- The interaction may take place via the console of the computer in the form of instructions. Operating System acknowledges the same, do the corresponding action and inform the operation by a display screen.
- **Error-detectingaids** --Productionofdumps,traces,errormessagesandotherdebuggingand error-detecting methods.
- **Coordination between other software and users** -- Coordination and assignment of compilers, interpreters, assemblers and other software to the various users of the computer systems.

WINDOWS7

Windows 7 isanoperatingsystemproducedbyMicrosoftforuseonpersonalcomputers, including home and business desktops, laptops, net books, tablet PCs, and media center PCs. It was released to manufacturing on July 22, 2009, and became generally available retail worldwide on October 22, 2009, less than three years after the release of its predecessor, Windows Vista. Windows 7's server counterpart, Windows Server 2008 R2, was released at the same time. Windows 7 is succeeded by Windows 8.

Unlike Windows Vista's many new features, Windows 7 was an incremental upgrade designedtoworkwithVista-compatibleapplicationsandhardware.Presentationsgiven by Microsoft in 2008 focused on multi-touch support, an updatedWindows shell with a new taskbar, referred to internally as the *Superbar*, a home networking system called Home Group, and performance improvements. Some standard applications that have been included with prior releases of Microsoft Windows, including Windows Calendar, Windows Mail, Windows Movie Maker, and Windows Photo Gallery, are not included in Windows 7; most are instead offered separately at no charge as part of theWindows Essentials suite.

InstallWindows7

ManypeoplehavecomputersthatcomewithWindows7sotheymayneverhavetoinstall it. However, you may need to install Windows 7 if:

- You replaced your hard disk drive with a new hard disk drive that does not haveWindows 7 installed.

- You are reinstallingWindows 7 on a computer because you want to clean off your hard drive and remove any unwanted programs, such as spyware.
- Youpurchasedacomputerwithoutanoperatingsystem.

Pre-installation checklist

Beforeyoubegintheinstallationprocess,usethischecklisttomakesurethatyouareprepared:

- YouhavetheWindows7CD.
- You have theproductkeyavailable.Theproduct keyislocatedonyourWindows 7 CD case and is required to install and activate Windows 7.
- Your computer hardware is set up. At a minimum, you should connect your keyboard, mouse, monitor, and CD drive. If available, you should connect your computer to a wired network.
- YouhaveWindows7driversavailable.DriversaresoftwarethatWindows7usesto communicate with your computer's hardware. If you do not have drivers available, Windows7mayalreadyincludedriversforyourhardware.Ifnot,youshouldbeable to download them from your hardware manufacturer's website after you set up Windows 7.
- IfyouarereinstallingWindows7onanexistingcomputer,youneedabackupcopy of your files and settings. The installation process will delete all of your files. You can use the File and Settings Transfer Wizard to store your files and settings on removable media and then restore them after installation is complete.

Installation process

InstallingWindows7cantakeuptotwohours.Tomaketheprocessmoremanageable,it has been broken up into several sections.

ToBeginInstallation:

1. InserttheWindows7CDintoyourcomputerandrestartyourcomputer.
2. IfpromptedtostartfromtheCD,pressSpacebar.Ifyoumisstheprompt(itonlyappears for a few seconds), restart your computer to try again.
3. Windows7Setupbegins.Duringthisportionof setup,yourmousewillnot work,soyou mustusethekeyboard.OntheWelcometoSetuppage,pressEnter.4.OntheWindows 7 Licensing Agreement page, read the licensing agreement. Press the Page Down keyto scroll to the bottom of the agreement. Then press F8.
5. This page enables you to select the hard disk drive on which Windows 7 will be installed. Once you complete this step, all data on your hard disk drive will be removed and cannot be recovered. It is extremelyimportant that you have a recent backup copy of your files before continuing. When you have a backup copy,pressD,andthenpressLwhenprompted.Thisdeletesyourexistingdata.
6. PressEntertoselectunpartitionedspace, which appearsbydefault.
7. Press Enteragain to select Formatthepartition usingthe NTFSfilesystem, which appears by default.

8. Windows 7 erases your hard disk drive using a process called formatting and thencopiesthesetupfiles.Youcanleaveyourcomputerandreturnin20to30 minutes.

ToContinuethe Installation

1. Windows7restartsandthencontinueswiththeinstallationprocess.Fromthispoint forward, you can use your mouse. Eventually, the Regional and Language Options page appears. Click Next to accept the default settings. If you are multilingual or preferalanguageotherthanEnglish,youcanchangelanguagesettingsaftersetup is complete.
2. On the Personalize Your Software page, type your name and your organization name.Someprogramsusethisinformationtoautomaticallyfillinyournamewhen required. Then, click next.
3. On the Your Product Key page, type your product key as it appears on your Windows7 CDcase.The productkeyisuniqueforeveryWindows7 installation. Then, click Next.
4. On the Computer Name and Administrator Password page, in the Computer name box, type a name that uniquely identifies your computer in your house, such as FAMILYROOM or TOMS. You cannot use spaces or punctuation. If you connect your computer to anetwork, you will use thiscomputernametofindsharedfiles andprinters.Typea strongpasswordthatyou canrememberintheAdministrator password box, and then retype it in the Confirm password box. Writethepassworddownandstoreitinasecureplace.ClickNext.
5. OntheDateandTimeSettingspage,setyourcomputer'sclock.Then,clickthe Time Zone down arrow, and select your time zone. Click Next.
6. Windows7willspendaboutaminuteconfiguringyourcomputer.Onthe Networking Settings page, click next.
7. OntheWorkgrouporComputerDomainpage,clickNext.

To complete the installation

1. Windows 7 will spend 20 or 30 minutes configuring your computer and will automatically restart when finished. When the Display Settings dialog appears, click OK.
2. WhentheMonitorSettingsdialogboxappears,clickOK.
3. The final stage of setup begins. On the Welcome to Microsoft Windows page, click Next.
4. On the Helpprotect yourPCpage,clickHelpprotectmyPCbyturningon Automatic Updates now. Then, click Next.
5. Windows7willthencheckifyouareconnectedtotheInternet:
    - IfyouareconnectedtotheInternet,selectthechoicethatdescribesyour networkconnectiononthewillthiscomputerconnect to the Internet directly,orthroughanetworkpage.Ifyou'renotsure,acceptthedefault selection, and click Next.

- Ifyouusedial-upInternetaccess,orifWindows7cannotconnecttothe Internet,youcanconnecttotheInternetaftersetupiscomplete.Onthe How will this computer connect to the Internet? Page, click Skip.

6. Windows7SetupdisplaystheReadytoactivateWindowspage.Ifyouareconnected to the Internet, click Yes, and then click Next. If you are not yet connected to the Internet, click No, click Next, and then skip to step 24. After setup is complete, Windows 7 will automatically remind you to activate and register your copy of Windows 7.
7. OntheReadytoregisterwithMicrosoftpage,clickYes,andthenclickNext.
8. OntheCollectingRegistrationInformationpage,completetheform.Then,clickNext.
9. OntheWhowillusethiscomputerpage,typethenameofeachpersonwhowilluse the computer? You can use first names only, nicknames, or full names. Then click Next.
10. OntheThankyou!Page,clickFinish.

Windows7setupiscomplete.Youcanlogonbyclickingyournameonthelogon screen.Ifyou'veinstalledWindows7onanewcomputerornewharddiskdrive, you can now use the File and Settings Transfer Wizard to copy your important data to your computer or hard disk drive.

MS-DOS

Short for **Microsoft Disk operating system**, MS-DOS is a non-graphical command line operating system derived from 86-DOS that was created for IBM compatible computers. MS-DOS originally written by Tim Peterson and introduced by Microsoft in August 1981 and was last updated in 1994 when MS-DOS 6.22 was released. Today, MS-DOS is no longer used; however, the command shell, more commonly known as the Windows command line is still used by many users.

Today, most computer users are only familiar with how to navigate Microsoft Windows using the mouse Unlike Windows, MS-DOS is a command-line and is navigated by using MS-DOScommands.Forexample,ifyouwantedtoseeallthefilesinafolderinWindows you would double-clickthefoldertoopenthefolderinWindowsExplorer.In MS-DOS,to viewthat samefolderyou would navigate tothefolder using the CD command and then list the files in that folder using the dir command.

DOS Commands

MS-DOS has a relatively small number of commands, and an even smaller number of commonly used ones. Moreover, these commands are generally inflexible because, in contrast to Linux and other Unix-like operating systems, they are designed to accommodate few options or *arguments* (i.e., values that can be passed to the commands).

Some of the most common commands are as follows (corresponding commands on Unix-like operating systems are shown in parenthesis):

CD-changesthecurrentdirectory(cd)
COPY - copies a file (cp)DEL
-deletesafile(rm)
DIR-listsdirectorycontents(ls)
EDIT-startsaneditortocreateoreditplaintextfiles(vi,vim,ed,Joe) FORMAT
- formats a disk to accept DOS files (mformat)
HELP-displaysinformationaboutacommand(man,info) MKDIR -
creates a new directory (mkdir)
RD-removesadirectory(rmdir)
REN - renames a file (mv)
TYPE-displayscontentsofafileonthescreen(more,cat)

OtherDOSCommand commonlyused are:

Append

Theappendcommandcanbeusedbyprogramstoopenfilesinanotherdirectoryasifthey were located in the current directory.

Attrib

Theattribcommandisusedtochangetheattributesofasinglefileoradirectory.

Break

ThebreakcommandsetsorclearsextendedCTRL+Cchecking.**Call**
Thecallcommandisusedtorunascriptorbatchprogramfromwithinanotherscriptorbatch program.
Thecallcommandhasnoeffectoutsideofascriptorbatchfile.Inotherwords,runningthe call command at the DOS prompt will do nothing.

Chcp

Thechcpcommanddisplaysorconfigurestheactivecodepagenumber.**Chdir**
Thechdircommandisusedtodisplaythedriveletterandfolderthatyouarecurrentlyin.
Chdircanalso be usedto change thedrive and/ordirectorythat youwant to workin.

Chkdsk

Thechkdskcommand,oftenreferredtoas*check disk*,isusedtoidentifyandcorrectcertain hard drive errors.

Choice

Thechoicecommandisusedwithinascriptorbatchprogramtoprovidealistofchoices and return the value of that choice to the program.

Cls

Theclscommandclearsthescreenofallpreviouslyenteredcommandsandothertext.

Dir

Thedircommandisusedtodisplayalistoffilesandfolderscontainedinsidethefolderthat you are currently working in.
Thedircommandalsodisplaysotherimportantinformationliketheharddrive's serial number,thetotalnumberoffileslisted,theircombinedsize,thetotalamountoffree space left on the drive, and more.

DIR[drive:][path][filename][/P][/W][/A[[:]attributes]][/O[[:]sortorder]][/S][/B][/L][/V]

Specifiesdrive,directory,orfilestolist.(Couldbeenhancedfile [drive:][path][filename]specificationormultiplefilespecs)

/P	Pauses aftereachscreenful ofinformation.
/W	Useswidelistformat.
/A	attributes:D Directories RRead-onlyfiles HHiddenfiles AFilesreadyforarchiving S System files -Prefixmeaningnot
/O	Listbyfilesinsortedorder,sortorder: N By name (alphabetic) SBysize(smallestfirst) EByextension(alphabetic) DBydateandtime(earliestfirst) GGroupdirectoriesfirst -Prefixtoreverseorder AByLastAccessDate(earliestfirst)
/S	Displaysfilesinspecifieddirectoryandallsubdirectories.
/B	Usesbareformat(noheadinginformationorsummary).
/L	Useslowercase.
/V	Verbosemode.

WINDOWSOPERATIONS:

MS- PAINT

Paintisadrawingtoolyoucanusetocreatesimpleorelaborateddrawings.Thesedrawings can be either black-and-white or color, and can be saved as bitmap files. You can print yourdrawing,useitforyourdesktopbackground,orpasteitintoanotherdocument.You can even use Paint to view and edit scanned photos.

YoucanalsousePainttoworkwithpictures,suchas.jpg,.gif,or.bmpfiles.Youcanpastea Paint picture into another document you've created, or use it as your desktop background.

Todrawastraightline

1. Inthetoolbox,click**Line**.
2. Belowthetoolbox,clickalinewidth.
3. Dragthepointertodrawtheline.

Todraw a freeformline

1. Inthetoolbox,click**Line**.
2. Dragthepointertodrawtheline.

Todrawacurvedline

1. Inthetoolbox,click**Curve** .
2. Belowthetoolbox,clickalinewidth.
3. Drawastraightlinebydraggingthepointer.
4. Click where you want one arc of the curve to be, and then drag the pointer to adjust the curve. Repeat this step for a second arc. You can only create two curves for each line.

Tosend animageusing e-mail

Afteryouaredoneworkingonanimage,youcansendittoanyonewhohasane-mailaccount (as long as you also have access to an e-mail account).

1. OntheFilemenu,clickSend.
2. Youre-mailprogramwilldisplay,withyourimageincludedeitherasanattachmentoras part of the message section of your e-mail.
3. Specifyyourrecipient'se-mailaddress,asubject,andamessage;thensendtheemailas you normally would.

Todraw arectangleorsquare

1. Inthetoolbox,clickRectangle tocreateasquare-corneredshape,orclickRounded Rectangle to create a round-cornered shape.
2. Belowthetoolbox,clickafillstyle.
3. Todrawarectangle,dragthepointerdiagonallyinthedirectionyouwant.
4. Todrawasquare,holddownSHIFTwhiledraggingthepointer.

Toacquireanimagefromascanneroradigitalcamera 1. On the File menu, click From Scanner or Camera.

2. IntheGetPicturesdialogbox,clicktheimageyouwant, andthenclickGetPicture.

NOTEPAD

Notepadoverview

Notepad is a basic text editor you can use for simple documents or for creating Web pages.ThemostcommonuseforNotepadistovieworedittext(.txt)files,butmanyusers find Notepad a simple tool for creating Web pages.

Because Notepad supports only very basic formatting, you cannot accidentally save special formatting in documents that need to remain pure text. This is especially useful when creating HTML documents for a Web page because special characters or other formatting may not appear in your published Web page or may even cause errors. You can save your Notepad files as Unicode, ANSI, UTF-8, or big-endian Unicode. These formats provide you greater flexibility when working with documents that use different character sets.

WORDPAD

WordPad is a basic word processor that is included with almost allversions of Microsoft WindowsfromWindows95onwards.ItismoreadvancedthanNotepadbutsimplerthan Microsoft Works Word Processor and Microsoft Word. It replaced Microsoft Write.

UsingWordPad

WordPad is a basic word processor that is included in Windows. A word processor is a computerprogramthatyoucanusetocreate,edit,view,andprinttextdocuments.With WordPad, you can type letters, book reports, and other simple documents. You can also change how the text looks, quickly move sentences and paragraphs around, and copy and paste text within and between documents.

TheWordPadwindow

ToopenWordPad,clickthe **Start** button,click **All Programs**,click**Accessories**,andthen click **WordPad**.

TherearefourmainpartsoftheWordPadwindow:

The toolbar: The toolbar contains buttons for basic commands, including saving and printing. To find out what a button does, rest your mouse pointer on it. A box pops up showing the function of the button.

The format bar: Theformat bar contains buttons that you can use to format the text in yourdocument.Forexample,youcanchoosethefont,color,andalignmentofyourtext. **The ruler:** Usetheruler to check the layoutandplacementof text in your document.

The document area:Thisiswhereyoutypeyourdocument,makechangestothetext,and apply your formatting.

Typing text: Whenyou'rereadytogetstarted,typeinthedocumentareaofWordPad.A flashing vertical line called the cursor indicates where the next text that you type will appear.Tomove the cursor within text, click where you want the cursor to appear.

Unlike using a typewriter, when you type in WordPad you don't have to press ENTER to startanewline.WordPadwilltakecareofthatforyoubyautomaticallystartinganewline when you reach the end of the one you're working on. When you want to start a new paragraph, press ENTER.

Selectingtext

Wheneveryouwanttodosomethingtotextinyourdocument,suchascopyitorformat it,youneedtoselectitfirst.Toselecttext,positionthemousepointertotheleftofwhere youwanttobeginyourselection.Withthepointerpositioned,clickandholdtheleftmouse buttonwhileyoudragthepointeroverthetextthatyouwanttoselect.Theselectedtext will be highlighted. Once you've completed your selection, release the mouse button.

Copyingandmovingtext

Ifyouhavetextinonepartofyourdocumentthatyouwanttoappearinanotherpart,there aretwowaystomovethetextaroundwithouthavingtoretypeit:Youcancopyandpaste it to another location, or you canmove it toanother location.

When you copy text, it is placed in the Clipboard. You can then paste it in a different location. The original text is preserved.

Whenyoumovetexttoanotherlocation,theoriginaltextisnotpreserved.Youmightfind this method useful when you want to rearrange the sentences and paragraphs in your document.

To copytext and paste it in anotherlocation

1. Selectthetextthatyouwanttocopy.
2. OntheEditmenu,clickCopy.
3. Movethecursortothelocationwhereyouwanttoinsertthecopiedtext.
4. OntheEditmenu,clickPaste.

Tip

- Toquicklycopytextthatyou'veselected,pressCTRL+C.Topasteit,pressCTRL+V.

Insertinganddeletingtext

WordPad makes it easy to insertand delete text wherever you want. To inserttext, click whereyouwanttoinsertthetextandthenjuststarttyping.Todeletetext,selectthetext that you want to delete, and then press DELETE.

Formattingyour document

Formattingreferstothehowthetextinyourdocumentlooksaswellashowitisarranged. WordPad lets you easily change the formatting in your document. For example, you can choosefrommanydifferentfontsandfontsizes,andyoucanmakeyourtextalmostany color you want. You can also easily change how your document is aligned.

Tochangethefont,fontstyle,orfontsize:

1. Selectthetextwhoseformattingyouwanttochange.
2. OntheFormatmenu,clickFont.
3. IntheFontbox,typeorselectthefontyouwanttouse.
4. IntheFontStylebox,typeorselectthefontstyleyouwant.
5. IntheSizebox,typeorselectthesizeyouwanttouse.

Tochange the color

1. Selectthetextwhosecoloryouwanttochange.
2. OntheFormatmenu,clickFont.

3. UnderColor,clickthecolorthatyouwant.

Tochange the alignment

Youcanalignthetextinyourdocumenttoeitherthe leftmargin,thecenter,ortherightmargin.

1. Selecttheparagraphwhosealignmentyouwanttochange.
2. OntheFormatmenu,clickParagraph.
3. IntheAlignmentbox,clickthealignmentyouwant.

Savingyourdocument

It'sagoodideatosaveyourdocumentperiodicallywhileyouareworkingonitsothatin case your computer stops working for some reason, you won't lose any of your work. Savingthedocumentwillalsoallowyoutocomebacktoitlaterifyouwanttoworkonit again.

Tosavethedocument

- OntheFilemenu,clickSave.

  Ifyouhaven'tsavedthedocumentyet,you'llbeaskedtoprovideanameforthedocument and location on your computer to save it to:

  1. IntheSaveinbox,clickthelocationwhereyouwanttosavethedocument.
  2. IntheFilenamebox,typeanameforyourdocument.
  3. ClickSave.

Printingyourdocument

On the File menu, click Print. In the Print dialog box, use the Page Range box and the Number of copies box to specify which pages you want to print as well as how many copies. When you're done, click Print.

MS-OFFICE:

MicrosoftOfficeisanofficesuiteofdesktopapplications,serversandservicesforthe Microsoft Windows and OS X operating systems, introduced by Microsoft on August 1, 1989.Initiallyamarketingtermforabundledsetofapplications,thefirstversionofOffice contained Microsoft Word, Microsoft Excel, and Microsoft PowerPoint. Over the years, Office applications have grown substantially closer with shared features such as a common spell checker, OLE data integration and Microsoft Visual Basic for Applications scripting language. Microsoft also positions Office as a development platform for line-of-business software under the Office Business Applications brand. Office is reported to now be used by over a billion people worldwide.

The current versions are Office 2013 for Windows, released on October 11, 2012 and Office 2011 for OS X, released October 26, 2010. On 24 October 2012, the RTM final code of Office 2013 Professional Plus has been released to TechNet and MSDN subscribersfordownload.On15November2012,the60-daytrialversionofOffice2013 Professional Plus was released for download.

MS-WORD

Microsoft→ordisanexampleofaprogramcalleda"wordprocessor."Thekeybenefitto usingawordprocessoristhatyoucanmakechangeseasily,includingcorrectingspelling; adding,deleting,formatting,andrelocatingtext;andinsertingimages.Onceyoucreatea document, you can effortlessly print it (as many copies as you want!), save it for later modifications, or send it to a friend via e-mail. Microsoft Word is a very powerful word processor—this handout was created using just a small number of its features!

MicrosoftWordisavailableonbothPCsandMacs,sowhatyoulearninclasstodayshould beapplicabletoanycomputeryouuse.Theprogrammaylookslightlydifferentdepending on the version and computer that you're using, but Microsoft →ord will function in the same basic ways. There are other word processors out there, including OpenOffice.org Writer, WordPerfect, Apple Pages, and WordPad. They have many features in common with MicrosoftWord, and you should feel free to choose any program you prefer.

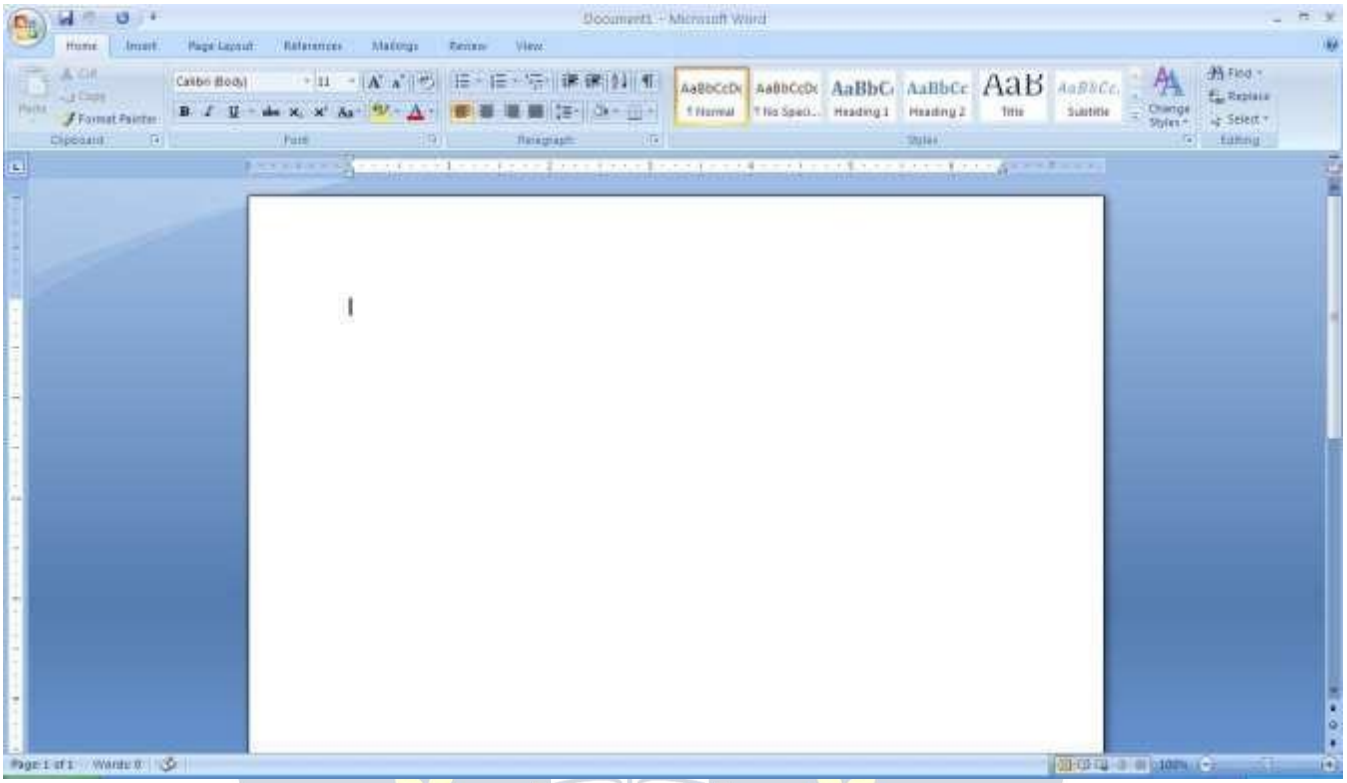
OpeningMicrosoft Word

TogetstartedwithMicrosoftWord(sometimescalled"MS→ord"),youwillneedtolocate and openthe program on yourcomputer.Toopen the program, point to →ord's iconon thedesktopwithyourmouseanddouble-clickonitwiththeleftmousebutton.Ifyoudon't see the MS→ordiconon yourdesktop,you'llhave toaccesstheprogramfrom the Start Menu.ClickonthebuttoninthebottomleftcornertopulluptheStartMenu.Youshould see the MSWord iconhere, so click on it once with yourleft button. If you stilldon't see it,clickon"AllPrograms"andscrollthroughthelistofprogramsuntilyoufindit.Clickonce withyourleftbuttontoopentheprogram.Occasionally,MicrosoftWordwillbeinafolder called"MicrosoftOffice"orsomethingsimilar—thiswillmakeonemorestepbetween"All Programs" and "Microsoft →ord."

MS→ordwillthenopenablankpagecalled"Document 1."

Thisisanimageoftheupper-leftcornerofMSWord.Thisboxfeaturestwoimportantpiecesof information:thenameofthefilethatyouarecurrentlyworkingon(inthiscase, "Document 1" since we have not yet renamed it) and which program you are using ("Microsoft→ord").Thereshouldnowbeablinkinglineinthetopleftcornerofthepartof the screen that looks like a sheet of paper. This means you will be able to type in this space!

MicrosoftWordFeatures



TheTitleBar

Thisisaclose-upviewoftheTitleBar,wherefileinformationislocated.Itshowsthename ofthefile(here,"MicrosoftWord")andthenameoftheprogram("Microsoft→ord").Notice the threebuttonsonthe right side, controllingthe size and closingoftheprogram.

Minimize:Leftclickthisbuttontoshrinkthewindowdowntoasmallbuttonthatwillappearin the task bar

Maximize: Left click this button to make the window as large as it can be—it should take up your entire screen.

Close:Left-clickthisbuttontoclosethewindow.Theprogramwillcloseandstoprunning.Make sure you save your work first!

RestoreDown:

Left-clickthisbuttontomakethewindowsmallerwithoutminimizingit.ThetabbedRibbon menu system is howyounavigate throughWord andaccessvariousWordcommands.If you have used previous versions of Word, the Ribbon system replaces the traditional menus.

The File Menu

InMicrosoftOffice2007,therewassomethingcalledtheMicrosoftOfficeButton()inthe top left-hand corner. In Microsoft Office 2010, this has been replaced with a tab in the Ribbon called "File."

When you left-click on this tab, a drop-down menu appears. From this menu, you can performthesamefunctionsaswerefoundundertheMicrosoftOfficeButtonmenu,such as: Create a new document, open files, save files in a variety of ways, and print.

QuickAccessToolbar

On the top left-hand side of the Title Bar, you will see several little icons above the File menu.Theseletyouperformcommontasks,suchassavingandundoing,withouthaving tofindtheminamenu.→e'llgooverthemeaningsof theiconsalittlelater.

TheHomeTab

The most commonly used commands in MS Word are also the most accessible. Some of these commands available in the Home Tab are: The Home Tab Toolbar offers options that can change the font, size, color, alignment, organization and style of the text in the document. For example, the "Times New Roman" Indicates the FONT of your text, the "12"indicatestheSI↕Eofyourtext;etc.→ewillgooverhowtouseallooftheseoptionsto formatyourtextinalittlewhile.Eachoftheseoptionsexpandsintoamenuifyouleftclickonthetinydownarrowinthebottomrightcornerofthewindow.Therulerisfoundbelow the Ribbon.The ruler tells you where you are on the page, alongwith the dimensionsof theoveralldocument.Justlikearealpieceofpaper,thedefaultsettingis8.5x11inches, andthemarginshavebeenincorporatedforyou.SimilartomostoptionsinMSWord,this is entirely customizable and the user can create a document of any dimensions.

Keyboard Review

InordertouseMSWordeffectively,youmustinputcommandsusingboththemouseand thekeyboard.Theaboveimageofakeyboardshouldlooksimilartothekeyboardinfront of you; learning just a few certain keys will help to improve your efficiency in typing, as well as present you with more options within the program. The following is a list of commonly used keys that have special functions in MS Word (key functions can change depending on which program you are using) :

1. Backspace:Thiskeydeleteslettersbackward.

2. Delete:Thiskeydeleteslettersforward.

3. Shift:Thiskey,whenpressedWITHanotherkey, willperformasecondary

Function.

4. Spacebar:This keyentersa spacebetween wordsorletters.

5. Tab:Thiskeywillindentwhatyoutype,ormovethetexttotheright.Thedefault Indent

distance is usually ½ inch.

6. CapsLock:Pressingthiskeywillmakeeveryletteryoutype capitalized.

7. Control(Ctrl):Thiskey,whenpressedWITHanotherkey,performsashortcut.

8. Enter:Thiskeyeithergivesyou a newline, orexecutesa command(pressed inMSWord, it begins a new line).

9. NumberKeypad:Theseareexactlythesameasthenumbersatthetopofthe

Keyboard; some people just find them easier to use in this position.

10. ArrowKeys:Likethemouse,thesekeysareusedtonavigatethroughadocument.

MICROSOFT WORDBASICS

TypingText

Toentertext,typejustasyouwouldifyouwereusingatypewriter.Tocapitalizealetter, hold down the SHIFT key while typing the letter. Or, press the CAPS LOCK key on the left-hand side of your keyboard. You will have to press the CAPS LOCK key again—once you are done capitalizing—to remove the lock. You do not need to press ENTER to start a new line—Microsoft Word will automatically wrap your sentence at the end of the line. Tomovethecursorfromitspositionattheendofyoursentencetoanywhereelseon the page,usethemouseorthearrowkeystomovethecursorwhereyouwantthelettersor spaces to be (left-click the mouse to place the cursor) and then type what you want to add—thetextwillautomaticallyadjusttoincludeit.PressENTERtostartanewparagraph (this is sometimes called a "carriage return").

Deleting Text

While typing a document, sometimes you will make a mistake. Unlike a typewriter, MS Wordcandeletetextonthescreenandleavenotrace—itisasif younevertypedonthe pageinthefirstplace.Therearetwodifferentbuttonsonthekeyboardthatwillallowyou to erase text. They are the "Delete" key and the "Backspace" key (#s 1 and 2 on the keyboard map on page. The "Backspace" key deletes words to the LEFT of the cursor, and the "Delete" key deletes words to the RIGHT of the cursor.

BACKSPACE↔ DELETE

Let'sassume that the vertical line dissectingthe word "creative" in the example above is our cursor. Pressing the "Backspace" key will erase "a," "e," "r," "c," and so on, moving LEFT.The "Delete"keywillerase "t,"^"i,"^"v,"^"e,"and soon,moving RIGHT.

Todeleteawholechunkoftextatonce,left-clickwithyourmouseanddragtohighlighta sectionoftext.Thensimplypress"Backspace"or"Delete"andallofthehighlightedText will disappear.

Undoingand Redoing

The UNDO and REDO features of Microsoft Windows applications are great tools to rely on.Theprogramwillkeepalistofthelast25commandsthatyouhaveperformed,andit allows for taking "one step" backwards in order to erase what you have just done. Click ontheUNDObuttonintheQuickAccessToolbartogobackonestep.ClickontheREDO button in the Quick Access Toolbar to go forward one step.

FormattingText

Changingthelookofwhatyou'vewritteniscalled"formatting."Thiscanincludechanging thetextstyle,size,color,andmore.Thisisasentencethatfeaturesmanydifferentfonts. This is a sentence that features many different sizes. From the Home Tab, the "B" will makeyourtextBOLD,the"I"willputitinitalics,andthe"←"willaddanunderlinetoyour text.Thesefeaturesdonothavetobeusedindependentlyofeachother—inotherwords, youcanbold,underline,anditalicizeasinglepieceoftext.Thealignmentofthetextcan be altered usingthe buttons with the horizontal lines on them. You can align text To the LEFT, To the CENTER and to the RIGHT.

Inordertoapplycertainstylisticorformattingchangestotext,youmustfirst HIGHLIGHTthetext.ThisisacommonprocedureinMicrosoftWindowsapplications,and becauseitissouseful,itisaskillworthpracticing.Youcanalsochangethefontcolorby clicking on the appropriate buttons in the

FormattingToolbar. Experimentandremember—youcanalwaysstartoverwithafresh, newdocument,sodon'tworryaboutmakingmistakes!Ifyoudo,however,thereisalways theincredible"←NDO"tool.Cutting,Copying,andPastingTextinMSWord,youcanCUT orCOPYtextfromoneareaofthedocumentandsavethattexttobePASTEDelsewhere (these commands are found on the Home Tab).When you CUT text, you actually delete it from where you took it, as opposed to COPYING it, which makes a copy of your selection.

When you CUT or COPY text, it is stored on the CLIPBOARD. The Clipboard is a tool in MS Word that stores cuts and copies of your work, to be pasted in other places in the document. Once your selection is on the CLIPBOARD, you can PASTE it as many times as you want! CUTTING a selection will place it on the clipboard, just in case you wantto PASTE it elsewhere. To CUT a selection, first highlight it. Then, click on the CUT icon fromtheHomeTab.Thehighlightedtextwilldisappear,asyouhavejustcutitout,buta copyisnowonyourclipboard,andMSWordiswaitingforyoutopasteitsomewhereelse.

To PASTE this cut selection, place your cursor where you want the selection to go. Click on the PASTE icon from the Home Tab toolbar, and it will pop the text into place, right where you have your cursor. To COPY, simply follow those same steps, replacing the CUT command with COPY. The COPY command will not alter your original selection at all,asitsimplymakesacopyoftheselectionwithoutchangingordeletingitinanyway.

DOING MORE WITHMICROSOFT WORD

InsertingImagesandClipArt

WithMicrosoftWord,youcaninsertpicturesinyourdocumentusingtheInsertTabtoolbar. ↔oucaninsertpicturesfromthe"ClipArt"albumthatcomeswiththeprogram,oryoucan insert pictures from a file that you have previously saved on a disk or elsewhere on the computer (e.g., the My Pictures folder).Clip Art is a collection of cartoon and computer-generatedimagesthatcoverabroadarrayofcommonlyneedediconsandpictures.These includebusiness,holiday,nature,entertainment,academicandotherthemes,alongwith standard bullets and symbols.

To insert a clip art picture into a Microsoft Word document, you will first need to place yourcursor(left-click)whereyouwishtoinsertyoupictureinyourdocument.Then,from theInserttabontheRibbon,clickon **"Clip Art."** AClipArtsearchboxwillappearonthe rightsideofyourscreen.Fromhere,youcanenterasearchwordforthepictureyouwould liketofind.Thenclick"Go."Thiswillshowalltheoptionsofpicturesyoucaninsert.When youseeapieceofclipartthatyoulike,clickonit,anditwillautomaticallyinsertintoyour document,intheexactplacewhereyoulefttthecursor.Toresizeyourimage,graboneof thecornersoftheimagebyleft-clickingandholding—dragittoyourdesiredsizeandfine-tunetheplacement.Thecursorwillchangefromatypingicontoadoublearrowwhenit can be used to resize an image.

Dragthecornertowardtheupper-leftcornerofthescreen,andtheimagewillgrow.Drag towardthebottom-right,anditwillshrink.Youcanmovetheimagetoanotherplaceinthe document by left-clicking and holding on the center of it; drag it to its desired location. More options, such as aligning the image with text (or special effects like wrapping text around orthrough an image)can befound byclickingon the picture, and then choosing the Picture Tools Tab. You can also insert a photograph or other images from your files using this same process. On the Insert Tab,click on Picture and locate the files that you want to include.

ModifyingLine Spacing

Line spacing inWord refers to the amount of space between lines of text. The default in Word 2010 is 1.15 spacing, which leaves a little bit more space than single-spacing, or whatyouwouldfindinanormalbook.Singlespacingisgenerallyeasyfortheeyetoread. Theremaybetimes,however,whenyouwanttochangethisspacing.Onecommonoption is to double-space text: This text is double-spaced. Double-spacing is especially useful if someoneelseisproofreadingyourdocument.Itallowsformoreroomtowritecomments on the page.

Tochange theline spacing:

1. Selecttextyouwanttoformatbyhighlightingit.

2. OntheHomeTab,clickontheLineSpacingbuttonintheParagraphgroup.
3. Choose the spacing you want from the menu that appears. For more options, select Line Spacing Options. In the dialog box that appears, you can choose other spacing options, including spacing between paragraphs. This can be done by changing the values in the Before and After boxes.

CreatingBulletedand Numbered Lists

Wordallowsyoutocreatelistswithinyourdocumentthatcanbeorganizedwithbulletsor numbers. Lists are useful for presenting text that wouldn't make the most sense in paragraph form (for example, step-by-step instructions) or for emphasizing key points Bullets are usually small circles at the beginning of item in a list, and numbers are used for lists that are arranged in sequential order.Here's an example of a bulleted list:

- Bananas
- Milk
- Eggs
- IceCream

Tocreatealist:

1. On the Home tab, select either the Bullets or Numbering buttons from the Paragraph group. If you want to choose a particular style for your bullets or numbers, click on the triangle next to thebutton and choose astyle from themenuthat appears.

2. You will see the first bullet or number appear on your document. Type your first line of text and then hit Enter.

3. Another bullet or number will appear automatically. Type your next line of text and hit Enter.

4. Whenyouhavefinishedyourlist,hitEntertwicetoendthebulletsornumbering.

ChangingViewsandOverall Look

There will be times when you need to create documents that don't fit on a standard piece of paper (8.5" by 11").

ClickonthePageLayoutTab.

From this menu, you can alter the margins, width, height, and orientation (portrait = 11"14long; landscape = 11" wide) of the document, as well as choose from a variety of templates,differenttypesofpaper,anddocumentstylesthatcomewiththeprogram.To change the orientation of your page, clickon the Orientation button.

ClickonLandscapefromthedrop-downboxthatappears.Yourdocumentshouldnowbe in landscape position. If you wish to return to portrait orientation, go through the same steps,clickingontheLandscapeoptioninsteadofPortrait.Ifyouwouldliketochangethe displayofyourdocumentorzoominandoutwithoutaffectingthewayyourdocumentwill print,youcandothatfromtheViewTab.AnythingyouchangefromtheViewTabwillnot changethewayyourdocumentprintsout.Soifyouwantyourtexttobebiggerwhenyou printoutthedocument,makesuretochangethesizeof thefontinsteadof thezoom.

SpellingandGrammar Check

One benefit of using a computerized word processor is its ability to recognize, change, andgiveadviceaboutyourwriting.MSWordhasutilitiesthatcancheckyourspellingand grammar against a master database, and can offer advice on a variety of different grammatical styles. MS Word automatically underlines any words that it does not recognize in red, assuming that theyare not spelled correctly, and underlines in green if itdoesnotrecognizethegrammaticalpattern,assumingthatthesentencedoesnotmake sense.

Forexample:Inthiscase,"jumping"shouldread"jump"and"laziy"shouldbe"lazy."Ifyou rightclickontheword,amenuwithpopupwithoptions,including"Ignore"ifyoudonot want help on this specific phrase or agree with the suggestion. You can also choose to addwordstotheMSWordspellingdatabase,ifyouaregoingtousethemoftenanddon't wantthem tobeflaggedasmisspelledeverytime—thisisespeciallyusefulfornames,as MS Word often interprets these as misspellings. The spelling and grammar tools can be found in the Review Tab

USINGMICROSOFTWORD

Microsoft →ord is an example of a program called a "word processor." →ord processors areusedtocreateandprinttextdocumentsinmuchthesamewaythatyouwouldusea typewriter.Thekeybenefittousingawordprocessoristhatyoucanmakechangeseasily, includingcorrectingspelling;adding,deleting,formatting,andrelocatingtext;andinserting images.Onceyoucreateadocument,youcaneffortlesslyprintit(asmanycopiesasyou want!),saveitforlatermodifications,orsendittoafriendviae-mail.MicrosoftWordisa verypowerfulwordprocessor—Thishandoutwascreatedusingjustasmallnumberofits features! Microsoft Word is available on both PCs and Macs, so what you learn in class today should be applicable to any computer you use. The program may look slightly differentdependingontheversionandcomputerthatyou'reusing,butMicrosoftWordwill function in the same basic ways. There are other word processors out there, including OpenOffice.org Writer, WordPerfect, Apple Pages, and WordPad. They have many featuresincommonwithMicrosoftWord,andyoushouldfeelfreetochooseanyprogram you prefer.

OpeningMicrosoft Word

TogetstartedwithMicrosoft→ord(sometimescalled"MS→ord"),youwillneedtolocate and openthe program on yourcomputer.Toopen the program, point to →ord's iconon

thedesktopwithyourmouseanddouble-clickonitwiththeleftmousebutton.Ifyoudon't see the MS→ordiconon yourdesktop,you'llhave toaccesstheprogramfrom the Start Menu.ClickonthebuttoninthebottomleftcornertopulluptheStartMenu.Youshould seetheMSWordiconhere,soclickonitoncewith yourleftbutton. If youstilldon'tsee it,clickon"AllPrograms"andscrollthroughthelistofprogramsuntilyoufindit.Clickonce with yourleftbuttontoopentheprogram.

Occasionally, Microsoft Word will be in a folder called "Microsoft Office" or something similar—thiswillmakeonemorestepbetween"AllPrograms"and"Microsoft→ord."MS →ordwillthenopenablankpagecalled"Document1."Thisisanimageoftheupper-left corner of MS Word. This box features two important pieces of information: the name of the file that you are currently working on (in this case, "Document 1" since we have not yet renamed it) and which program you are using ("Microsoft →ord").There should now be ablinkingline in the top left cornerofthepartofthescreenthatlookslike a sheetof paper. This means you will be able to type in this space!

MICROSOFT WORDBASICS

TypingText

Toentertext,typejustasyouwouldifyouwereusingatypewriter.Tocapitalizealetter, hold down the SHIFT key while typing the letter. Or, press the CAPS LOCK key on the left-hand side of your keyboard. You will have to press the CAPS LOCK key again—once you are done capitalizing—to remove the lock. You do not need to press ENTER to start a newline—Microsoft Word will automatically wrap your sentence at the end of the line. Tomovethecursorfromitspositionattheendofyoursentencetoanywhereelseonthe page,usethemouseorthearrowkeystomovethecursorwhereyouwantthelettersor spaces to be (left-click the mouse to place the cursor) and then type what you want to add—thetextwillautomaticallyadjusttoincludeit.PressENTERtostartanewparagraph (this is sometimes called a "carriage return").

Deleting Text

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The"Backspace"keydeleteswordstotheLEFTofthecursor,andthe"Delete"keydeletes words to the RIGHT of the cursor.

MicrosoftWordFeatures

The Title Bar

This is a close-up view of the Title Bar, wherefile information is located. It shows the name of the file (here, "Microsoft Word") and the name of the program ("Microsoft →ord"). Notice the threebuttonsontheright side, controllingthe size and closingof the program.

Minimize:Leftclickthisbuttontoshrinkthewindowdowntoasmallbuttonthatwillappearin the task bar

Maximize: Left click this button to make the window as large as it can be—it should take up your entire screen.

Close:Left-clickthisbuttontoclosethewindow.Theprogramwillcloseandstoprunning.Make sure you save your work first!

RestoreDown: Left-clickthisbuttontomakethewindowsmallerwithoutminimizingit.

The FileMenu

InMicrosoftOffice2007,therewassomethingcalledtheMicrosoftOfficeButton()inthe top left-hand corner. In Microsoft Office 2010, this has been replaced with a tab in the Ribbon called "File." When you left-click on this tab, a drop-down menu appears. From thismenu,youcanperformthesamefunctionsaswerefoundunder theMicrosoftOffice Buttonmenu,suchas:Createanewdocument,openexistingfiles,savefilesinavariety of ways, and print.

TheHomeTab

The most commonly used commands in MS Word are also the most accessible. Some of these commands available in the Home Tab are: The Home Tab Toolbar offers options that can change thefont, size, color, alignment, organization and style of the text in the document. For example, the "Times New Roman" indicates the FONT of your text; the "12"indicatestheSIZEofyourtext;etc.Wewillgooverhowtouseallotheseoptionsto formatyourtextinalittlewhile.Eachoftheseoptionsexpandsintoamenuifyouleft-click onthetinydown-arrowinthebottomrightcornerofthewindow.

The Ruler

TherulerisfoundbelowtheRibbon.Therulertellsyouwhereyouareonthepage,along with the dimensions of the overall document. Just like a real piece of paper, the default settingis8.5x11inches,andthemarginshavebeenincorporatedforyou.Similartomost options in MSWord, this is entirely customizable and the user can create a document of any dimensions.

Keyboard Review

InordertouseMSWordeffectively,youmustinputcommandsusingboththemouseand thekeyboard.Theaboveimageofakeyboardshouldlooksimilartothekeyboardinfront

of you; learning just a few certain keys will help to improve your efficiency in typing, as well as present you with more options within the program. The following is a list of commonly used keys that have special functions in MS Word (key functions can change depending on which program you are using)

1. Backspace:Thiskeydeleteslettersbackward.

2. Delete:Thiskeydeleteslettersforward.

3. Shift:Thiskey,whenpressedWITHanotherkey,willperformasecondaryfunction.

4. Spacebar:This keyentersa spacebetween wordsorletters.

5. Tab: This key will indent what you type, or move the text to the right. The default indent distance is usually ½ inch. 6. Caps Lock: Pressing this key will make every letter you type capitalized.

7. Control(Ctrl):Thiskey,whenpressedWITHanotherkey,performsashortcut.

8. Enter:Thiskeyeithergives you anewline,or executesacommand(pressed inMSWord,it begins a new line).

9. Number Keypad: These are exactly the same as the numbers at the top of the keyboard; some people just find them easier to use in this position.

10. ArrowKeys:Likethemouse,thesekeysareusedtonavigatethroughadocumentorpage.

MICROSOFTEXCEL

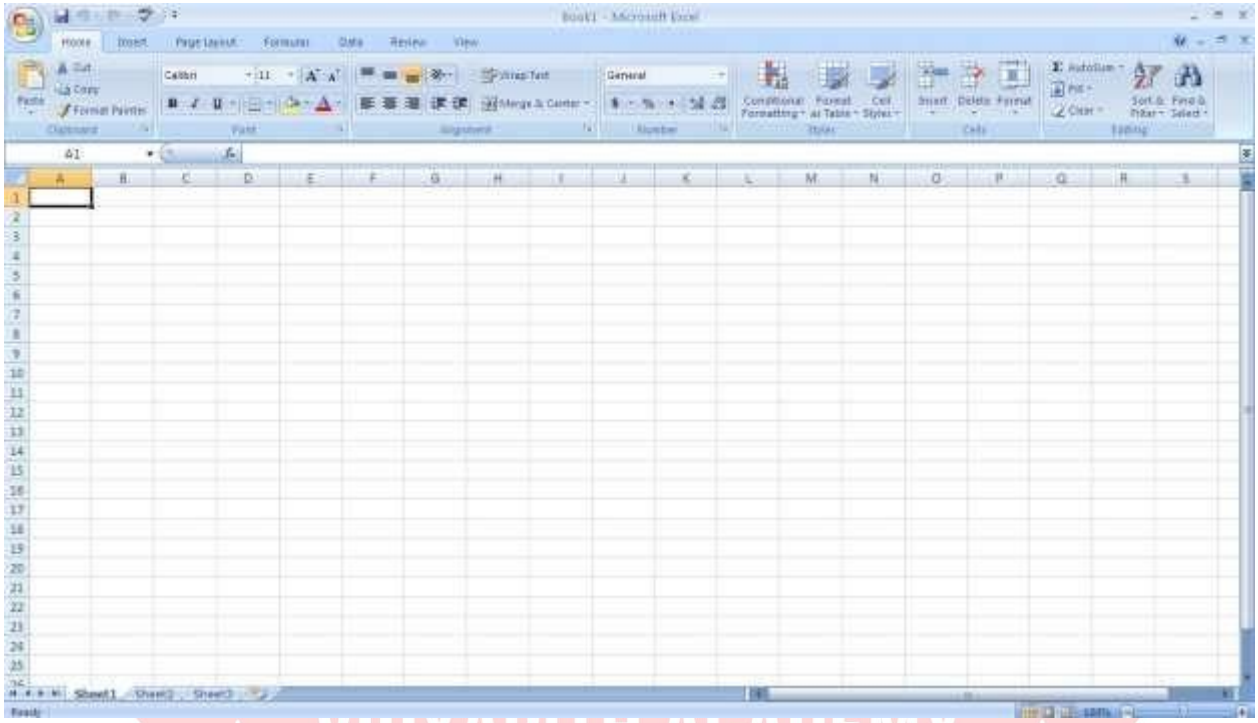
Microsoft Excel is an example of a program called a "spreadsheet." Spreadsheets are used to organize real world data, such as a check register or a rolodex. Data can be numerical or alphanumeric (involving letters or numbers). The key benefit to using a spreadsheet program is that you can make changes easily, including correcting spelling or values, adding, deleting, formatting, and relocating data. You can also program the spreadsheettoperformcertainfunctionsautomatically(suchasadditionandsubtraction), and a spreadsheet can hold almost limitless amounts of data—a whole filing cabinet's worth of information can be included in a single spreadsheet. Once you create a spreadsheet, you can effortlessly print it (as many copies as you want!), save it for later modifications, or send it to a colleague via e-mail. Microsoft Excel is a very powerful.

OpeningMicrosoftExcel

TogetstartedwithMicrosoftExcel(oftencalled"Excel"),youwillneedtolocateandopen theprogramonyourcomputer.Toopentheprogram,pointtoExcel'siconon thedesktop with your mouse and double-click on it with the left mouse button. If you don't see the

Exceliconon yourdesktop,you'llhavetoaccesstheprogramfrom theStartMenu.Click onthebutton in thebottom left cornertopulluptheStart Menu.YoumayseetheExcel icon here, so click on it once with your left button. If you still don't see it, click on "All Programs"andscrollthroughthelistofprogramsuntilyoufindit.Itmayalsobelocated in a folder called "Microsoft Office" or something similar—it will depend on your specific machine.Clickoncewithyourleftbuttontoopentheprogram.Excelwillthenopenablank page called "Book1."

MicrosoftExcelFeatures



The Title Bar

Thisisaclose-upviewoftheTitleBar,wherefileinformationislocated.Itshowsthename ofthefile(here,"Book1,"thedefaulttitle)andthenameoftheprogram("MicrosoftExcel"). ↔ou will be able to name your file something new the first time that you save it. Notice thethreebuttonsontherightsideoftheTitleBar,controllingthesizeandclosingofthe program.

TheRibbon Menu System

The tabbed Ribbon menu system is how you navigate through Excel and access various Excel commands. If you have used previous versions of Excel, the Ribbon system replaces the traditional menus. At the bottom, left area of the spreadsheet, you will find worksheet tabs. By default, three worksheet tabs appear each time you create a new workbook.Onthebottom,rightareaofthespreadsheetyouwillfindpageviewcommands, the zoom tool, and the horizontal scrolling bar.

The FileMenu

InMicrosoftOffice2007,therewassomethingcalledtheMicrosoftOfficeButton()inthe top left-hand corner. In Microsoft Office 2010, this has been replaced with a tab in the Ribbon called "File."→hen you left-click on this tab, a drop-down menu appears.

From this menu, you can perform the samefunctions as were found under the Microsoft Office Buttonmenu, such as: Createa newworksheet, open existingfiles, save files ina variety of ways, and print.6

Quick AccessToolbarOn the top left-hand side of the TitleBar, you will see several little icons above the File menu. These let you perform common tasks, such as saving and undoing,withouthavingtofindtheminamenu.→e'llgooverthemeaningsoftheicons a little later.

TheHomeTab

The most commonly used commands in Excel are also the most accessible. Some of these commands available in the Home Tab are: The Home Tab Toolbar offers options that can change the font, size, color, alignment, organization and style of the text in the spreadsheet and individual cells. For example, the "Calibri" indicates the FONT of your text;the"11"indicatestheSIZEofyourtext;etc.Wewillgooverhowtouseallofthese optionstoformatyourtextinalittlewhile.Eachoftheseoptionsexpandsintoamenuif you left-click on the tiny down-arrow in the bottom right corner of the window. This tab works the exact same way as the MS Word Formatting Toolbar. The main difference is thattheformatchangeswillonlyaffecttheselectedcellorcells,allunselectedcellsremain in thedefaultsetting("Calibri"font, size "11").

Equation Editor

TheEquationEditorisgenerallyfoundbelowtheribbonmenu.Theleftsidedenoteswhich cell is selected ("C5") and the right side allows you to input equations or text into the selected cell.

Therearetwowaystoinputinformationintoacell.Youmayeitherselectanindividualcell andtypetheequationortextintotheequationeditorortypetheequationortextdirectly intotheselectedcell.Equations(forexample,=SUM(D5+E5))willautomaticallybehidden insidethecellandcanonlybeviewedusingtheequationeditor;theresultoftheequation willdisplayinthecell.Ifanywrittentextislongerthanthecellwidth,thenthespreadsheet willcoverupanyportionlongerthanthecellwidth.Theinformationwillstillbeinthecell, you just won't be able to see it at all times.

Keyboard Review

InordertouseExceleffectively,youmustinputcommandsusingboththemouseandthe keyboard.Theaboveimageofakeyboardshouldlooksimilartothekeyboardinfrontof you;learningjustafewcertainkeyswillhelptoimproveyourefficiencyintypingaswell aspresentyouwithmoreoptionswithintheprogram.Thefollowingisalistofcommonly used keys that you may already be familiar with:

1. Backspace:Thiskeydeleteslettersbackwards.
2. Delete:Thiskeydeleteslettersforward.

3. Shift:Thiskey,whenpressedWITHanotherkey,willperformasecondaryfunction.
4. Spacebar:This keyentersa spacebetween wordsorletters.
5. Tab: This key will indent what you type, or move the text to the right. The default indentdistance is usually ½ inch.
6. CapsLock:Pressingthiskeywillmakeeveryletteryoutype capitalized.
7. Control(Ctrl):Thiskey,whenpressedWITHanotherkey,performsashortcut.
8. Enter:Thiskeyeithergivesyouanewline,orexecutesacommand.
9. Number Keypad: Theseare exactly thesameas the numbersat thetop ofthekeyboard; some people just find them easier to use in this position.
10. ArrowKeys:Likethemouse,thesekeysareusedtonavigatethroughadocumentorpage.

Pointer Shapes

As with other Microsoft programs, the pointer often changes its shape as you work in Excel. Each pointer shape indicates a different mode of operation. This table shows the various pointer shapes you may see while working in Excel.

MICROSOFTEXCEL BASICS

Formatting Cells

Cells are the small rectangular boxes that make up the spreadsheet. All the information entered into an Excel spreadsheet is entered into cells. The cell width and height will usuallyneed to be adjusted to viewall the information entered into a cell.

To adjust the cell width, move the mouse pointer in between two cell columns in the columnheader.Holddowntheleftmousebuttonanddragthemouselefttoshortenthe widthorrighttoexpandthewidth.Noticethatallcellswithinthecolumnareautomatically adjusted.Adjustthecellheightusingthesamemethod.Movethemousecursorbetween tworows,holddowntheleftmousebuttonandmovethemouseuptodecreasetheheight anddowntoincreasetheheight.Beforeyoubeginenteringdataintoaspreadsheet,you mayalreadyknowthewidthandheightyouwantyourcellstohave.Inthiscase,youcan adjust all the widths and heights by doing the following: Select the "square" between Column A and Row 1.

ThiswillselectALLthecellsinthespreadsheet.Fromthe"Home"taboftheRibbonMenu, within the "Cells" box, click on "Format," and select Row Height. ↔ou will nowbe asked toenteranumericalvalueforheight.Thedefaultvalueis15,butyoucanenteryourown height value (10, 20, 25, etc.).

RepeatthesamestepsforColumnwidth.Fromthe"Home"taboftheRibbonMenu,within the "Cells" box, click on "Format," and select Column →idth. Note that the default value forthewidthis8.43.Enteryourownwidthvalue(5,10,15,20,etc.).

Foranygivencellorselectedcells,youcanalsoformatthewayyourdataisrepresentedwithin the cell(s). Select a single cell or multiple cells.

Again,fromthe"Home"taboftheRibbonMenu,withinthe"Cells"box,clickonFormat." Select "Format Cells."The format window will now appear, giving you a wide variety of options on how to format your cell.

Number – This allows you to choose how to represent the numbers that are entered into a cell (number, currency, time, etc.).
Alignment–Thisdeterminesshowthedatawillbealignedwithinthecell(left-side,centered,or right-side).
Font–Selectthetypeoffonttobeusedwithinthecells.
Border –Thisoptionletsyouchoosewhattypeofborder,ifany,youwouldlikearoundthe cells or some of the cells.
Fill –Thisallowsyoutochangethebackgroundcolorofthecell.
Protection –Thisoption allows you to "lock" cell information so that otherusers cannot make changes.**Typing in Cells**
Clickonacelltobegintypinginit.Itisthateasy!Whenyouarefinishedtypinginthecell, presstheEnterkeyandyouwillbetakentothenextcelldown.Youcanthenbegintyping inthatcell.Youcaneasilynavigatearoundthecellsusingyourarrowkeys.Keepinmind that the Formatting toolbar in Microsoft Excel 2010 is exactly the same as the one used for Microsoft Word 2010. The biggest difference between the two programs is that, in Excel, the format is set for each individual cell.

SoifyouchangethefontandappliedtheboldoptionincellC5,thenthisformatwillonly beappliedtocellC5.Allremainingcellswill remainindefaultmodeuntiltheyhavebeen changed.Sometimesyoumayonlywishtoadjusttheformatofoneparticularcell.Inthis case, simply select the cell by clicking the mouse on it and make any necessary adjustmentstothefont,size,style,andalignment.Thosechangeswillnotcarryoverwhen you begin typing in a new cell. Other times, you may wish to adjust the text format of a group of cells, entire rows, or entire columns.

InExcel,youcanchoosegroupsofcellsinrectangularunits—allthe cells you select must form a rectangle of some kind. To select a group of cells, begin by clicking on the cell that would be in the upper-left hand corner of your rectangle. Hold downtheShiftkeyonyourkeyboardandusethearrows(,,,)onthekeyboardtoexpand the selection of cells, or click and drag your mouse. Once the group of cells has been selected, you can make adjustments to the font, size, style, and alignment and they will be applied to all selected cells.

Toselectanentire row, click ontheRowNumber with your mouse—note howtheentire rowbecomeshighlighted.Allformattingchangeswillnowbeappliedtothewholerow.To selectanentirecolumn,clickontheColumnNumberwithyourmouse—again,theentire column will become highlighted. All formatting changes will be applied to the whole column.

InsertingRowsand Columns.
Whenyouareworkingonaspreadsheet,youmayrealizethatyouleftoutaroworcolumn ofdataandneedtoadditin.Toinsertarow,clickontherowbelowwhereyouwantyour

newrowtobe(remembertoclickontherownumbertohighlighttheentirerow).Fromthe "Home" tab, within the"Cells" box, click "Insert." Select

"Insert Sheet Rows." A new row will automatically be inserted and the row numbers automaticallyadjusted.Toinsertacolumn,clickonthecolumntotherightofwhereyou wantyournewcolumntobe(remembertoclickonthecolumnlettertohighlighttheentire column).Fromthe"Home"tab,withinthe"Cells"box,click"Insert."Select"Insertsheet Columns." A new column will automatically be inserted and the column letters automatically adjusted.

SortingData

Once you have created your spreadsheet and entered in some data, you may want to organize the data in a certain way. This could be alphabetically, numerically, or another way.Let'slookatthefollowingspreadsheetasanexample.Thisinformationcanbesorted bycheck number, date, alphabeticallybydescription, orusing anyof the other columns.

First, select all the cells that represent the data to be sorted, including the header descriptions (Check No., Date, Description, etc.). Then, select the first cell in Row 1 (Check No.) Click anddragto selectallthe cells that you want to sort. Usingthemouse, select Sort & Filter from the Editing panel. Select Custom Sort…
Selectthecolumnyouwishtosortby.Doyouwanttosortby alphabeticalorder,reverse alphabetical order, date, or amount? →hen you press "OK," your spreadsheet will be sorted in the order that you specified.

AutoSumandExcelEquations

OneofthemostpowerfulfeaturesofExcelisitsabilitytoperformbasicmathfunctionson data. Excel can add, subtract, multiply, divide, find the average, and perform general countingfunctionsonthenumericaldatathatyouenter.Toenablethisfeature,highlight allof the cells in a column,plusoneadditional empty cellin which todisplaythe result.

SelecttheAutoSumiconfromtheribbonmenu:

If you click directly on the ∑, Excel will automatically add up the numbers you have selected.Ifyouclickonthelittledropdownarrownexttoit(▼),youwillgetthefullchoice ofmathematicalfunctions.Ifyoudouble-clickonthecellinwhichtheanswerappears,you will see an equation that looks something like this (you will also see this equation in the Equation Editor):
Let'sbreakdownwhatexactlytheequationmeans:
=indicatesthatyouarestartinganequationinthiscell.
SUMtellsthefunctiontobeperformed.Inthiscase,allthecellswillbeaddedtogether.
( )Theparentheses containthecells that thefunction will be performedon.
D2thisisthefirstcelltobeincludedintheadditionformula.
D8thisisthelastcelltobeincludedintheadditionformulaindicatesthatallcellsbetweenthe first and the last should be included in the formula.
Thespreadsheetwilloften"select"thecellsthatitthinksyouwishtoinclude.Butyoucan manuallychangethecellrangebytypingintotheEquationEditor.Whenyouarereadyto

execute the formula, just press the "Enter" key. Other mathematical functions you can perform from the AutoSum button include:

Average – This function will calculate the average of the selected cells.

CountNumbers–Thisfunctionsimplycountsthenumberof cellsselected. **Max** –

This function will return the highest value of the selected cells.

Min–Thisfunctionwillreturnthelowestvalueoftheselectedcells.

Remember Excel equations are similar to programming languages, so have some patience and if at first you don't succeed, try again. Even Excel professionals create incorrect formulas on their first try.

Onceyougetanequationtowork,youwilltechnicallybeacomputerprogrammer!

Creating Charts andGraphs:

InExcel,therearealsowaystorepresentyourdatainchartorgraphicalforms.Tocreate achartorgraph,selecttheInserttabfromtheRibbonMenubar.Inthemiddleofthisnew menu, you will see a "Charts" box.

1. Select the range of data to be represented in the chart or graph. Click on your spreadsheetandselectthedatatoberepresentedusingthesamemethodthatyouused toselectdatainthesortingexercise.Forthisexample,wewanttoseeavisualcomparison ofhowmuchmoneywespentoneachiteminthelist.Selectrows1through8inrowsB, C, and D.
2. Select the type of chart or graph you wish to create (for our example, we'll choose a bar graph).
3. Onceyouhavecreatedyourgraph,youcannow"customize"itbygivingitatitleand labeling different parts. You can also make certain design decisions regarding the appearance of your graph or chart by choosing the different elements under the Design tab that appears on the Ribbon Menu bar.
4. Finally, you will need to decide if your chart should be pasted on to the existing spreadsheet or if it should be pasted on to a brand new sheet. On the very right side of the Ribbon Menu bar,select Move Chart. Once the chart or graph has been created and yourealizeamistakehasbeenmadeoritdidnotturnoutthewayyouwanteditto,simply click on the chart or graph and hit the Backspace keyon your keyboard to delete itfrom your spreadsheet. Don't be afraid to go back and try again!

Multiple Sheets

Sometimes you may find it useful to have multiple spreadsheets for related data. For example, personal finances are usually tracked on a monthly calendar and it's generally goodideatokeeprecordsofthepasttransactions.Excelcancreatemultiplespreadsheets attached to the same Excel file, one for each month. Tabs for the different sheets are locatedinthelower-leftcornerofthespreadsheet.Thespreadsheetthatiscurrentlybeing worked on is on the top tab. To access another spreadsheet, select the appropriate tab, suchasSheet2.Thedefaultnamesforthesheetsareusuallysheet1,Sheet2,andSheet3.

Torenameasheetortocreateanewsheet,simplymovethemousepointeroverthesheet name and right-click. Select "Rename" to rename the sheet or select "Insert" to create a new sheet.

You can transfer cell information between two or more sheets by creating a simple formula.Forexample,mostpeoplewhokeeptrackoftheirpersonalfinancesdon'tbegin everymonthwith abalanceof $0.Instead, the balanceatthebeginningof themonthis transferred over from the previous month. So if you have a March 2012 finance spreadsheetandanApril2012financespreadsheet,youcanselectacellintheApril2012 sheet and write in the formula

='March2012'! D11

Theequalssign(=)tellsExcelthatthevalueforthiscellistobederivedfromsomewhereinthe spreadsheet (such as a formula or another cell location).
'Sheet name' tells Excel what sheet to refer to when it retrieves the value. The single quotation marks (' ') are important. ! D11 tells Excel that it is to copy the value that is located in cell D11 (or whatever cells you wish to copy the value from).
If you want to transfercellinformationfromone celltoanotheron the same sheet, you can use the exact same formula; just exclude 'Sheet name.'

DOINGMOREWITHMICROSOFTEXCEL

Cutting,Copying,andPastingData

Whenyouaretypinginyourspreadsheet,itcanbeveryhelpfultocutorcopyinformation from one cell and paste it into another. This can help reduce the amount of typing you have to do, as well as limit the number of typographical errors. Cutting, copying, and pastingthecontentsofcellsinExcelisverysimilartothewayyoudoitinMicrosoftWord.
ThesecommandsareallaccessiblefromtheHometabontheRibbonMenubar. **To CUT** thecontentsofacell,clickonthecelltoselectit,thenclickontheCutbuttonontheHome tab. ↔ou will see the borderof the cell turninto little "marching ants." The contents are now on the Clipboard, ready for you to paste them somewhere else.

To PASTE the cut selection somewhere else, clicks on the cell where you want the selection to go. Then click on the Paste button on the Home tab. The selection will now appear in the new cell and be removed from the original cell.

To COPY the contents of a cell, simply follow the directions above but replace the CUT command with COPY. This will leave the contents of the original cell in place and make an exact copy of them in another cell.

FillingDataacrossColumnsand Rows

Another way to copy text from one cellto another is to drag it or "fill" it across a range of cells (a row or a column). This is a great method if you want all the text (or numbers) in column or row to be the same. For example, if you have a spreadsheet for your yearly budget with a column for rent, you could use this method to fill in all the cells in the rent column with the same number without re-typing.

Tofillthecontentsofcellsinacolumn:
1. Clickonthecellwiththeinformationyouwanttocopytotheothercells.

2. Hoveryourmouseoverthelittlesquare(calleda"fillhandle")inthebottomrightcornerofthe highlighted cell border. Your mouse will turn into a cross.
3. Click on the fill handle and drag your mouse (while still holding the button down) down the columnuntilyou'vehighlightedallthecellswhereyouwantthetexttogo.
4. Letgoofthemousebutton.Thetextwillnowappearinallthecellsyouhighlighted.
5. You can follow these same steps to fill the contents of a row rather than a column— simply drag your mouse across the row instead of down the column.

Youcanalsousethistechniquetocopyformulasacrosscolumnsandrowsinthespreadsheet.

CLOSINGMICROSOFTEXCEL

SavingSpreadsheets

Whenyoufinishyourspreadsheetandwanttoleavethecomputer,itisimportanttosave yourwork,evenifyouareprintingahardcopy.TosaveyourworkinExcel,itisessential to know WHAT you are trying to save and WHERE you are trying to save it.

Click on the File Tab, then click **"Save As"** to get started. You can change the filename thatExcelhaschosenjustbytypinganewoneinthe"Filename"boxatthebottomofthe windowthatappears.The MyDocumentsfolder on yourcomputer's harddrive isa good placetostoreyourdocuments.AblankCDoraUSBjumpdriveareagreatportablestorage optionsand cancontain a LOT of data.Excelwillautomaticallysave yourdocumentwith thesuffix".xlsx"–thisissimplyatagthatletsExcelknowthatyourworkisspecifictothis program andwhatversionitisin.Youdonothaveto typeit–justhighlight whatisthere (defaultis"Book1")andwriteanewfilename.↔oumayalsochosetosaveitinanolder formatsothatitcanbeopenedwitholderversionsof Excel.Afterthefirstsave,youcan just click "Save" to preserve your work.

However,itisimportanttonotethateveryfollowingcommandofSAVEwilloverwriteyour originalfile,creatingthemostup-to-dateversion.Ifyouwouldliketokeepsavingdifferent versions of your worksheet, be sure to use the "Save As" function each time you save, using a slightly different name for each version.

Printing Spreadsheets

ToprintyourExceldocument,clickontheFileTab,thenclick"Print"fromtheleft-sidecolumn. A Print Preview and printing options will appear in your Excel window.

Clickthelarge"Print"buttontosendyourworksheettotheprinter.↔oucanchangethe number of copies you would like to print, change the paper orientation, choose which printer you want to use, and more.

Finding More Help

You can get help with Excel by clicking on the Question Mark symbol in the upper-right handcornerofthemainmenubarorbypressingthe"F1"button.Thiswilltakeyoutohelp from Office.com, Microsoft's help website. There are also many other resources and tutorialsavailableonline.↔oumighttryaGooglesearchwiththewords"Excel2010"and

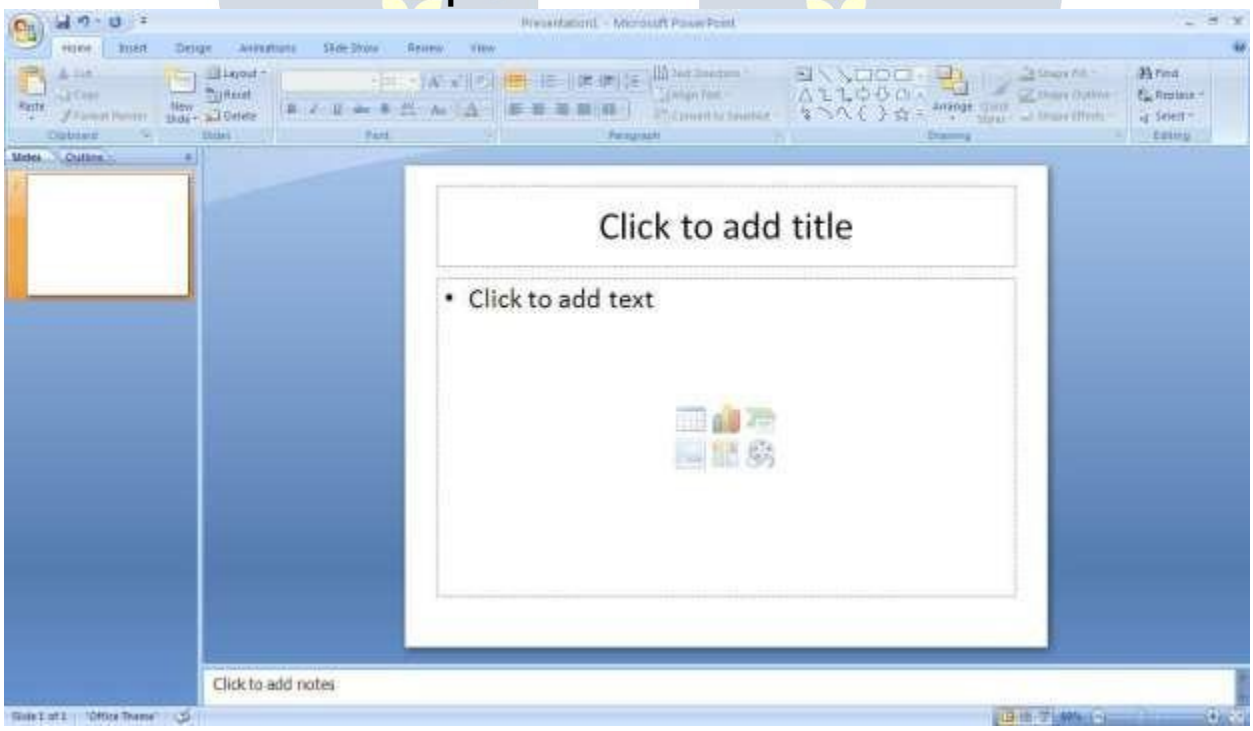
thefunctionyouaretryingtoperform.Askyourinstructorforhelpfindingtheseresources if you have any trouble.

Closing the Program
ClickontheFileTab,thenclick"Exit." OR
ClickontheXinthetoprightcorneroftheExcelscreen.

MICROSOFTPOWERPOINT

MicrosoftPowerPointisaprofessionalpresentationprogramthatallowstheusertocreate "presentationslides"thatcanbedisplayedonthecomputerscreenorthroughaprojector that is plugged in to the computer. A PowerPoint presentation is a good way to convey pieces of information, usually in the form of an outline, to a large audience. Generally, PowerPoint presentations are appealing to users because they are easy to create and edit and generallysmall enough tofit onto aCD or a USB Jump Drive. Therefore, a user does not have to carry around any slides or a slide project, and, if necessary, can make last-minute changes to the presentation.

MicrosoftPowerPointComponents:



Beforeyou get startedwith Microsoft PowerPoint (commonlyreferred toasPowerPoint), youwillneedtolocateandopenitonthecomputer.Itmaybeonyourdesktop.
Onthecomputerdesktop:
1. Double-clickontheMSPowerPointicon
IftheMSPowerPointiconisnotonthedesktop,gototheStartmenu:

1. Click ►Start►Programs►MicrosoftPowerPoint*
MSPowerPointwillopenablankpagecalled"Presentation1."

TheTitleBar

Thisisaclose-upviewoftheTitleBar,wherefileinformationislocated.Noticethedefault title "Presentation1." You will get a chance to rename your presentation slides the first time you choose to save it.

TheMenu Bar

The Menu Bar is a common sight in almost all Microsoft Windows programs. It features text based menus, on which virtually every option available to the user in the entire program is listed.
Each menu expands when clicked (with the left mouse button), offering many options categorized by specific tasks.

Standard Toolbar

Toolbars provide "shortcuts" to commands also found in the Menu Bar. Toolbars are usually located just below the Menu Bar and exist to offer another way to perform the same task.
The most commonly used commands in MS PowerPoint are also the most accessible.
Some of these commands are:
New|Open|Save|Print |Preview| Spell-check|Copy|Paste|Undo| Insert

Formatting Toolbar

The Formatting Toolbar offers options that can change the font, size, color, alignment, organization, and style of the text in thepresentation slides. For example, (startingfrom theleftsideoftheToolbar)the"Arial"indicatestheFONTofyourtext;the"32"indicates theSIZEofyourtext;andsoon.ThistoolbarworkstheexactsamewayastheMSWord FormattingToolbar.Themaindifferenceisthattheformatchangeswillonlyaffectthetext box in which you are currently working.
Allothertextboxeswillremaininthedefaultsetting("Arial"font,size"32").Design/New Slide Icons additional shortcut icons appear on the MS PowerPoint toolbar: the Design icon and the New Slide icon. Both commands are frequently used, and it is good to be familiar with their location on the toolbar.

TheDesign icon isashortcuttotheslidedesign page.Hereyou will be abletocreateandedittheappearanceof yourslide(s).TheNewSlideiconautomatically adds a new, blank slide for you to work on. You can keep track of the slides you have already worked on in the Slide Outline box on the left-hand side of the screen. You can access a slide at any time by clicking on it with your mouse through this screen.

SIMPLETASKSINMICROSOFTPOWERPOINT

Text Boxes:

Text Boxes are "designated" areas that allow you to type words, sentences, and bullet points into the slide. You can adjust the size and placement of the text box within any given slide. It is also possible to have multiple text boxes per slide.

WhenyoufirstopenMSPowerPoint,therewillautomaticallybetwotextboxesontheslide: "Clicktoaddtitle"and"Clicktoaddsubtitle."Thesetextboxesalready haveapreset format applied to them. The"title" boxhasafont size of "44" while the "subtitle" boxhas afontsizeof"32."Youcanchangethetextformatofanyboxatanytimebyadjustingthe formatsettingsontheFormattingToolbar.Toadjustthesizeofthetextbox,firstclickon thetextbox.Noticethechangeinborder.Onceyouhaveclickedonatextbox,theborder oftheboxbecomesthickerandlittlecirclesappearonthecornersandatthemidpointsof thebox.Movethemousepointeroveranyoneofthecircles.Noticethatthemousepointer willchangetoeitheror.Clickandholddowntheleftmousebutton.Toadjusttheheight, movethemouseupordown;toadjustthewidth,movethemouseleftorright.Notethat the corner circles can adjust both height and width, while the mid-point circles can only adjust either height or width.

To move the text box to a different location on the slide, move your mouse pointer over anypartofthethick,grayboxoutline.Noticethechangeinyourmousepointer(itwilllook somethinglikea"plus"sign(+)witharrows).Clickandholddowntheleftbuttononyour mouse.Youcannowdragthetextboxtoanypositionontheslidebysimplymoving your mouse. To write in a text box, simplyclick inside the boxwith your mouse. Whenacursorisflashing,youarereadytotype.

Slide Design:

OneofthemorepopularfeaturesofMSPowerPointisthatitgivestheuseawidevariety of design choices. At some point, you may wish to change the design and color of the background of your slides. To do so, simply click on the Design icon. On the righthand sideofyourscreen,the"SlideDesign"panewillappear.Here,youaregiventhreedesign options to apply to your slides.

Design Templates:Hereisalistofover20templatesthatyoucanchoosefromtoapply tothebackgroundofyourslides.Foreachtemplate,youhavetheoptionofapplyingthe designtoallslidesortoonlytheselectedslide.Youcanviewtheseoptionsbyclickingon thearrowontherightsideofthetemplate.IfyouareconnectedtotheInternet,youcan also choose to viewhundreds of additional templates bychoosing"Design Templates on Microsoft Office Online" on the bottom of the template screen.

Color Schemes: This option gives you a variety of color schemes to choose from to apply to your selected design template.

AnimationSchemes:Thisoptionwillallowyoutoselectdifferenttypesofanimationthat can be applied to either all the slides or selected slides. The animation schemes are different ways the slides are "introduced" to your audience, such as "faded wipe" or "pinwheel."

Designingyour ownbackground:

Sometimesyoumaywishtodesignyourownbackground.
To do this, select Format ► Background… from the Menu Bar. Select the Color Bar on the bottom of the Background window and choose the appropriate color and or/effects thatyoudesire.Thereisnorightorwrongwaytodesignyourownbackground,soifyou choose this option, have some patience and don't be afraid to experiment.

Slide Layout:

ThedefaultinPowerPointforeachnewslideistohaveaTitletextboxandaTextbox.As discussed earlier, you do have the option of rearranging the text boxes to fit any layout you have in mind. However,sometimes it willbe easiersimplyto select a layout thatfits your needs rather than reformatting the default layout for each slide. To choose a slide layout, select Format► Slide Layoutfrom the Menu Bar. On the right-hand side of your screen,the"SlideLayout"panewillappear.Fromhere,youhavetheoptionofapplyinga slidelayouteithertoaselectedslideortoanewslidethathasyettobeinserted.Youcan viewthese optionsbyclickingon thearrowon the right sideof the template.

Notethefourdifferenttypesoflayout categories.

TextLayout: Theseoptionsareforchoosingalayoutinwhichyouareonlyorganizingdifferent text boxes. There is no room for pictures, charts, or graphs.

ContentLayout: Theseoptionsareforchoosingalayoutthatwillonlycontainpictures,charts, or graphs. There is no room for text boxes.

TextandContentLayout:Theseoptionshaveroomforbothtextboxesand pictures,charts,or graphs.

Other Layouts: Theselayoutsaredesignedforothermediacontentsuchasvideoclipsor audio tracks.

Inserting a Picture:

InsertingapictureintoMSPowerPointisverysimilartoinsertingapictureintoMSWord.

1. Selecttheslidethatyouwishtoaddapictureto.

2. FromtheMenuBar,selectInsert►Picture►FromFile(orClip Art).

3. Choosethepictureyouwishtoinsertandselect"Insert."

***Note*:** Thepicturewillbeinsertedinitsoriginalsize,soyouwillprobablyhavetoresize it. You can re-size a picture the same way you re-sized a text box. Click on the picture andnotethecirclesatthecornersandatthemidpointsofthelengthandwidth.Moveyour

mouse pointeroverthe circles, left-click themouse and hold the button down. Move the mouse vertically or horizontally to re-size.

Rotating a picture: ItispossibletorotatepicturesinMSPowerPoint.Onceapicturehas been inserted onto a slide and you have clicked on the picture so it is "outlined," notice the green circle above the center of the picture.

Move the mouse pointer over the green circle, and left-click and hold the button down. Nowmove themouseeitherclockwise orcounter-clockwise and thepicture willrotatein the same direction.

Inserting aGraph or Table:

Therearetwowaystoinsertagraphortable intoaPowerPointslide.

1. The graph or table may already exist in another document or file. If this is the case, then you can simply insert the graph or table as you would a picture. Follow the instructions under

Inserting a Picture.

OryoucouldCut and Pasteagraph orchartfromanother documentor file into yourslide presentation.

2. MS PowerPoint can create graphs or tables directly in the slide. From the Menu Bar, select

Insert►Chart(orTable).

FortheChartoption,PowerPointwillpresentaverysimplebargraph.

You will need to go in and edit the information in the bar graph to conform to the information you wish to represent in a chart. From the Datasheet, you can enter in the appropriate values for the columns and re-name the entities.

TheTableoptionwillpresentyouwiththefollowingwindow:

Selecttheappropriatenumberof rowsandcolumnsyouwishtohaveinyourtable.Click **"OK"**to insert the table. Once the table has been inserted you will be able to put information into the table cells.

Slide Management:

Onceyouhavecompletedaslide,youcancreateanewslidebyclickingontheNewSlide icon. Notice that your previous slides still appear on the left-side frame. You can still access your previous slides by simply clicking on them from this location.

Once all your slideshave been completed, you can present your slides in a "slideshow." From the Menu Bar select Slide Show► ↑iew Show. Notice that the slide takes over our entirescreen.Tonavigatethroughtheslides,usethearrow keysonyourkeyboard(,or,).↔oucanalsonavigatethroughyourslidesbyclickingon theleftorrightarrowsinthelowerleftcornerofyourslide.Toendyourslideshow,click on the squareboxon the lower left side of your slide show(this is difficult to see at first because it is designed to blend into you slide show so it won't be noticeable to your audience). Select End Show from the pop-up window.

CLOSINGMICROSOFT POWERPOINT

SavingSlideShows:

Whenyoucometoastoppingpointandwanttoleavethecomputer,itisimportanttosave yourwork(evenifyouareprintingahardcopy—savingshouldbeareflex).Tosaveyour work in MS PowerPoint, it is essential to know WHAT you are trying to save as well as WHERE you are trying to save it.

Click►File►Save fromtheMenu Bartogetstarted.

YoucanchangethefilenamethatPowerPointhaschosenjustbytypinganewoneintheFile name box at the bottom of the windowthat appears.

MSPowerPointwillautomaticallysaveyourdocumentwiththesuffix".ppt"–thisissimply atagthatletsPowerPointknowthatyourworkisspecifictothisprogram.Youdonothave to type it – just highlight what is there (default is "Presentation1") and write a new file name.

The My Documents folder on your computer's hard drive is a good place to store your documents. A blank CD (compact disc) or a USB Jump Drive are great portable storage devices and can contain a LOT of data. It is important to note that every consequent commandofSAVEwilloverwriteyouroriginalfile,creatingthemostup-to-dateversion.If you want to save any changes to your PowerPoint slides without destroying the original one:

IntheMenuBar,click►File►SaveAsfromthemenubarandgiveyourdocumentanew filename (unique from the original). To bring a saved document back up on the screen from MS PowerPoint:

Click►File►OpenfromtheMenuBar.Locatewherethefileislocated(whichfolder,thatis) and click on the filename of the document you want.

Click ►Open.

PrintingSlides:

Toprint your MS PowerPointslides:

Click►File►PrintfromtheMenuBarandaPrintwindowwillpopuponthescreen. Click ►OK for your document to start printing.

AswithallcommandsinMSPowerPoint,youcanmakechangesalongtheway.Fromthe Printmenu,youcanalterhowmanycopieswillbemade,inwhatorderthepageswillbe, andmuchmore.OtherusefultoolsarethePrintPreviewfunctionfoundalongsidethePrint command and the

Page Setup function. Print Preview will allow you to look over an exact copy of what will come out of the printer before actuallyexecuting the print command.

Closing the Program:

Whenyouarefinished,

Click►File►Exitfromthemenubar OR

ClickontheXinthetoprightcornerofthecomputerscreen.

INTERNET:

Introduction:

Theinternetinsimpletermsisanetworkoftheinterlinkedcomputernetworkingworldwide, which is accessible to the general public. These interconnected computers work by transmittingdatathrough a special type of packet switching which is known as the IPor the internet protocol.

Internet is such a huge network of several different interlinked networks relating to the business,government,academic,andevensmallerdomesticnetworks,thereforeinternet isknownasthenetworkofalltheothernetworks.Thesenetworksenabletheinternetto be used for various important functions which include the several means of communications like the file transfer, the online chat and even the sharing of the documents and web sites on the WWW, or the World Wide Web.

It is always mistaken said that the internet and the World Wide Web are both the same terms,oraresynonymous.Actuallythereisaverysignificantdifferencebetweenthetwo whichhastobecleartounderstandboththeterms.TheinternetandWorldWideWebare boththenetworksyet;theinternetisthenetworkoftheseveraldifferentcomputerswhich areconnectedthroughthelinkageoftheaccessorieslikethecopperwires,thefiberoptics and even the latest wireless connections. However, the World Wide Web consists of the

interlinked collection of the information and documents which are taken as the resource by the general public. These are then linked by the website URLs and the hyperlinks. Therefore World Wide Web is one of the services offered by the whole complicated and hugenetworkoftheinternet.TheuseofIPintheInternetistheintegralpartofthenetwork, astheyprovidetheservicesoftheinternet,throughdifferentlayersorganizationthrough theIPdatapackets.Thereareotherprotocolsthatarethesub-classesoftheIPitself,like the TCP, and the HTTP.

Bytheturnofthecentury,information, includingaccesstotheInternet,willbethebasis for personal, economic, and political advancement. The popular name for the Internet is theinformationsuperhighway.Whetheryouwanttofindthelatestfinancialnews,browse throughlibrarycatalogs,exchangeinformationwithcolleagues,orjoininalivelypolitical debate,theInternet isthe tool that will take you beyond telephones,faxes, and isolated computerstoaburgeoningnetworkedinformationfrontier.TheInternetsupplementsthe traditionaltoolsyouusetogatherinformation,DataGraphics,Newsandcorrespondwith other people. Used skillfully, the Internet shrinks the world and brings information, expertise, and knowledge on nearly every subject imaginable straight to your computer.

What isthe Internet?

The Internet links are computer networks all over the world so that users can share resources and communicate with each other. Some computers have direct access to all the facilities on the Internet such as the universities. And other computers, example privately-owned ones, have indirect links through a commercial service provider, who offerssomeoralloftheInternetfacilities.InordertobeconnectedtoInternet,youmust gothroughservicesuppliers.Manyoptionsareofferedwithmonthlyrates.Dependingonthe option chosen, access time may vary.
TheInternetiswhatwecallaMetanetwork,thatis,anetworkofnetworksthatspansthe globe. It's impossible to give an exact count of the number of networks or users that comprise the Internet, but it is easily in the thousands and millions respectively. The Internetemploysasetofstandardizedprotocolswhichallowforthesharingofresources among different kinds of computers that communicate with each other on the network. Thesestandards,sometimesreferredtoastheInternetProtocolSuite,aretherulesthat developers adhere to when creating newfunctionsfor the Internet.The Internet isalso whatwecalladistributedsystem;therearenocentralarchives.Technically,nooneruns the Internet. Rather, the Internet is made up of thousands of smaller networks. The Internet thrives and develops as its many users find new ways to create, display and retrievetheinformationthatconstitutestheInternet.

Who OwnstheInternet?

No one actually owns the Internet, and no single person or organization controls the Internetinitsentirety.TheInternetismoreofaconceptthananactualtangibleentity,and it relies on a physical infrastructure that connects networks to othernetworks.

Is WebandInternetthe Same?

TheInternetisnotsynonymouswithWorldWideWeb.TheInternetisamassivenetwork of networks, a networking infrastructure. It connects millions of computers together globally, forming a network in which any computer can communicate with any other computer as long as they are both connected to the Internet. The World Wide Web, or simplyWeb, is a way of accessing information over the medium of the Internet. Itisaninformation-sharingmodelthatisbuiltontopoftheInternet.

WEBBROWSER:

A **web browser** (commonlyreferred to as a **browser**) is a software application for retrieving, presenting, and traversing information resources on the World Wide Web. An informationresourceisidentifiedbyaUniformResourceIdentifier(URI/URL)andmaybe a web page, image, video or other piece of content. Hyperlinks present in resources enable users easily to navigate their browsers to related resources.

AlthoughbrowsersareprimarilyintendedtousetheWorld WideWeb,theycanalsobe used to access information provided by web servers in private networks or files in file systems.

Usesof Internet

Internetistodayoneofthemostimportantpartofourdailylife.Therearelargenumbers of things thatcan be done using the internet and so it is veryimportant. You can say thatwiththeprogressintheinternetweareprogressingineverysphereoflifeasitnot only makes our tasks easier but also saves a lot of time. Today internet is used for different purposes depending upon the requirement. Here in this very article we have mentioned then ten best uses of the internet. Here goes the list.

1) **Email:**

By using internet now we can communicate in a fraction of seconds with a person who issittingintheotherpartoftheworld.Todayforbettercommunication,wecanavailthe facilities of Email. We can chat for hours with our loved ones. There are plenty messenger services and email services offering this service for free. With help of such services,ithasbecomeveryeasytoestablishakindofglobalfriendshipwhereyoucan share your thoughts, can explore other cultures of different ethnicity.

2) Information:

Thebiggestadvantagethatinternetofferingisinformation.TheinternetandtheWorld WideWebhasmadeiteasyforanyonetoaccessinformationanditcanbeof anytype, as the internet isflooded with information. The internet and theWorldWideWeb has made it easy for anyone to access information and it can be of any type. Any kind of information on any topic is available on the Internet.

3) Business:

World tradehasseena bigboom with the help of the internet,as ithas becomeeasier for buyers and sellers to communicate and also to advertise their sites. Now a day's most of the people are using online classified sites to buy or sell or advertising their products or services. Classified sites save a lot of money and time so this is chosen as mediumbymostofpeopletoadvertisetheirproducts.Wehavemanyclassifiedsiteson the web like craigslist, Adsglobe.com, Kijiji etc.

4) SocialNetworking:

Todaysocialnetworkingsiteshavebecomeanimportantpartoftheonlinecommunity. Almost all users are members use it for personal and business purposes. It's an awesomeplacetonetwork with manyentrepreneurs who comehere tobegin building their own personal and business brand.

5) Shopping:

In today's busy life most of us are interested to shop online. Nowa day's almost anythingcanbeboughtwiththeuseoftheinternet.Incountrieslike USmostof consumers prefer to shop from home. We have many shopping sites on internet like amazon.com, Dealsglobe.com etc. People also use the internet to auction goods. There are many auction sites online, where anything can be sold.

6) Entertainment:

Oninternetwecanfindallformsofentertainmentfromwatchingfilmstoplayinggames online. Almost anyone can find the right kindof entertainmentfor themselves.When people surf theWeb, there are numerous things that can be found. Music, hobbies, news and more can be found and shared on the Internet. There are numerous games thatmaybedownloadedfrom theInternetforfree.

7) E-Commerce:

Ecommerce is the conceptusedfor anytype of commercial maneuvering, or business dealsthatinvolvesthetransfer of informationacross the globe via internet.Ithas becomeaphenomenonassociatedwithanykindofshopping,almostanything.Ithas got a real amazing and range of products from household needs, technology to entertainment.

8) Services:

Many services are now provided on the internet such as online banking, job seeking, purchasing tickets for your favorite movies, and guidance services on array of topics in theeveryaspectoflife,andhotelreservationsandbillspaying.Oftentheseservicesare not available off-line and can cost you more.

9) Job Search:

Internetmakeslifeeasyforbothemployersandjobseekersastherearеplentyofjobsites which connect employers and job seekers.

10) Dating/Personals:

People areconnecting with others though internet andfinding their life partners. Internetnotonlyhelpstofindtherightpersonbutalsotocontinuetherelationship.

E-mailing

Short for electronic mail, e-mail or email is text messages that may contain files, images, orother attachments sent through a network to a specified individual or groupofindividuals.Thefirste-mailwassentbyRayTomlinsonin1971.By1996, more electronic mail was being sent than postal mail.

"Email,e-mailorelectronicmailisthetransmissionofmessages(emailsoremail messages) over electronic networks like the internet."

Email, sometimes written as e-mail, is simply the shortened form of "electronic mail," a system for receiving, sending, and storing electronic messages. It has gained nearly universalpopularityaroundtheworldwiththespreadoftheInternet.Inmanycases,email has become the preferred method for both personal and business communication.

HowItIsUsed

Messages sent by electronic mail normally reach a recipient's account within seconds. They frequently include more than just text; images and numerous types of formatteddocuments are noweasily included as attached files. Moreover, it is no longer necessary tobesittinginfrontofaPCtosendorreceiveanemail.Avarietyofmobiledevices,such as tablet computers and smart phones, make it possible manage correspondence on the go.

Moste-mailsystemsincludearudimentarytexteditorforcomposingmessages,butmany allow you to edit your messages using anyeditor you want. You then send the message to the recipient by specifying the recipient's address. You can also send the same message to several users at once. This is called ***broadcasting***.

Sentmessagesarestoredinelectronicmailboxesuntiltherecipientfetchesthem.To see ifyouhaveanymail,youmayhavetocheckyourelectronicmailboxperiodically,although manysystemsalertyouwhenmailisreceived.Afterreadingyourmail,youcanstoreitin atextfile,forwardittootherusers,ordeleteit.Copiesofmemoscanbeprintedoutona printerifyouwantapapercopy.E-mailcanbedistributedtolistsof peopleaswellasto individuals. A shared distribution list can bemanaged by usingan e-mail reflector. Some mailinglistsallowyoutosubscribebysendinga requesttothemailinglistadministrator. A mailing list that is administered automatically is called a list server.

Togetagraspofwhatemailisit'sbest—theterminologyindicatesit—tothinkinequivalents of "traditional" postal mail.

- **The email message** - Instead of using a pen to write a letter on paper, you're using your keyboard to type an email message in an email program on your computer.
- **Sending the email** - When the email is finished and has been addressed to the recipient's email address, you don't put a stamp on it and post it but press the *Send* button in the email program. This makes the email message go on its journey.
- **Email transport** - Like postal services transport letters and parcel, email servers transmit email messages from sender to recipient. Usually, emails are not delivered to therecipientdirectly,though,butwaitingatthe"nearest"mailservertobepickedupby them.
- **Fetchingnew mail** -Ifyou'vegotnewmailinyourmailbox,yougoandfetchit.Similarly, your email program can check for new email messages at your mail server and download them for you to read.

DESKTOP PUBLISHING

(PAGEMAKER,CORELDRAW,PHOTOSHOP)

DESKTOPPUBLISHING:

Desktop publishing (abbreviated DTP) is the creation of documents using page layout skills on a personal computer. When used skillfully, desktop publishing software can produce text and images with attractive layouts and typographic quality comparable to traditional typography and printing, so DTP is also the main reference for digital typography. This technology allows individuals, businesses, and other organizations to self-publisha wide range of printed matter—from menus and localnewsletterso books, magazines, and newspapers—without the sometimes-prohibitive expense of commercial printing.

The same DTP skills and software used for common paper and book publishing are sometimes used to create graphics for point of sale displays, promotional items, trade show exhibits, retail package designs and outdoor signs. Although what is classified as "DTPsoftware"isusuallylimitedtoprintandPDFpublications,DTPskillsaren'tlimitedto print. The content produced by desktop publishers may also be exported and used for electronicmedia.Thejobdescriptionsthatinclude"DTP"suchasDTPartistoftenrequire skills using software for producing e-books, web content, and web pages.

Terminology

There are two types of pages in desktop publishing, electronic pages and virtual paper pagestobeprintedonphysicalpaperpages.Allcomputerizeddocumentsaretechnically electronic, which are limited in size only by computer memory or computer data storage space.

Virtualpaperpageswillultimatelybeprinted,andthereforerequirepaperparametersthat coincidewithinternationalstandardphysicalpapersizessuchas"A4,""letter,"etc.,ifnot customsizesfortrimming.Somedesktoppublishingprogramsallowcustomsizes

designated for large format printing used in posters, billboards and trade show displays. Avirtualpageforprintinghasapre-designatedsizeofvirtualprintingmaterialandcanbe viewed on a monitorinWYSIWYGformat. Each page forprinting has trim sizes (edge of paper)andaprintableareaifbleedprintingisnotpossibleasisthecasewithmostdesktop printers.

A web page is an example of an electronic page that is not constrained by virtual paper parameters. Most electronic pages may be dynamically re-sized, causing either the content to scale in size with the page or causing the content to re-flow.

Master pages are templates used to automatically copy or link elements and graphic designstylestosomeorallthepagesofamultipagedocument.Linkedelementscanbe modified without having to change each instance of an element on pages that use the sameelement.Masterpagescanalsobeusedtoapplygraphicdesignstylestoautomatic page numbering.

Page layout is the process by which the elements are laid on the page orderly, aesthetically, and precisely. Main types of components to be laid out on a page include text, linked images that can only be modified as an external source, and embedded images that may be modified with the layout application software. Some embedded images are rendered in the application software, while others can be placed from an external source image file. Text may be keyed into the layout, placed, or (with database publishingapplications)linkedtoan externalsourceof text which allows multipleeditors to develop a document at the same time.

Graphic design styles such as color, transparency, and filters, may also be applied to layoutelements.Typographystylesmaybeappliedtotextautomaticallywithstylesheets. Some layout programs include style sheets for images in addition to text. Graphic styles for images may be border shapes, colors, transparency, filters, and a parameter designatingthewaytextflowsaroundtheobjectcalled"wraparound"or"runaround."

Comparisons

Withwordprocessing

While desktop publishing software still provides extensive features necessary for print publishing, modern word processors now have publishing capabilities beyond those of many older DTP applications, blurring the line between word processing and desktop publishing.

Intheearlydaysofgraphicaluserinterfaces,DTPsoftwarewasinaclassofitsownwhen compared to the fairly Spartan word processing applications of the time. Programs such asWordPerfectandWordStarwerestillmainlytext-basedandofferedlittleinthewayof page layout, other than perhaps margins and line spacing. On the other hand, word processingsoftwarewasnecessaryforfeatureslikeindexingandspellchecking,features that are common in many applications today.

Ascomputersandoperatingsystemshavebecomemorepowerful,vendorshavesoughtto provide users with a single application platform that can meet all needs.

Withotherelectroniclayoutsoftware

In modern usage, DTP is not generally said to include tools such as TeX or troff, though bothcaneasilybeusedonamoderndesktopsystemandarestandardwithmanyUnixlike operating systems and readily available for other systems. The key difference between electronic typesetting software and DTP software is that DTP software is generally interactive andWYSIWYG in design, while otherelectronictypesetting software, such as TeX,LaTeXandothervariants,tendstooperateinbatchmode,requiringtheusertoenter theprocessingprogram'smarkuplanguagewithoutimmediatevisualizationofthefinished product. This kind of workflow is less userfriendly than WYSIWYG, but more suitable for conference proceedings and scholarly articles as well as corporate newsletters or other applications where consistent, automated layout is important.

There is some overlap between desktop publishing and what is known as Hypermedia publishing (i.e. Web design, Kiosk, CD-ROM). Many graphical HTML editors such as Microsoft FrontPage and Adobe Dreamweaver use a layout engine similar to a DTP program.However,someWebdesignersstillprefertowriteHTMLwithouttheassistance of aWYSIWYG editor, for greater control and because these editors often result in code bloat.

What isthe PrintMedia?

Theprintmediaiscomposedofnewspapers,communitynewsletters,wireservices, magazines, and other publications. Within these publications, there are two main divisions of labor: reporting and editing. Reporters are the newspaper writers who investigate newsworthy events and interesting stories. Editors assign stories to reporters, edit storycontent, and decide which stories to print.

Whyis the Print Media Important?

Theprintmediaisaneffectivewaytoalertthepublictotheweatherization Assistance Program and its work. Readers often bypass paid advertising, but a story from an independent journalist increases public awareness and builds local credibility. The media reaches a broad audience of readers on a daily basis. Reporters and editors are always lookingfor interesting, newsworthystories. Attractingmedia attention canhelp expand your influence and name recognition in target communities.

ADVANTAGESANDDISADVANTAGESOFPRINTMEDIA

Oneof themostpopularandgrowingindustriesisthe printmediaand the reasonbeing thefactthatitisoneoftheeasiestwaystoreachtargetedcustomersbyadvertisersand marketers. These advertisers and businessmen make the most of all forms of print media like magazines, newspaper, leafletsetc. If you want to knowmore aboutprint

media,thenreadthisarticleaswebringtoyoutheadvantagesanddisadvantagesof print media here. Read on to find out what are they.

Advantagesofprintmedia

- Flashy magazines are always popular among consumers and are often read by them foraparticularperiodoftimeinamonth.Themonthlymagazinesarethebestwayto bring attention to any advertisements.
- Print media is an easy medium to spread awareness or advertise to any particular geographicalarea. Like, a localnewspaperisthebestwayto spread newsaboutany local event of the place.
- Someformsoftheprintmediahavehugeandtrustedfollowers.Thisisdefinitelya great boost to attract readership.
- Printmediaallowsyoutochooseyourownspaceforadvertisement,thus,youcan manage your budget and expenses while planning for the advertisement.

Disadvantagesofprint media

- Ifyouaretargetingtheglobalaudience,thenthisisnotthemediumyoushouldgofor. Instead,theinternethasa much widerreach thanprintmedia in this.
- Placinganadvertisementinprintmediarequiresalotofplanningandtime.Inthis case,youarefacedwithflexibilityproblem,particularlywhenyouworkintight deadlines.
- Infact, thereismuch limitationswhen it comesto targetingyouraudienceasthe particularnewspapermaynotbeavailabletotheaudienceallthetime.Ontheother hand, a person can get access to the internet from anywhere and everywhere.
- Besides, most of the time, your advertisement might get lost among all other ads and editorials. Plus, the lifespan of newspaperand magazines is veryshort as people have a tendencyto throwthem or keep them aside afterone dayof read.

Therearebothadvantagesanddisadvantagesforprintmedia.Wehavetokeepallthese inmindandmaketherightplanningtomaketheoptimumuseofprintmedia.

CharacteristicsofPrintMedia

Thecharacteristicsoftheprintmediaareasfollows:

1. The print media like newspapers and magazines gives us an in-depth coverage and analysis of news stories around the world. These stories are permanent and readily availabletothecommonpeopleintimesofneed.Thenewsstoriescanberead,re-read and retained.

2. Thetimelinessofnewsintheprintmediaislimited.Unliketheelectronicmedia,theydo notgiveusimmediatenewsbutithastheluxuryof detailedrepresentation,interpretation and analysis.

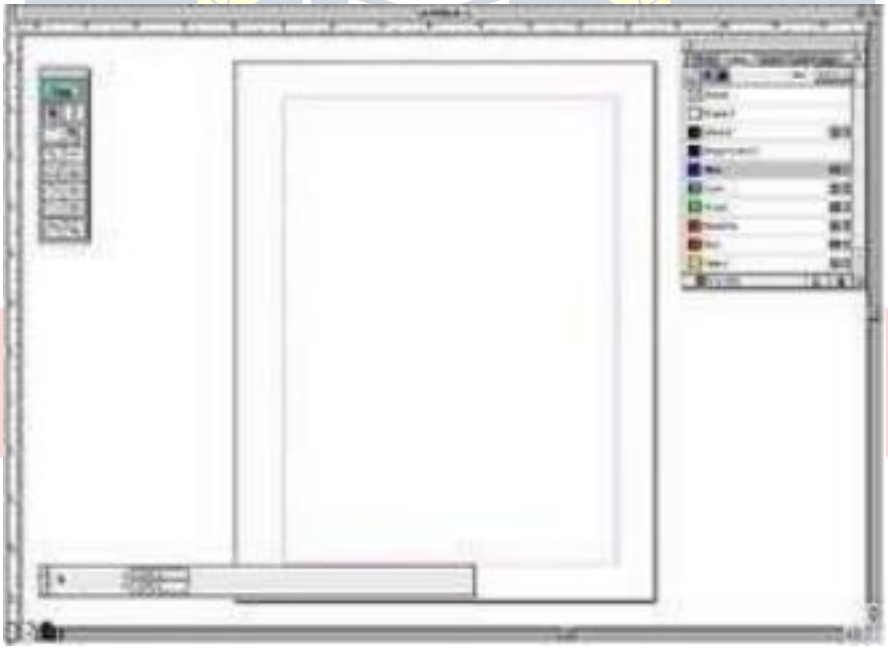
3. Alotofvariationsarefoundintheprintmediaintheformsofhardnews,softnews, features, gossips, page 3 news, etc.

4. Magazinesservespecialinterestslike fashion, food,politics,economics,etc.

PAGEMAKER:

PageMakerwasoneofthefirstdesktoppublishingprograms,introducedin1985byAldus Corporation, initially for the then-new Apple Macintosh and in 1987 for PCs running Windows 1.0.

PageMakerwasawardedanSPAExcellenceinSoftwareAwardforBestNewUseofa Computer in 1986.



PageMakerrelies on Adobe Systems'PostScript page description language, and in 1994Adobe Systems acquired Aldus and PageMaker.

As an application relying on a graphical user interface, PageMaker helped to popularize the Macintosh platform and the Windows environment.

AdobePageMakerisadesktoppublishingsoftwareprogramthatallows youtoview entire pages of a publication, such as a report, pamphlet or booklet.Therefore, it's

easytoformatadocument'slayoutandcontrolvariousdesigndetails,suchasfonts and graphics, prior to printing or distribution.

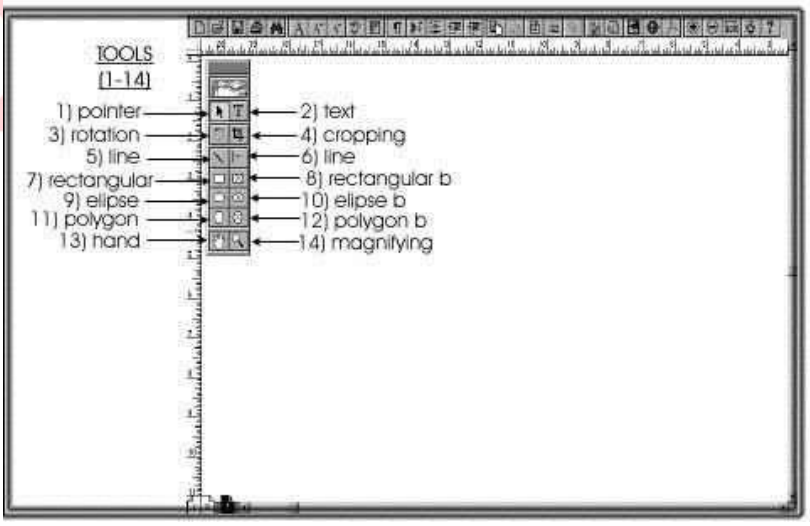
Adobe PageMaker provides graphic designers, print professionals or production artists withtheabilitytocreateprofessionalpagelayouts.Ifyou'repursuingsuchacareer,or if you're interested in desktop publishing for educational or small business purposes, you may want experience with this program.

SystemRequirements

Adobe PageMaker runs on both Windows and Macintosh computers. On Windows machines, it'srecommended thatyour system has 48 MB ormoreof RAM, 200 MBof available hard-disk space and a high-resolution display. If you have a Mac, 45 MB of memory is recommended in addition to the same storage and monitor requirements. Adobehasreleasedupdatestoensuretheproductcontinuestofunctionwithnewercomputer hardware.

Toolsusedinpagemaker

ThefunctionsoftheToolboxshouldbelearnedinordertomakegooduseofthePageMaker program.



WhenPageMakerisflashedup,thetoolboxshouldbeseenonthemonitor.TheToolbarconsists of 14 separate boxes.

TextTool

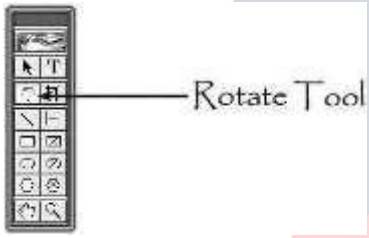
Thetexttool(theletterT)islocatednexttothepointertoolatthetopoftheToolbox..If textistobewritten,theTshouldbeclicked.Thetextboxwilllightenup.Thecursorcan be placed anywhere and text can be written.

The Pointer Tool

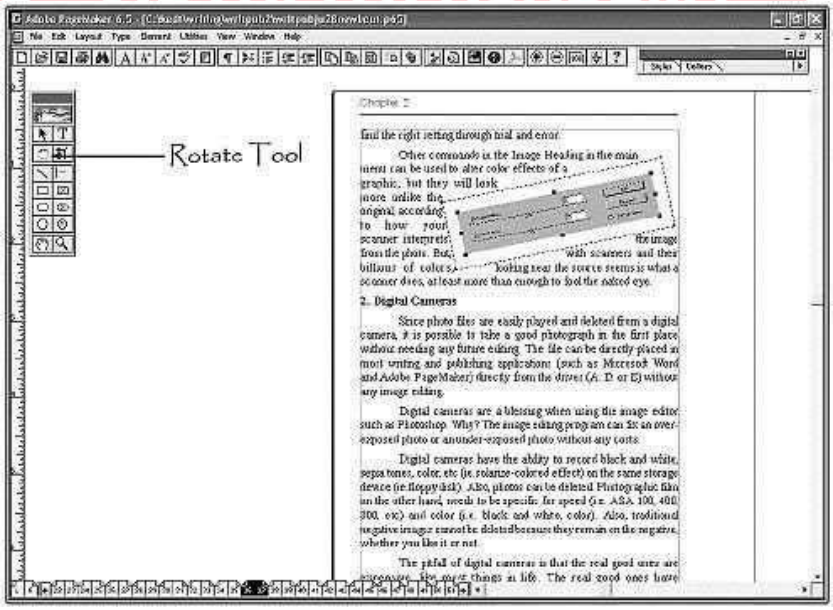
The pointer tool is the power tool. It is used for many applications such as moving graphics, changing size of graphics, deleting graphics, altering drawing sizes and shapesmadefromthedrawingtoolsintheToolboxandmovingtexttoanewpage.

RotateTool

Therotationtoolisusedtorotateagraphicortext.Torotateagraphic,Clickonagraphic, Click on the rotation tool

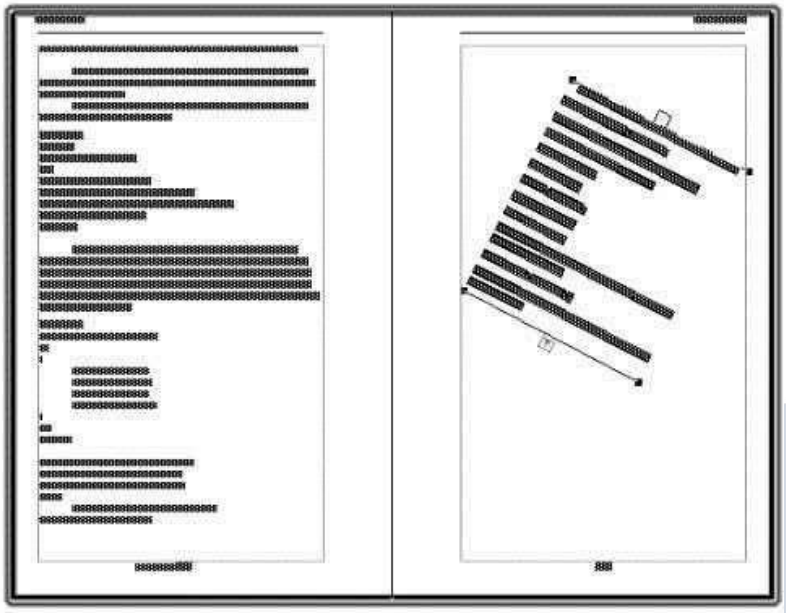


Rotatethegraphic



Torotate text,

Click in the document until the lines with the handles show up. Move the handle over thedesiredtext.Gotothetoolboxandclickontherotatetool.Withamouse,movethe text how you want it presented



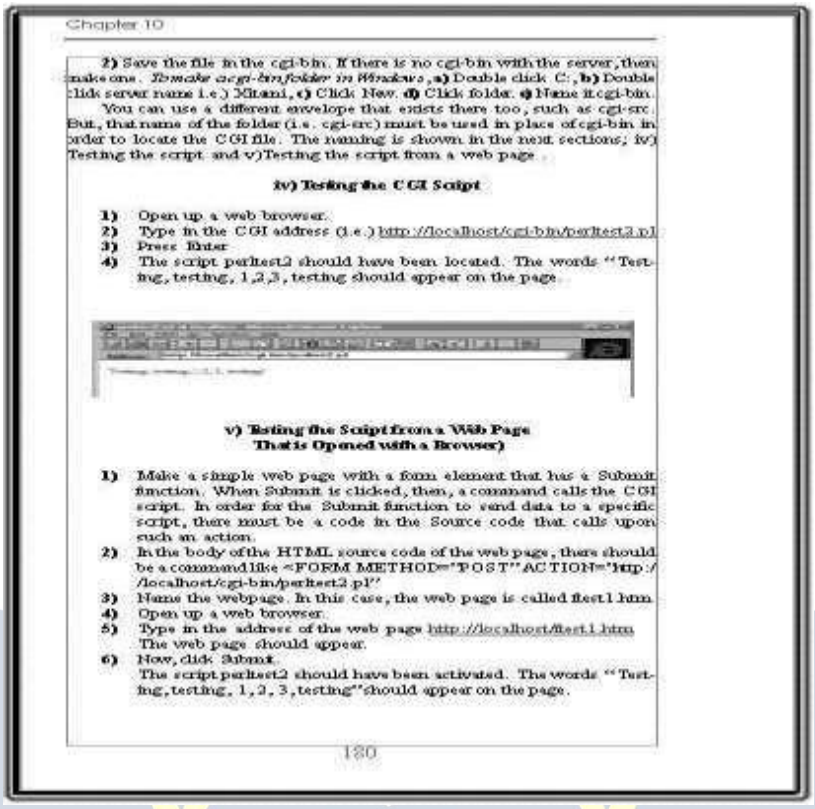
CroppingTool

TheCroppingToolisusedtocutoutsomeofagraphic.

Tocrop agraphic,

Clickingonagraphicwiththepointertoolorcroppingtool.Clickthecroppingtooltoactivate it.

Dragoneofthecornersorsideblackboxesuntilthesectionyouwanttocutoutgetscut out.



Chapter 10

2) Save the file in the cgi-bin. If there is no cgi-bin with the server, then make one. *To make cgi-bin folder in Windows*, a) Double click C:, b) Double click server name i.e.) Mitami, c) Click New. d) Click folder. e) Name it cgi-bin.
You can use a different envelope that exists there too, such as cgi-src. But, that name of the folder (i.e. cgi-src) must be used in place of cgi-bin in order to locate the CGI file. The naming is shown in the next sections; iv) Testing the script and v)Testing the script from a web page.

iv) Testing the CGI Script

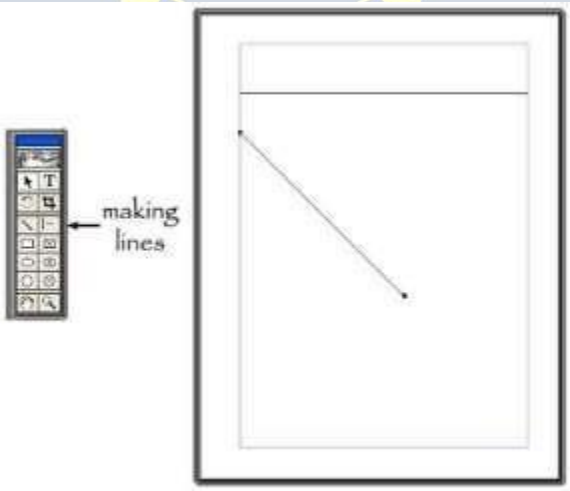
1) Open up a web browser.
2) Type in the CGI address (i.e.) http://localhost/cgi-bin/perltest3.pl
3) Press Enter
4) The script perltest2 should have been located. The words "Testing, testing, 1,2,3, testing should appear on the page.

v) Testing the Script from a Web Page That is Opened with a Browser)

1) Make a simple web page with a form element that has a Submit function. When Submit is clicked, then, a command calls the CGI script. In order for the Submit function to send data to a specific script, there must be a code in the Source code that calls upon such an action.
2) In the body of the HTML source code of the web page, there should be a command like <FORM METHOD="POST" ACTION="http://localhost/cgi-bin/perltest2.pl"
3) Name the webpage. In this case, the web page is called ftest1.htm.
4) Open up a web browser.
5) Type in the address of the web page http://localhost/ftest1.htm
The web page should appear.
6) Now, click Submit.
The script perltest2 should have been activated. The words "Testing, testing, 1, 2, 3, testing" should appear on the page.

130

Thenexttwotoolsareusedtomakelines.

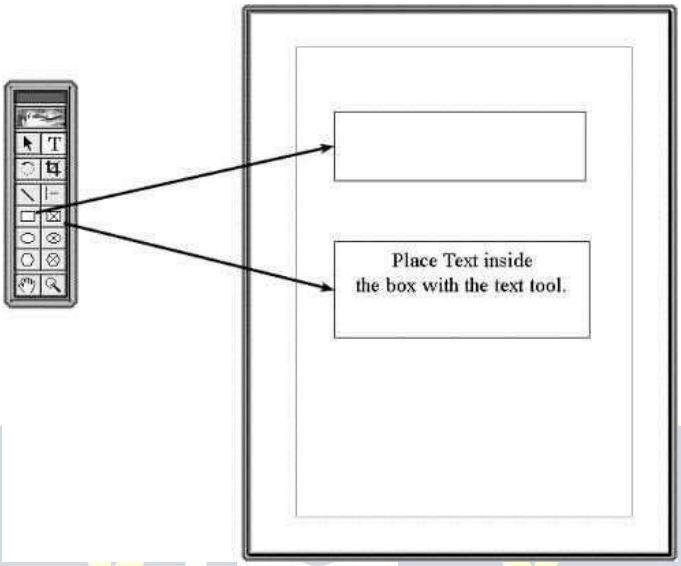


RectangularTools

Thenexttwocommandsaretherectangletoolandtherectangletoolwithan Xinsideof the rectangle. The box on the left is made for rectangles. Any line thickness and color can be customized. The rectangle on the right-hand side, works well for placing graphics and aligned text inside of the rectangle or square.

Tochangethepatterninsidetherectangle,

Rightclickontherectanglewiththepolygontoolorthepointertool.Clickfillandstroke.Make choices

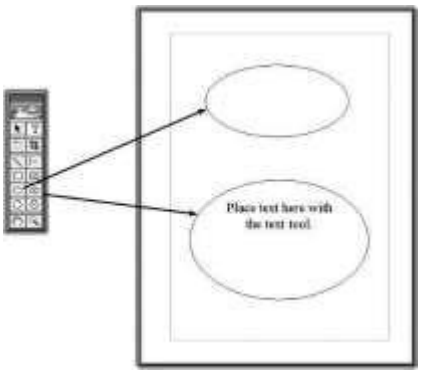


Elliptical Tools

Thenexttwotools(9-10)dothesamethingastherectangulartoolswiththeonlydifference being the circular.6.11.

Theboxontheleftismadeforellipticaldesign.Anylinethicknessandcolorcanbe customized. The ellipse on the right-hand side is used is used to make ellipses for which graphics and aligned text can be inserted inside of the circle.

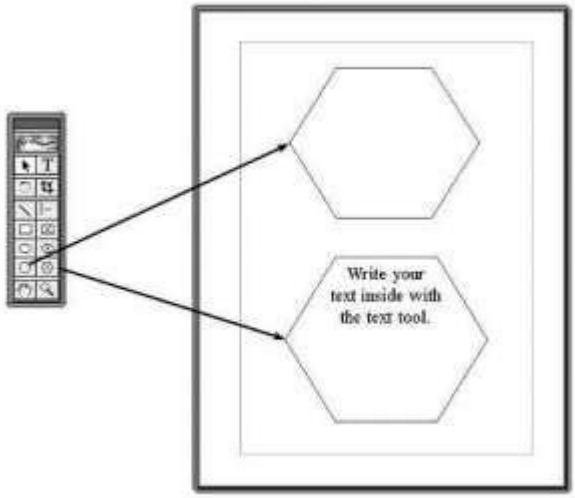
Tochangethepatterninsidetheellipse,Rightclickontheellipsewiththepolygontoolor the pointer tool.Click fill and stroke. Make choices



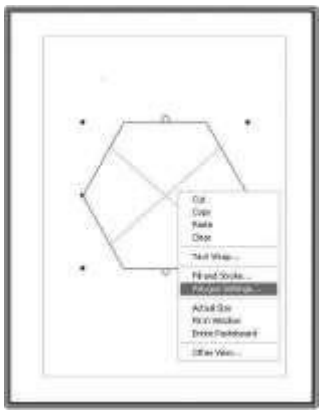
PolygonTools

Thenexttwotoolsmakepolygonshapes.
The box on the left is made for a polygon design. Any line thickness and color can be customized. The polygon on the right-hand side is used is used to make polygons for whichgraphicsandalignedtextcanbeinsertedinsideofthecircle.Todrawapolygon,

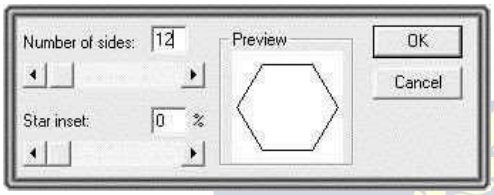
- Click apolygontool
- Leftclickthemouseanddragthemouseuntilyougetthesizeanddesiredshape.
- Tochangethepatterninsidethepolygon,
- Rightclickonthepolygonwiththepolygontoolorthepointertool.
- Clickfillandstroke
- Makechoices



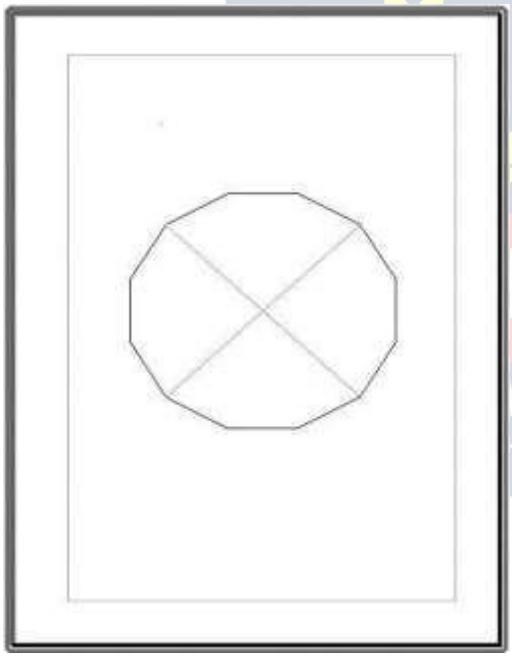
Tomakeapolygonwithadifferentnumberofsides,Clicktherightpolygontool,Click Polygon Settings



Putin aspecificnumber



ClickOK



To make a unique shape,

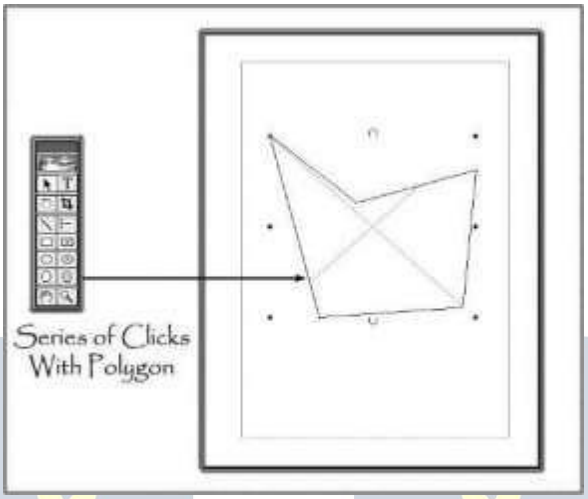
Clicktherightpolygontool

Makea singleclickonthepage

Movethemousetoanewplace Click

the mouse

Repeatforallnewlines



HandTool

Thehandtoolisusedinlayoutmodetomovethepagestoadesiredposition.

Tomoveapage,
Leftclickthemouseonapageanddragthepageswhereyouwantthem.

Magnifyingtool

Themagnifyingglassisusedtomagnifythedocument.Tomagnifythepage,Clickthe magnifying tool. Click the page.

CorelDraw

CorelDraw (styled CorelDRAW) is a vector graphics editor developed and marketed by CorelCorporationofOttawa,Canada.ItisalsothenameofCorel'sGraphicsSuite,which bundles CorelDraw with a bitmap image editor, Corel PhotoPaint, and other graphics- related programs (see below). The latest version is designated X6 (equivalent to version 16), and was released in March 2012.

Supportedplatforms

CorelDraw was originally developed for Microsoft Windows 3 and currently runs on Windows XP, Windows Vista, and Windows 7. The current version, X6, was released on 20 March 2012.

Versions for Mac OS and Mac OS X were at one time available, but due to poor sales thesewerediscontinued.ThelastportforLinuxwasversion9(releasedin2000,itdidnot runnatively;instead,itusedamodifiedversionofWinetorun)andthelastversionforOS X was version 11 (released in 2001). Also, up until version 5, CorelDraw was developed for Windows 3.1 xs, CTOS and OS/2.

Characteristicfeatures

Severalinnovationstovector-basedillustrationoriginatedwithCorelDraw:anode-edittool that operates differently on different objects, fit text-to-path, stroke-before-fill, quick fill/strokecolorselectionpalettes,perspectiveprojections,meshfillsandcomplexgradient fills.

CorelDrawdifferentiatesitselffromitscompetitorsinanumberofways:

Thefirstisitspositioningasagraphicssuite,ratherthanjustavectorgraphicsprogram. A full range of editing tools allow the user to adjust contrast, color balance, change the format from RGB to CMYK, add special effects such as vignettes and special borders to bitmaps. Bitmaps can also be edited more extensively using Corel PhotoPaint, opening thebitmapdirectlyfromCorelDrawandreturningtotheprogramaftersaving.Italsoallows a laser to cut out any drawings.

CorelDraw is capable of handling multiple pages along with multiple master layers. Multipage documents are easy to create and edit and the Corel print engine allows for booklet and other imposition so even simple printers can be used for producing finished documents. Oneof theusefulfeaturesfor single andmulti-page documents istheability to create linked text boxes across documents that can be resized and moved while the textitselfresetsandflowsthroughtheboxes.Usefulforcreatingandeditingmulti-article newsletters etc.

Smalleritems,likebusinesscards,invitationsetc.,canbedesignedtotheirfinalpagesize andimposedtotheprinter'ssheetsizeforcost-effectiveprinting.Anadditionalprint-merge feature(usingaspreadsheetortextmergefile)allowsfullpersonalizationformanythings like numbered raffle tickets, individual invitations, membership cards and more.

CorelDraw's competitors include Adobe Illustrator and Xara Photo & Graphic Designer. Although all of these are vector-based illustration programs, the user experience differs greatlybetweenthem.Whilethesepro grams willreadtheirnativefiletypesandviceversa, thetranslationisrarelyperfect.CorelDrawcanopenAdobePDFfiles:AdobePageMaker, MicrosoftPublisherandWord,andotherprogramscanprintdocumentstoPDFusingthe AdobePDFWriterprinterdriver,whichCorelDrawcanthenopenandediteveryaspectof the original layout and design. CorelDRAW can also open PowerPoint presentations and other Microsoft Office formats with little or noproblem.

CorelDrawGraphicsSuite

Over time, additional components were developed or acquired and bundled with CorelDraw. The list of bundled packages usually changes somewhat from one release to thenext,thoughthereareseveralmainstaysthathaveremainedinthepackageformany releases now, including Power Trace (abitmap to vector graphic converter), Photo-Paint (a bitmap graphic editor), and Capture (a screen capture utility).

ThecurrentversionofCorelDrawGraphicsSuiteX6(version16),containsthefollowingpackages:

- CorelDrawX6,anintuitivevector-illustrationandpage-layoutapplication
- Corel Photo-PaintX6,animage-editingapplication
- CorelPowerTraceX6,autilitytoconvertbitmapsintoeditablevectorgraphics
- CorelConnect,afull-screenbrowsertosearch thesuite’sdigitalcontent

- CorelCaptureX6,ascreencaptureutility
- CorelWebsiteCreatorX6,newwebsitecreationsoftware

CDRFile Format

CDR file format is a proprietary file format developed by Corel Corporation and primarily used for vector graphic drawings. There is no publicly available CDR file format specification.

Other CorelDraw file formats include CorelDraw Compressed (CDX), CorelDraw Template (CDT) and Corel Presentation Exchange (CMX).

In December 2006 the sK1 open source project team started to reverse-engineer the CDRformat.TheresultsandthefirstworkingsnapshotoftheCDRimporterwere presentedattheLibreGraphicsMeeting2007conferencetakingplaceinMay2007in Montreal(Canada).Laterontheteamparsedthestructureofotherformatswith thehelpof theopensource CDR Explorer.Asof 2008,thesK1project claimstohave the best import support for CorelDraw file formats among open source software programs.ThesK1projectdevelopedalsotheUniConvertor,acommandlineopen source tool which supports conversion from CorelDraw ver.7-X4 formats (CDR/CDT/CCX/CDRX/CMX) to other formats. UniConvertor is also used in Inkscape and Scribusopen source projects as an external tool for CorelDraw files importing.

In2007,MicrosoftblockedCDRfileformatinMicrosoftOffice2003withthereleaseof ServicePack3forOffice2003.Microsoftlaterapologizedforinaccuratelyblamingthe CDR file format and other formats for security problems in Microsoft Office and released some tools for solving this problem.

In2012thejointLibreOffice/re-labteamimplementedlibcdr,alibraryforreadingCDR filesfromv1tothecurrentlylatestX6versionandCMXfiles.Thelibraryhasextensive support for shapes and their properties, including support for color management and spot colors, and has a basic supportfor text. The libraryprovides a built-in converter toSVG,andaconvertertoOpenDocumentisprovidedbywriterperfectpackage.The libcdrlibraryisexpected to beused inLibreOffice3.6,and thankstopublicAPIitcan be freely used by other applications.

CorelDrawTools:

	**Picktool**-Select,position,ortransformobjects.
	**Freehand Pick tool** -Selectobjectsbyusingafreehandselectionmarquee. Position and transform objects.

	**Shapetool(F10)**-Editacurveobjectortextcharacterbymanipulatingnodes.
	**Smudge Brush tool** -Changetheshapeofanobjectbydraggingalongits outline.
	**RoughenBrushtool**-Distorttheedgeofanobjectbydraggingalongitsoutline.
	**FreeTransformtool**-Rotate,skew,mirror,andscaleobjects.
	**Smear tool**-Changetheedgeofanobjectbydraggingalongitsoutline.
	**Twirltool**-Addswirleffectsbydraggingalongtheoutlineofanobject.
	**Attracttool**-Reshapeobjectsbyattractingnodestothecursor.
	**Repeltool**-Reshapeobjectsbypushingnodesawayfromthecursor.
	**Smoothtool** -Smoothobjectbydraggingalongitsoutline.
	**Croptool**-Removetheareasoutsideaselection.
	**Knifetool**-Sliceanobjecttosplititintotwoseparateobjects.
	**Erasertool(X)**-Removeunwantedareasinadrawing.
	**VirtualSegmentDeletetool**-Removeoverlappingsegmentsinobjects.
	**Zoomtool(Z)**-Changethemagnificationlevelofthedocumentwindow.
	**Pantool(H)**-Draghiddenareasofadrawingintoviewwithoutchangingthe zoom level.
	**Freehandtool(F5)** -Drawcurvesandstraightlinesegments.

	**2-PointLinetool**-Drawastraightlinebydrawingfromthestartingpointtothe endpoint.
	**Beziertool**-Drawcurvesonesegmentatatime.
	**ArtisticMediatool(I)**-Addartisticbrush,spray,andcalligraphiceffectsbyusing

	freehandstrokes.
	**Pentool**-Drawcurvesinsegments,andprevieweachsegmentasyoudraw.
	**B-Spline tool** -Drawcurvedlinesbysettingcontrolpointsthatshapethecurve without breaking it into segments.
	**Polylinetool**-Drawconnectedcurvesandstraightlinesinonecontinuousaction.
	**3-PointCurvetool**-Drawacurvebydraggingfromthestartingpointtothe endpoint and then positioning the center point.
	**Smart Filltool** -Createobjectsfromoverlappingareas,andapplyafilltothose objects.
	**Smart Drawing tool (Shift+S)** -Convertfreehandstrokestobasicshapesor smoothed curves.
	**Rectangle tool (F6)** -Drawsquaresandrectanglesbydragginginthedrawing window.
	**3-Point Rectangletool**-Drawrectanglesatanangle.
	**Elipsetool(F7)**-Drawcirclesandelipsesbydragginginthedrawingwindow.
	**3-PointElipsetool**-Drawselipsesatanangle.
	**Polygontool(Y)**-Drawpolygonsbydraggiginthedrawingwindow.
	**Startool**-Drawuniform,outlinedstars.
	**ComplexStartool**-Drawstarsthathaveintersectingsides.
	**GraphPaper tool (D)**-Drawagrid.
	**Spiraltool(A)**-Drawsymmetricalandlogarithmicspirals.

	**BasicShapes tool**-Drawtriangles,circles,cylinders,heartsandothershapes.
	**ArrowShapestool**-Drawarrowsofvariousshapesanddirections.
	**FlowchartShapestool-**Drawflowchartsymbols.
	**Banner Shapestool**-Drawribbonobjectsandexplosionshapes.
	**CalloutShapestool**-Drawlabelsandspeech bubbles.
	**Texttool(F8)**-Addandeditparagraphandartistictext.
	**Tabletool**-Draw,select,andedittables.
	**Parallel Dimension tool**-Drawslanteddimensionlines.
	**HorizontalorVerticalDimensiontool** -Drawhorizontalorverticaldimension lines.
	**Angular Dimension tool**-Drawangulardimensionlines.
	**SegmentDimensiontool**-Displaythedistancebetweenendnodesonsingle or multiplesegments.
	**3-PointCallouttool**-Drawacalloutwithatwo-segmentleadingline.
	**Straight-LineConnectortool**-Drawastraightlinetoconnecttwoobjects.
	**Right-AngleConnectortool**-Drawarightangletoconnecttwoobjects.
	**Right-AngleRoundConnectortool**-Drawarightanglewitharoundedcornerto connecttwoobjects.
	**EditAnchortool**-Modifytheconnectorlineanchorpointsofobjects.

	**Blendtool**-Blendobjectsbycreatingaprogressionofintermediateobjectsand colors.
	**Contour tool** -Applyaseriesofconcentricshapesthatradiateintooroutofan object.
	**Distorttool**-TransformobjectsbyapplyingPushandPull,Zipper,orTwister effects.
	**DropShadowtool**-Applyshadowsbehindorbelowobjects
	**Envelope tool**-Changetheshapeofanobjectbyapplyinganddraggingthe nodesofanenvelope.
	**Extrudetool**-Apply3Deffecttoobjectstocreatetheillusionofdepth.
	**Transparencytool**-Partiallyrevealimageareasunderneaththeobject.
	**ColorEyedroppertool**-Samplecolors,andapplythemtoobjects
	**OutlinePen(F12)**-Setoutlinepropertiessucjaslinethickness,cornershape, andarrowtype.
	**OutlineColor(Shift+F12)**-Choosetheoutlinecolorbyusingcolorviewersand colorpalettes.
	**UniformFill(Shift+F11)**-Chooseasolidfillcolorforanobjectbyusingcolor palettes,colorviewers,colorharmonies,orcolorblends.
	**FountainFill(F11)**-Fillanobjectwithagradientofcolorsorshades.
	**PatternFill**-Applyapresetpatternfilltoanobjectorcreateacustompatternfill.
	**TextureFill**-Applypresettexturefillstoobjectstocreatetheillusionofavariety of textures, such as water, clouds and stone.

	**PostScriptFill**-ApplyanintricatePostScripttexturefilltoanobject.
	**Interactive Filltool(G)**-Createafilldynamicallybyusingmarkersinthedrawing windowandpropertybartochangetheangle,midpoint,andcolor.
	**MeshFilltool(M)**-Fillanobjectbyblendingmultiplecolorsorshadesarranged overameshgrid.

ADOBEPHOTOSHOP:

Adobe Photoshop is a graphics editing program developed and published by Adobe Systems.

Adobe's2003"CreativeSuite"rebrandingledtoAdobePhotoshop8'srenamingtoAdobe Photoshop CS. Thus, Adobe Photoshop CS6 is the 13th major release of Adobe Photoshop. The CS rebranding also resulted in Adobe offering numerous software packages containing multiple Adobe programs for a reduced price. Adobe Photoshop is released in two editions: Adobe Photoshop, and Adobe Photoshop Extended, with the Extendedhavingextra3Dimagecreation,motiongraphicsediting,andadvancedimage analysisfeatures.AdobePhotoshopExtendedisincludedinallofAdobe'sCreativeSuite offerings except Design Standard, which includes the Adobe Photoshop edition.

Alongside Photoshop and Photoshop Extended, Adobe also publishes Photoshop Elements and Photoshop Lightroom, collectively called "The Adobe Photoshop Family". In2008,AdobereleasedAdobePhotoshopExpress,afreeweb-basedimageeditingtool to edit photos directly on blogs and social networking sites; in 2011 a version was released for the Android operating system and the cooperating system.

FileFormat

Photoshop files have default file extension as .PSD, which stands for "Photoshop Document."APSDfilestoresanimagewith supportformostimagingoptionsavailable in Photoshop. These include layers with masks,transparency, text,alphachannelsandspotcolors,clippingpaths,andduotonesettings.Thisis incontrasttomanyotherfileformats(e.g..JPGor.GIF)thatrestrictcontenttoprovide streamlined, predictable functionality. A PSD file has a maximum height and width of 30,000 pixels, and a length limit of 3 Gigabytes.

Photoshop files sometimes have the file extension .PSB, which stands for "Photoshop Big" (also known as "large document format"). A PSB file extends the PSD file format, increasingthemaximumheightandwidthto300,000pixelsandthelengthlimittoaround 4 Exabytes. The dimension limit was apparently chosen arbitrarily by Adobe, not based oncomputerarithmeticconstraints(itisnotclosetoapoweroftwo,asis30,000)butfor ease of software testing. PSD and PSB formats are documented.

Because of Photoshop's popularity, PSD files are widely used and supported to some extent by most competing software. The .PSD file format can be exported to and from Adobe'sotherappslikeAdobeIllustrator,AdobePremierePro,andAfterEffects,tomake professional standard DVDs and provide non-linear editing and special effects services, such as backgrounds, textures, and so on, for television, film, and the web.

Photoshop'sprimarystrengthisasapixel-basedimageeditor,unlikevectorbasedimage editors. Photoshop also enables vector graphics editing through its Paths, Pen tools, Shape tools, Shape Layers, Type tools, Import command, and Smart Object functions. These tools and commands are convenient to combine pixel-based and vector-based images inone Photoshopdocument,becauseitmaynotbenecessaryto usemorethan oneprogram.Tocreateverycomplexvectorgraphicswithnumerousshapesandcolors, it may be easier to use software that was created primarily for that purpose, such as Adobe Illustrator or CorelDRAW. Photoshop's non-destructive Smart Objects can also import complex vector shapes.

LanguageAvailabilities

Photoshopisavailableinmorethan20languages.Thesearethefollowing:

Chinese Simplified, Chinese Traditional, Czech, Danish, Dutch, English, Finnish, French, German, Hungarian, Italian, Japanese, Korean, Norwegian, Polish, Portuguese, Romanian, Russian, Spanish, Swedish, Turkish and Ukrainian. Also Arabic and Hebrew as of Photoshop CS6.

Plugins

Photoshop functionality can be extended by add-on programs called Photoshop plugin (or plug-ins). Adobe creates some plug-in, such as Adobe Camera Raw, but thirdparty companiesdevelopmostplug-in,accordingtoAdobe'sspecifications.Somearefreeand some are commercial software. Most plug-in work with only Photoshop or Photoshop-compatible hosts, but a few can also be run as standalone applications.

There are various types of plug-in, such as filter, export, import, selection, color correction,andautomation.Themostpopularplug-inarethefilterplug-in(alsoknownas a 8bf plug-in), available under the Filter menu in Photoshop. Filter plug-in can either modifythecurrentimageorcreatecontent.Belowaresomepopulartypesofplug-in,and some well-known companies associated with them:

- Colorcorrectionplug-in
- Special effectsplug-in
- 3Deffectsplug-in

Adobe Camera Raw (also known as ACR and Camera Raw) is a special plugin, supplied free by Adobe, used primarily to read and process raw image files so that the resultant images can be processed by Photoshop. It can also be used from within Adobe Bridge.

Tools

Upon loading Photoshop, a sidebar with a variety of tools with multiple image-editing functionsappearstotheleftofthescreen.Thesetoolstypicallyfallunderthecategories ofdrawing;painting;measuringandnavigation;selection;typing;andretouching.Some toolscontainasmalltriangleinthebottomrightofthetoolboxicon.Thesecanbe

expanded to reveal similar tools. While newer versions of Photoshop are updated to include new tools and features, several recurring tools that exist in most versions are discussed below.

Pen Tool

Photoshop includes a few versions of the pen tool. The pen tool creates precise paths that can be manipulated using anchor points. The freeform pen tool allows the user to drawpathsfreehand,andwiththemagneticpentool,thedrawnpathattachescloselyto outlinesof objectsin an image,which is usefulfor isolating them from a background.

Measuring and navigation

The eyedropper tool selects a **color** from an area of the image that is clicked, and samplesitforfutureuse.Thehandtoolnavigatesanimagebymovingitinanydirection, and the zoom tool enlarges the part of an image that is clicked on, allowing for a closer view.

Selection

Byusingpathselectiontool,wecanselectpathnodes.

Cropping

Thecroptoolcanbeusedtoselectaparticulararеaofanimageanddiscardtheportions outsideofthechosensection.Thistoolassistsincreatingafocuspointonanimageand excluding unnecessary or excess space. Cropping allows enhancement of a photo's compositionwhiledecreasingthefilesize.The"crop"toolisinthetoolspalette,whichis located on the right side of the document.

Slicing

The"slice"andsliceselecttools,likethecroptool,areusedinisolatingpartsofimages. Theslicetoolcanbeusedtodivideanimageintodifferentsections,andtheseseparate parts canbeusedaspiecesof aweb page design onceHTMLand CSSareapplied.The slice select tool allows sliced sections of an image to be adjusted and shifted.

Moving

Onceanareaofanimageishighlighted,themovetoolcanbeusedtomanuallyrelocate the selected piece to anywhere on the canvas.

Marquee

The marquee tool can make selections that are single row, single column, rectangular andelliptical. Anareathat has been selectedcan be edited withoutaffectingthe restof theimage.Thistoolcanalsocropanimage;itallowsforbettercontrol.Incontrasttothe crop tool, the "marquee" tool allows for more adjustments to the selected area before cropping. The only marquee tool that does not allow cropping is the elliptical.

Lasso

The lasso tool is similar to the "marquee" tool, however, the user can make a custom selection by drawing it freehand. There are three options for the "lasso" tool – regular, polygonal, and magnetic. The regular "lasso" tool allows the user to have drawing capabilities. Photoshop will complete the selection once the mouse button is released. The user may also complete the selection by connecting the end point to the starting point. The "marching ants" will indicate if a selection has been made. The "polygonal lasso" tool will only draw straight lines, which makes it an ideal choice for images with manystraightlines.Unliketheregular"lasso"tool,theusermustcontinuallyclickaround theimagetooutlinetheshape.Tocompletetheselection,theusermustconnecttheend point to the starting point just like the regular lasso tool. "Magnetic lasso" tool is considered the smart tool.

Quick Selection

The quick selection tool selects areas based on edges, similarly to the magnetic lasso tool. The difference between this tool and the lasso tool is that there is no starting and endingpoint.Sincethereisn'tastartingandendingpoint,theselectedareacanbeadded on to as much as possible without starting over.

Magic Wand

The magic wand tool selects areas based on pixels. The user only needs to click once, andthistoolwilldetectpixelsthatareverysimilartoeachother.Iftheeyedroppertool is selected in the options bar, then the magic wand can determine the value needed to evaluate the pixels; this is based on the sample size setting in the eyedropper tool. Whentheimagerequiresmorethanafewclicks,thistoolbecomesadisadvantage.The usermustdecidewhat settingstouseorif the image isrightforthistool.

Eraser

The eraser tool does exactly what it's called.It erases an image based on the layer it is on. If the user is on the text layer, then any text that the tool is dragged across will be erased.Theerasedareawillconvertthepixelstotransparent,unlessitisthebackground layer. The size and style of the eraser can be selected in the options bar. This tool is unique in thatit can take the form of the paintbrush and pencil tools. In addition to the straighterasertool,therearetwomoreavailableoptions–backgrounderaserandmagic eraser.

Typing

Photoshopalsoprovides toolsfor addingandeditingtext.The typetools createanarea wheretextcanbeentered,andthetypemasktools createaselectionareathathasthe shape of text. Thetype tool creates vector-basedtext, sosymbols,lettersand numbers in various fonts and colors can be re-sized while maintaining the same quality.

Retouching

Therearesevеraltoolsthatareusedforretouching,manipulatingandadjustingphotos, such as the clone stamp, eraser, burn, dodge, smudge and blur tools. The clone stamp toolsamplesaselected portionof an image,andduplicatesitoveranotherareausinga brush that can be adjusted in size, flow and opacity. The smudge tool, when dragged across part of an image, stretches and smudges pixels as if they are real paint, and the blurtoolsoftensportionsofanimagebyloweringtheamountofdetailwithintheadjusted area.

Content-aware

Content-awareness is a useful aspect of Photoshop where image editing is done automaticallyandintelligently.Itcomesintwoforms,content-awarescaling,andcontent- aware filling, in which elements in a background automatically recompose according to the areas a userof theprogram decides tofillorscale. More specifically, content-aware scaling works by rescaling an image and causing its content to adapt to the new dimensions and preserving important areas of it. Content-aware filling functions by matchingtone,color,andnoiseofanareaoftheimagethatcontainedanobjectordetail in which the user decides to remove.

Healingtools

With improvement retouching tools like the Clone Stamp tool and Healing Brush tool, imperfections of an image can easily be removed. These tools essentially function by locatingasourcepoint(ormultiplesourcepoints)thatcanbescaledorrotatedinorder to cover an imperfection or unwanted detail in a specific area of an image.

Puppetwrap

Similar to the content-aware tool, the puppet warp toolreveals Photoshop's intelligence by allowing a user to reposition an object in an image such as a flower or arm. This is donebyusingpointsthatoutlinethestructureofanobjectandeasilyrepositioninginthe wanted orientation.

Video Editing

InAdobeCS5Extendededition,videoeditingiscomprehensiveandefficientwithabroad compatibilityof videofileformatssuchasMOV, AVI, MPEG-4,and FLVformatsandeasy workflow. Using simple combination of keys video layers can easily be modified, with other features such as adding text and the creation of animations using single images.

3D

With the Extended version of Photoshop CS5, 2D elements of an artwork can easily become three-dimensional with the click of a button. Extrusions of texts, an available library of materials for three-dimensional and even wrapping two-dimensional images around3Dgeometryareallpossiblewiththisversionof Photoshop.Realismcanalsobe added to an image using the 3D features of Photoshop such as animating imagebased lights and depth of field.

Mobile integration

Third-partyplug-in hasalso been added tothe most recent version of Photoshop where technologies such as the iPad have integrated the software with different types of applications. Applications like the Adobe Easel painting app allows the user to easily createpaintingswiththeirfingertipsanduseanarrayofdifferentpaintfromdrytowetin order to create rich color blending.

CameraRaw

With the CameraRaw plug-in, RAW images can be processed without the use of Adobe Photoshop Light room, along with other image file formats such asJPEGs, TIFFs, or PNGs. The plug-in allows users to remove noise without the side-effect of oversharpening, add grain, and even perform post-crop vignetting.

HTML/DHTML,DREAMWEAVERWeb ScriptLanguageHTML

IntroductiontoHTML

HTML (Hypertext Markup Language)isusedtocreatedocumentontheWorldWide →eb.Itissimplyacollectionofcertainkeywords called'Tags'thatarehelpfulinwriting thedocumenttobedisplayedusingabrowseronInternet.Itisaplatformindependent language that can be used on any platform such asWindows, Linux, Macintosh, and so on. To display a document in web it is essential to mark-up the different elements (headings,paragraphs,tables,andsoon)ofthedocumentwiththeHTMLtags.Toview

a mark-up document, user has to open the document in a browser. A browser understands and interpret the HTML tags, identifies the structure of the document (whichpartarewhich)andmakesdecisionaboutpresentation(howthepartslook)of the document.HTML also provides tags to make the document look attractive using graphics, font size and colors. User can make a link to the other document or the different section of the same document by creating Hypertext Links also known as Hyperlinks.

WEBDESIGNING

Website: CollectionofWebpagesand**Webpages**is madebyHTMLTags.

Internet:24HourspresenceonInternetwithWorldWideReach.

Web designing: Static Site: WithoutDatabase|Photoshop(WebTemplates/ Homepage)

HTML|DHTML Dreamweaver|FlashAnimation|Css&DivTag.

Web development: Dynamic Site: Database Site | Java Script |ASP.NET | PHP | Ms-Access | MySQL | Sql Server

Requirement forWebsite: DomainName|Hosting(ServerSpace)|Website

HTML - Hyper Text Markup Language The language used to develop web pages is called HTML. HTML is the language interpreted by a Browser. Webpage are also called html documents. HTML is a set of special codes. HTML is specified on TAGS.

Forcreation ofHTML fileswerequired Two ways:

Editor: ForwritingpurposeormakingHTMLfilesNotePadisbesteditoritis support coding language.

Browser: For output display there are of two type of browsers Internet Explorer and Netscape Navigator.

ThecontentsofHTMLpagearewritteninTags/Attributes.

HTMLTags: Tagsareinstructionsthatoneembeddeddirectlyintothetextofthe document.An HTML tagis a signal toa browser thatit shoulddo somethingother than justthrowtextuponthescreen.ByconnectionallHTMLtagsbeginwithanopenangle bracket(<)andendwithaClosesangleBracket(>) **HTML** tagscanbeof twotypes:

Paired Tags: A tag is said to be paired tag if it, along with a companion tag, close the text.

Singular Tag: The second type of tag is the singular or stand-alone tag. It does not have a companion tag.

Tag Attributes & Value: AdditionalinformationsuppliedtoanHTMLtagis knownasAttributesofatag.Attributesarewrittenimmediatelyfollowingthetag, separated by a space. **Like:**

<HRSize=5Color="Red"Width=70%Align="Right">

HereHR = Tag

Size, Color, Width, Align = Attributes

5, Red, 70%, Right= Values

Basicstructure ofHTMLDocument:

Every**HTML**programhasarigidstructure.

<HTML> StartTag|OpeningScript

<HEAD> Informationplacedinthissectionisessentialtotheinnerworkingof Documentandhasnothingtodowiththecontentofthedocument.

<TITLE> Explanationofpagepurpose,DisplayinTitleBarof I.E.

</TITLE> ClosingTag

</HEAD> ClosingTag

<BODY> Information and Links / Secondary Links / Footers means any type of Text or Graphics for Page.

</BODY> ClosingTag

</HTML> ClosingTag|Closing Script

ParagraphBreaks: Ablanklinealwaysseparateparagraphsintextualmaterial.Thetag thatprovidesthisfunctionalityis<P>.<P>tagisusedtocreateanewparagraph.

Line Breaks: When text needs to start from a new line and not continue on the same line, the <BR> tag should be used.

Heading Style: HTMLsupportssixdifferentlevelsofheadings.Thehighest-levelheader format is

<H1>andthelowestlevelis<H6>.

AlignAttribute: Alignmentattributesareoftenusedwiththetext,image.

Align=Left/Center/Right<H1Align="Left">SoftBrain</H1>

DrawingLines: Thetag<HR>drawslinesandhorizontalrules.TheAttributestothe <HR>tagare:

<HRSize=5Color="Red"Width=70%Align="Right">

TextLevelElements: TextlevelElementschangestheappearancetofunctionoftext.

Bold: Boldelement<B>and</B>causestexttoappearinaboldtypeface.

<B>SoftBrain</B>

Italic: Italicelement<I>and</I>causesthetexttoappearinItalictypeface.

<I>SoftBrain</I>

Underline: Underline element <U> and </U> causes text to underline.

<U>

SoftBrain </U>

Strike: Strikeelementindicatesthattextenclosedin<S>and</S>willhave a line drawn in the middle of text.

<S>

~~SoftBrain~~</S>

Teletype: Teletypeelementchangesthefontlikeamonospacedtypewriterfont.

<TT>SoftBrain</TT>

Superscripts: Raisedonepointtextupperword15thAugustorSoftBrainTM. **15**

thAugust15th August

Subscript: TextRaiseddownonepointdownward.

H₂SO₄ H2SO4

ControllingFontSizeandColor: Alltextspecifiedwithinthetags<Font>and</Font> will appear in the font size and color as specified as attributes of the Tag **<Font>**The attributes:

Face=Setsthefonttobespecifiedfontname.

Size=Setsthesizeofthetext.Sizecantakevaluesbetween1to7.

Color =Setsthecolorofthetext.

<Fontface="Arial"size=4color="green">SoftBrainInformaticTechnology Pvt. Ltd. **</Font>**

Bgcolor Attributes: Specifiesbackgroundcolorusingcolorname.**<Body Bgcolor="RED">**

TextAttributes: Specifiesforegroundcolororthecolorofthetext.

<Body Text="Aqua">

UsingSpecialCharacters:

Non-breakingspace	** **	
Copyright Sign	**©**	**Copyright©**
RegisteredTrademark	**&Reg;**	**Softbrain®**
Trademark	**™**	**SoftbrainTM**

LIST STYLE

Listsarethebestmethodoforganizinginformationandpresentingitinastructure fashion basically there are three kinds of lists. They are:

OrderedList(Numbering): Anorderedliststartwiththetag
andendswith. EachListItem<Li>startwithtag<Li>.Iftag<Li>isnotpresentatthebeginning,thelisted items appear on the same line. **Using Attributes: Type Attribute** **type="1"** will give Counting numbers (1,2.....) **type="A"** will give Uppercase letters (A,B.....)

type="a" will give Lowercase letters (alb.....) **type="I"** will give Uppercase Roman numerals.(I,II,III.....) **type="i"** will give Lowercase Roman numerals.(ixia.....)

StartAttribute: Thestartattributeallowsyoutospecifythebeginningofthelist's numbers. (Start="1")

UnorderedList(Bullet): Weusethetag<UL>and</UL>forunorderedList.

Attributes of Unordered List type="circle" type="square" type="disc"

Definitionlist: Thedefinitionlistusesthe<DL>starttagandthe</DL>endtagtocreate a definition list. Definition list consists of two parts.

Definition term=Appears after the Tag <DT>

Definitiondescription=AppearaftertheTag<DD>

Result In Internet Explorer: KEYBOARD

ANINPUT DEVICE

ADDITONOFGRAPHICS/IMAGESINHTMLDOCUMENTS

Otherthantext,HTMLallowsplacingofstaticandanimatedimagesinanHTML page.

The commonly used image file types are GIF (Graphic Interchange Format) JPEG (Joint Photographic Experts Group) also called as JPG. To add an image in HTML document, youjustneedtoincludethe<IMG>tagwithareferencetothedesiredimage.The <IMG>(image)tagisanemptyelement(i.e.itdoesn'trequireaclosingtag).

<IMGSRC="imagename.gif">

<IMGSRC="imagename.jpg">

Image Element Attributes:

Align Attributes with Text: Align=Top / Middle / Bottom

E.g.:<Imgalign="middle"src="picture.gif">

AlignAttributeswithFloatingImage:Align=Left/ Right

Border:specifiesthesizeofthebordertoplacearoundtheimage.

Height: specifiestheheightoftheimage.

Width: specifiesthewidthoftheimage.

Hspace: indicates the amountof spaceto the left and right of the image.

Vspace: indicatestheamountofspacetothetopandbottomoftheimage. **Alt Attribute:** ALT attribute for the <IMG..... >tag allows for substitution of a descriptionstringoftexttoholdtheplaceoftheimage. **<Img Alt="Success IsAJourney"Src="Image.jpg"> Alt**

working for text

<ahref="filename.html"title="SuccessIsAJourney">linkcontent

CREATINGTABLES

Table present information in the form of rows and columns. To include a table in yourwebpagesyoufirstneedtocreatethetablestructureandforthatyouuseHTML's TableTags.

<TABLE>Thetable'sbeginningwitha<TABLE>tagandtheendwitha </TABLE>tag.

<TR>Thetablerowelement<TR>withanoptional</TR>endtagcreatesa horizontal row of cell.

<TH>Thetableheading<TH>withanoptional</TH>createsleadingcells.

<TD>Thetabledataelement<TD>tagswithanoptional</TD>endtag.

Table Attributes:<Align>Attribute: <TableAlign="Left"/"Center"/"Right">

<Border>Attribute: <Table Border=5>

BgcolorAttribute:<TableBgcolor="ColorNameOrColor Value">

<TrBgcolor="ColorName">

<TdBgcolor="ColorName">

<ThBgcolor="ColorName">

BackgroundAttribute: ThissetsanimageontheBackgroundoftable.

<TableBackground=”Computer.jpg”>

Caption: Thistagisoptionalanditcontainstable’sdescription.

<CaptionAlign=Top/Bottom/Left/Right>CaptionText</Caption>

Width & Height Attribute: <Table Width=”300” Height=”400”>

Cell spacing Attribute: You can use cellspacingattributeto controlthe spacing between each cell in the table.

<Table Cell spacing=”Number”>

CellpaddingAttribute:(Spaclinebetweencellcontentandcellborder)

<TableCellpadding=”Number”>

Rowspan Attribute: Therowspanattributeisusedinacelltomakethecell’s content merge with another cell in a row. **<Td Rowspan=”Number”> <Th Rowspan=”Number”>**

ColspanAttribute: Similar to ROWSPAN,COLSPAN attribute is used in a cell to make the cells content merge with another cell in a column.

<TdColspan=”Number”><ThColspan=”Number”>

LINKINGDOCUMENTS

LINKS:HTMLallowslinkingto other HTMLdocumentsas wellas images. ClickingonaSectionoftextoranimageinonewebpagewillopenanentirewebpage or an image. The text or an image that provides such linkages is called Hypertext, a Hyperlink or a Hotspot. Every Hyperlink.

1. Appears inbluecolor.
2. Thehyperlinktext/imageareunderlined.
3. When the mouse cursor is placed over it, the standard arrow mouse cursor changes to the shape of a hand.

Thebluecolor,whichappearsbydefault,canbeoverridden.Tochangethese linkcolorstherearethreeattributesthatcanbespecifiedwiththe<BODY>tag.These are:

Link: Changethedefaultcolorofahyperlinktowhatevercolorisspecifiedwiththistag.
Alink :(Active Link) Changes the default color of a hyperlink that is activated to whatever color is specified with this tag.

Vlink:(VisitLink) Changesthedefaultcolorofahyperlinkthatisalreadyvisitedto whatever color is specified with this tag.

TheAnchorTag: Anchorelementsareusedtolinkbetweentwoormultiple HTML documents."Anchor"tagstartswith<A>andenclosewith</A>.The<A>tagrequiresthe

HREFattributeand**(hyperlinkreference)**attributeacceptstheURLofthelinkedpage.

<AHREF="filename.html">content</A>

Everyhyperlinkhastwocomponents:Thesourceandthedestination.
<ahref="http.//www.yahoo.com/">OPENYAHOOSITE</A>

ImagesasHyperlink:JustastextcanactasaHyperlink,soalso imagescanactas hyperlinks.

<Ahref="abc.html"><img src="image.jpg"></A>

ExternalLink:linkswithotherhtmldocument.

InternalLink:linkinasamedocument.Theanchorelementisusedtocreateboth external and internal links.

NameAttribute:Named Anchor are used to create links to a specified section withindocument.

Thisisatwostepprocess: AtTopofpageafterBodyTag

<ANAME="LOCATION">

At bottom of page before Body Tag **<A HREF="#LOCATION">Content</A>**

MARQUEE

MarqueeTag: Forscrollingtextandimage.

<Marquee>---------- </Marquee>

MarqueeAttributes

<Marqueebehavior=”slide”></marquee>**Inthistextscrollsforonetimeonly.**

<Marqueebehavior=”alternate”></marquee>**Inthistextwillscrollcontinuouslyleft to right.**

<Marqueebehavior=”scroll”></marquee>**Inthistextwillscrollcontinuously.**

For direction of scrolling

<Marqueebehavior=”slide”direction=”right”/”up”/”down”>

Forbackground color/width/height

<Marqueebehavior=”slide”bgcolor=”red”direction=”right”width=”500”height=20>

Forspeedcontrollingin marquee

<Marquee scroll amount=1 maximum slow & 1000 maximum fast>

<Marqueescrolldelay=1000maximumslow&1maximumfast>

MULTIMEDIA

Multimediarefersto“MultipleMedium”thatistheabilitytoaddsoundandmoving pictures to your webpages.

AddingVideo:<embedsrc="movies.mpg"height="200"width="200">

Adding Sound: Webpage contain basically two varieties of sounds that play whenever the visitor accesses the webpage sthatisthebackgroundsound,andwhen the visitor clicks something. The most common sound file formats are MIDI (Musical Instrument Digital Interface),WAV (as inWave), AU (Audio) and (Audio Interchange File Format).

Soundfilescanbeaddedinmanyoftheways.wecanusethe<A>anchortagso thatthevisitorhastheoptionwhethertohearthesoundornot.Forexample:

<Ahref=”music.wav”>Click Here For Background Music </A>Astheuser clicksonthetext,thebackgroundsoundstarts. Sothevisitorhastheoptionwhetherto hear the sound or not.

Secondoptionrequires<Bgsound>tag:**<Bgsoundsrc="Soundurl">**

Here the src attribute specifies how many times the sound should play. If loop is specify loop = No or infinite to play the sound is an endless loop.

AddingAnimatedGif's:(GraphicsInterchangeFormat)

<imgsrc='A.gif"width=100height=100>

FORMCreation in HTML

Creating AForm: Webpagescanbeinteractiveiftheycollectinformationfrom the user. An HTML form is used for creating interactive web pages. The information entered by the user is passed back to a web server where it might be recorded in a Database for further use.So form is simply a collection of fields of information. These fieldsofinformationcanbeintheformof textboxes,radiobuttons,pulldownmenus etc.Commonusesof forms areOnline orderforms,Feedbackforms,e-mailregistration forms,oranywebpageinwhichinputisrequiredfromtheuserinordertocompletea given task.An HTML form consists of two parts.The first part,the user can see and which he fillout and next one is the part, the user can't see.The second part specifies how the server should process the user's information.Here we commenly used PHP script.

TheFormTag: Aformmuststartwitha<FORM>tagandendwitha</FORM>tag.Ithas mainly two attributes:

1. Action

2. Method

Syntax:<Formaction="URL"method=get/post>Form Elements.....</Form>

Actionisusedtospecifye-mailaddressthatwillreceivetheforminformation.If youhavewrittenaformhandlertowhichthedataintheformwillbesent,thenyouwill havetoaddanaction="←RL"attributetospecifythelocationofthehandler.

The **Method** attributetells thebrowser howto sendthe user's data to the server.Thereareonlytwopossiblevaluesforthemethodattribute:Method="get"or Method="post'. The default value is "post".

UsingFormControlElements: The form element can contain different elements to create form controls.

InputElement: The<input>tagallowsusertoinputinformation.

Text: Usedtocreatethesinglelinetextboxes.

Password:Similartotext,exceptthecharactersyoutypearenotseenonscreen.

Checkbox: Asonoroffswitch.

Radio: Similartoacheckbox,exceptthatinagroupofradiobuttonsonlyoneradio button can be on at a time.

Submit: Submitsaformtobeprocessed.

Reset:Clearsalltheinputonaform.

Button: createsabuttonsimilarinappearancetoasubmitbutton.

File: Canbeusedtosendafilefromthesurfer'scomputeralongwiththerestoftheform data.

Form Creation:

Fieldsetandlegendtag:<Fieldset>tagisusedtogroupmoreformcontrolstogether. The <legend> tag, which is optionalthese tags require closing tag.The Syntaxis :

```
<Fieldset>
    <Legend>GroupLabelText</Legend>
    Control1   Control2   Control3   Control4
</Fieldset>
```

```
<html>
<head><title>FeedbackOnline Form</title></head>
```

<bodybgcolor=”black”text=”white”>

<form>
<fieldset>
<legendalign=”right”>Forminfo@softbrain.org</legend>

InputElement: The<input>tagallowsusertoinputinformation.The<input>element consistsof<input>tagalongwithtypeattribute(tospecifywhattypeofformcontrolyou want),theNameattribute(toindicatethefieldname),andotheroptionalattribtes.The typeattributecanaccepttext,checkbox,radiobuttonsetc.asitsvalue.Belowisalistof all possible values of Type.

<inputtype=”text”name=”text-id”value=”default-text”size=”n” maxlength=”n” read only>

The name attribute is used asanidentifierforthe contentsof theform componentwhentheformissubmitted.Thisnameisnotvisibletotheuserandmustbe uniquewithintheform.Thevalueattributeisoptionalandisusedtosupplyintialtextto thetextfield.Thecontentofthisattributewillbeshownonthetextfield,unlesstheuser changes it.We can specify the physical size of the text input box by using size attribute.The default value is usuallya length of 20 characters.You can,also set the number of characters a user can input.The maxlength attriubte does this.This setting shouldnotbelessthanthevalueofthesizeattribute.Otherwiseyouruserwon’tbeable totypetotheendof theboxandmightgetconfused.Thedefaultvalueofmaxlengthis unlimited.Thereadonlyattributeisusedtodisablethecontentsofthetext.The**<label>**tag is used for given bold heading names in form.

Textfield: themostcommontypeofform<input>istext.Itpresentstheuserwithaprompt for a singlelineoftext.Thesefieldsarecommonlyusedforaname,address,emailaddressetc.

<inputtype=”text”name=”text-id”value=”default-text”size=”n”maxlength=”n”>

```
<label>Full Name</label>
           &n
bsp;           &nbs
p
;   
<inputtype=”text”name=”t1”size=25maxlength=25value=””><br>
<label>FullAddress</label>
           &n
bsp;           &nbs
p
;
<inputtype=”text”name=”t2”size=25maxlength=25value=””><br>
```

Checkbox: A checkbox is simply an empty box and contain a checkmark when activated.Aninputtagwithattributetype=”checkbox”offerstheuseran“on”or“off” switch.Itissimilartoaradiobutton,butanynumberofcheckboxesmaybeswitchonat sametime.Ifacheckboxisswitched“on”whentheformissubmitted,itsvalueattribute is submitted as the form data for the named form component.Each checkbox has a seprate name specified by the name attribute. The syntax is:

```
<inputtype=”checkbox”name=”boxid”value=”checkbox”checked>
```

```
<label>Internet/E-Shopping</label><br>
          
<inputtype="checkbox"name="c1"value="checkbox"checked>
  Computer     
<inputtype="checkbox" name="c2">
  Laptop     
<inputtype="checkbox" name="c3">
  Ipod     
<inputtype="checkbox" name="c4">
  UPS     
```

<inputtype="checkbox" name="c5">

  Mobiles

Radio Button: Radio buttons allows the user to choose one of the several options.On selectingoneoftheoptionstheotheroptionsareautomaticallydeselected.Thebuttons appear as small circles. with prompt and the selected one appears with a solid dot in it.You can indicate the default choice by using a checked attribute.You have to use a uniquevalueforthenameattributeforallradiobuttonsinaparticularset.Syntax:

<inputtype=”radio”name=”radioid”value=”radiobutton”checked>

<label>Gender</label>

           &n bsp;   &nbs p

;   **<input name="radiobutton" type="radio"value="radiobutton">   Male**

           &n bsp;

**<input name="radiobutton" type="radio"value="radiobutton">   Female
**

Pull down Lists: This element creates a menu control. Using this either a drop down menu or a list box can be displayed in the web page. Also this element must contain morethanoneoption.Hereyouuse<Select>insteadof<Input>andithasaclosing tag</select>. These fields allow user to select single or multiple responses..The name attribute establishes a name for the select field and is used for form processing. The sizeoptionissimplythenumberofoptionsyouwanttoshowinthewindow.Bydefault, its value is one specifying size value greater than one turns the pull down list into a scrollinglist.Youcanusethemultipleattribiutetosettheselectfieldtoacceptonlyone option.ToselectmultipleoptionspressCtrlKeyandclickontheoptions.The<Option> tagincludesthelistitems.Foreachlistitem,theremust bean<Option>tag.The closing tag is optional. You can use Value attribute to specify the text to be submitted

whentheparticularitemisselected.Useselectedattributetoindicatethedefaultmenu item.

```
<label>Year</label>
<selectname=”Textid”size=”n” mulitple>
<optionvalue=”ChoiceId1” selected>2000</option>
<optionValue=”ChoiceId2”>2001</option>
</select>
```

```
<label>Dateof Birth</label>
           &n
bsp;           &nbs
p
;MM   
<selectname="s1"size=1>


<optionname="01">january</option>
<optionname="02">february</option>
<optionname="03">march</option>
<optionname="04">april</option>
<option
name="05">may</option></select>      
DD   
<selectname="s2"size=1>
<optionname="01">01</option>
<optionname="02">02</option>
<optionname="03">03</option>
<optionname="04">29</option>
<optionname="05">30</option></select>    &
nbsp; 
YY   
```

```
<selectname="s3"size=1>
        <optionname="01">2001</option>
        <optionname="02">2002</option>
        <optionname="03">2003</option>
        <optionname="04">2004</option>
        <optionname="05">2005</option>
        </select><br>
```

Text Area Tag: Itisanextensionoftextelement.Theinputelementtype=”Text” createsasinglelinetextboxandTextareatagcreatesamultiplelinetext box.Itsetsan areawithinaforminwhichtheusercantypealargersectionoftext.Thetextareatag presentsa multiple text window with the size specified bythe rows and colsattributes.

Rowsgivetheheightandcolsgivethewidthofthetextarea.

```
                <Textareaname=”text-Id”rows=”n”cols=”n”>TypeanyTexthere...
</Textarea>
```

```
        <label>TypeYourMessageHere</label><br>
                   &n
bsp;           &nbs
p
;            &n
bsp;        

        <textareaname=”ta”rows=15cols=60></textarea><br><br>
```

File Control: Thiscontrolletstheusersubmitafileontheircomputeralongwiththe form.Thesizeattributespecifiesthephysicalsizeofthefieldsinputbox.Theaccepts attribute is used to restrict thefiletypes allowed inafileupload.

```
                <Inputtype=”file”name=”file-id”size=”n”accepts=”file-type”>
```

```
        <label>attachyourResume</label>
               
```


**<inputtype="file"name="file">
<hr>**

Password: Passwordfieldisexactlysimilartotextfield,exceptthatitdisplays ****(asterisks)insteadoftheactualinput.Thesefieldsaremainlyusedforconfidential contents.

<inputtype="password"name="passwordid"value="defaulttext">
**<label>Login:</label>
**

<label>User Name<label>

**<inputtype="text"name="t1"size=25maxlength=25value="">
**

<label>Password<label>

**<inputtype="password"name="pass"size=25 maxlength=25>
<hr>**

ButtonValue: Createsabuttonsimilarinappearancetoasubmitbutton,exeptthatthis kindofbuttondoesn'tdoanythinginparticular.←singbuttonvalueoftypeattributeyou could have buttons of your choices. You normally require these buttons for executing various scripts. These buttons have no default functions like submit & Reset. The name attribute assigns a name to the button and is used for form processing. The value attributesacceptsa text that appearsonthebutton.Thebutton sizewillbe controlled directlybythetextlength.TheONCLICKattributegivesthenameofthescript thatisto be activated when the button is clicked.

<Inputtype="button"name="buttonid"value="clickhere" onclick="Script">

Image Button: Exactlythesameasasubmitbutton,exceptthatyoucanspecifyany image instead of the normal gray button appearance. An input element with

type=”Image”createsanimagebutton.Insteadoftextanimageof yourchoiceis displayed.Theattributesforanimagebuttonaresimilartotheattributesfor<IMG>tag.

HereyouhavetospecifySRCorImagesforaligningtheminleft,centerorright

<inputtype=”image”name=”img”src=”pic.jpg”height=50width=100>

Submit Button: Everyformmusthaveasubmitbuttonasafterfillinguptheform,the visitorneedstosubmittheinformationtoyou.Aninputtagwithtype=”Submit”provides abuttonthatsubmitstheinformationinthecompleteformtotheURL,givenasthe actionattributeoftheformtag.Bydefault,”Submit”iswrittenoverthebuttonistaken fromthevalueattribute.Thebuttonsizewillbecontrolled directlybythetextlength.

<inputtype=”submit”name=”sub”value=”Submit”>

ResetButton: Theresetvalueofthetypeattributecleansallformentriestothedefault once or leaves them blank if no defaults are specified.As the reset button can simply wipe off all the work done, therefore it should be well labeled and should never be placed before submit button.

<inputtype=”reset”name=”res”value=”Reset”>
</fieldset>
</form></body></html>

FRAMES

Framesareusedtocreateadocumentthatdividesthebrowserwindowintodifferent parts and display a different web page in each of them.A frame set document is a document that defines one or more frames by using frameset and frame elements. Framescancommunicatewitheachothersothatanactionperformedonapageinone framecanchangethecontentsandbehaviorof anotherframe.Acommonframelayout usesanindexframewithlinksontheleft,andacontentframeontheright.Asyouclick

onthelinksontheleftframe,thecorrespondingHTMLpagewillappearontheright frame.Oneframecanbeusedtokeepsomeinformationstaticwhiletheotherframe can contain the actual content of different sections of website.

The <Frameset>Tag: Thesplittingofabrowserscreenintoframesisaccomplished withthe<frameset>and</frameset>tagsembeddedintotheHTMLdocument.The <frameset>tagrequiredoneofthefollowingtwodifferentattributesdependingon whether the screen has to be divided into rows or columns.

Rows & Cols: Row attribute is used to divide the screen into multiple rows. Cols attributeisusedtodividethescreenintomultiplecolums.Itcanbesetequaltoalistof values. Depending on the required size of each Rows and Columns. The value can be:

1. **Anumber of pixels.**
2. **Expressedasapercentageofthescreenresolution.**
3. **Thesymbol,'*'whichindicatestheremaining space.**

Example :<Frameset Rows="50%,50%></Frameset>Result:Itdividesthebrowserscreenintotwoequalhorizontalsections.

<FramesetCols="50%,50%></Frameset>

Result:Itdividesthebrowserscreenintotwoequalverticalsections.

The <frame>tag: Oncethebrowserscreenisdividedintorows(horizontally)and columns(vertically),eachdifferentHTMLdocument.Thisisachievedbyusing the <Frame>tagwhichtakesinthefollowingattributes:

Name="name": Givestheframeauniquenamesoitcanbetargetedbyother documents. The name given must begin with an alphanumeric character.

<FrameName="AA">

Src"Url": IndicatestheURLofthedocumenttobeloadedintotheframe.

Creating FramedDocuments: Creatingframesisactuallyquitesimple.Firstofallyou needtodecideashowyouwanttodividethebrowser's windowof thewebpage.Then writethehtmldocumentthatyouwanttoputinthepagesegments.Inadditiontothisa master document is to be written which is used to specify what goes where. Suppose we wanttodivideapageintotworowsandfourcolumns.ThentheHTMLcodeforthe frameset will be:

```
<html>
<head><title>FRAMEONLINE..... </title></head>
<frameset>

    <frameset cols="30%,*">
```

```
<frameset rows="50%,50%">

    <frame name="aa">
    <frame name="bb">

</frameset>

<frameset rows="50%,50%">

    <framename="cc">
    <frame name="dd">
</frameset>

</frameset>

</frameset>
</html>
```

The<Frameset>and<Frame>tag: Themasterpagedoesn'thavea<body> tag.Instead, it uses

<Frameset>tags.The<Frameset>tagisincludedafterthe<Head>tagandit established frames within the HTML document. Itdoes all the dividing. It requires a closing tag and there may be any number of frameset tags within an HTML document.Thecolsattributeisusedforverticalframeswhereastherowsattributeis usedforhorizontalframes.Thewidthorheightisspecifiedasacomma-delimitedlist of sizesin pixels,percentageorasa proportion of the remainingspace byusing"*".

Anotherbasictagisthe<FRAME>tag.Itcontainstheframecontentandittells the browser what to put in each frame. Each frameset must include a

<FRAME>definitionforeachdivision.Asinourexampletherewerefourpartitionsand so four <FRMAE>tags. Notice that frame does not have a closing tag.

Frame Border Attributes: By default, most browser use a frame border. Border attributesthatcontroltheframeborder.Toturnofframebordersetborder=0andfor turnonbordersetborder=8.Youcanusetheseattributesbothinthe<frameset>or

<frame>tags.Toremoveallthebordersfromyourframesaddthoseinthe <frameset>tagandtoremove theborderfromindividualframes include these attributesinthecorresponding<frame>tag.Youcanalsosetthecoloroftheborderby Just add bordercolor="purple".

Controlling Scroll Bars: Scrolling controls the appearance of horizontal and vertical scroll bars in a frame. This takes the value **Yes / No / Auto**.

In simple words, if the frame's content goesbeyond the frames width, most browsersadd scrollbarsso that the usercansee thefullcontent. Even through scroll barsareusefultoseetheentireframe'scontent,sometimestheycanbeunnecessary and visually disturbing. You can control the use of scroll bars in a frame by including scrolling attributes.

Yesmeanstheframegetsscrollbars-whethertheyareneededornot.

No meanstherewillbeanyscrollbars,evenifyourframecontentismuchlarge. The browser will simply display as much as it can.

Auto is default If scroll bars are needed, theyappear, it theyare not needed they stay conveniently out of the way.

Targeting Named Frames: Whenever a hyperlink which loads a document in a frameiscreated,thefilereferencedinthehyperlinkwillbeopenedandwillreplace the current document that is in the frame.

Inasituationwherethenewdocumentneedstobeopenedinadifferentframe while keeping the document from which the newdocument was browser open in a different frame, a simple HTML coding technique must be used.

SincethehyperlinkmustopenanHTMLfileinanotherframe,theframein whichtheHTMLfileistobeopenedneedtobenamed.Thisisdonebyusingthe

name attribute of the <FRAME>tags. The name takes one parameter, which is the framename.Thehyperlinktagwillhavetobesuppliedwiththefollowinginformation:

1. **Thefilename.htmlfilethathastobe opened.**
2. **Thename oftheframewherethefilename.html file hastobeopened.**

Theattributeviawhichtheframenameisspecifiedistheattribute, whichisapartofthe<A></A>tag.Thisinformationisgivenas: TARGET="framename"

Link Content

WebEditorNotepad

There will be times when you will want to edit textualfiles.Textualfiles are different from documents created by WordPad, Word, WordPerfect or some other word processingprograminthattheycontainnoimbeddedcodes.Editingthesefileswitha word processing program can introduce special characters that make these files unusable. Instead, use Notepad which allows you to edit the file as pure text.

Textual files will normally have a TXT file extension, but there are several special purposefilesinWindowsthatmustbepuretext.Someofthemoreimportantofthese include your CONFIG.SYS, AUTOEXEC.BAT, WIN.INI and SYSTEM.INI (These files existed in earlierversion ofWindows, buthave beeneliminated inWindowsXP).You maygettothepointofwantingtoplaywiththesefiles.Ifso,useNotepadtoeditthese andnotWordPadasyoursystemcannotusetheresultingWordPadfile.Ifyoudecide you want to create a web page, but don't have an HTML editor, you will want to use Notepadsoasnottointroducethosenastycharactersassociatedwith WordPad,etc.

Inadditiontohavingatooltouseineditingthosespecialfilesonyoursystem,learning Notepadcanprovideagoodfoundationforlearningsomeoftheothertoolsthatcome withWindows95/98/ME/XPaswellasanumberoftheapplicationsthatyoumaywant to add to your system later. Notepad is simple to learn but has some features in common with other programs.

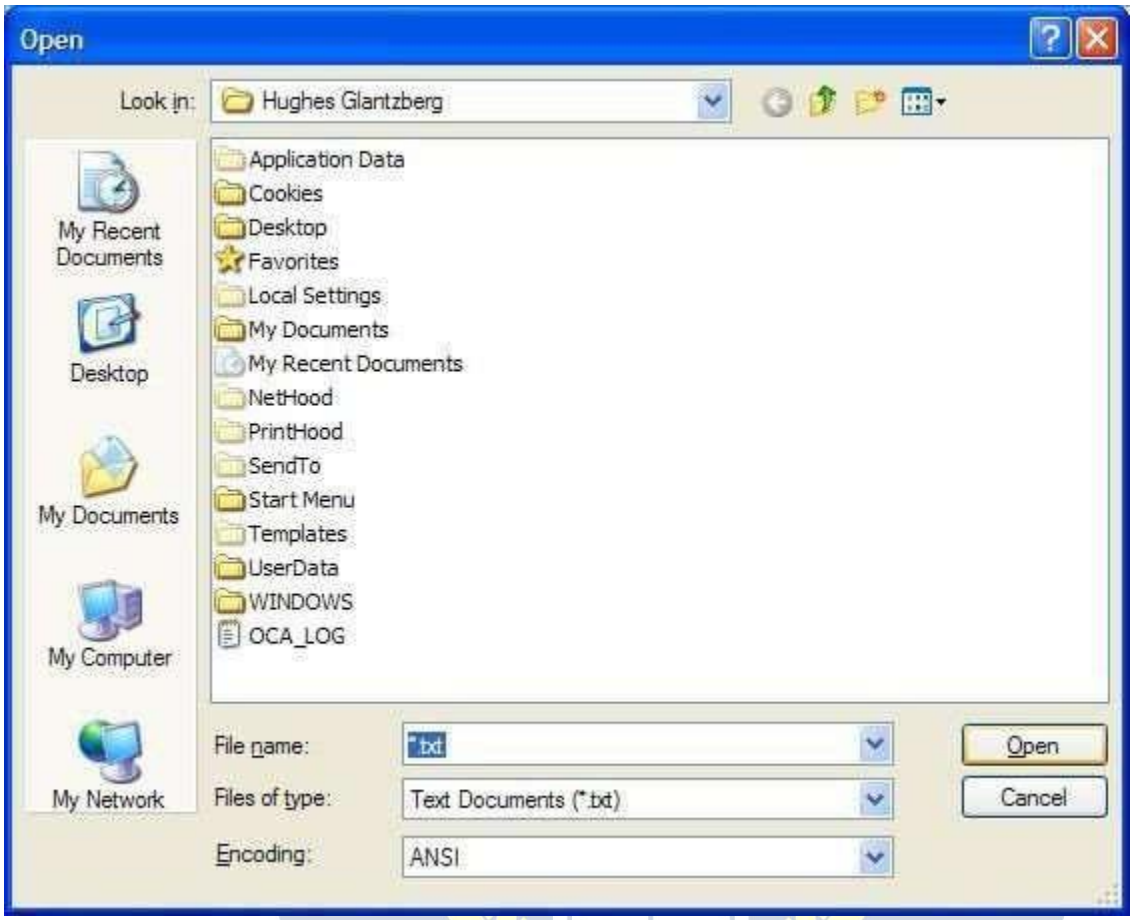
The first thing I want to point out in the above is that I have entered some text into Notepad.Okay,let'slookatsomeofthefeaturesofNotepad.Let'sstartoffbylooking ateachofthemenusacrossthetopofNotepad.Beforewegototheindividualmenus, notice something about themenubar itself. See theunderlined letters in each of the menu items (File, Edit, Format, View, etc.) (Under Windows XP, the underlines are onlyvisiblewhenyouholddownthe<Alt>key-previouslytheunderlineswerealways visible)?Thesearemeaningful.Ifyouholddownthe<Alt>keyandpresstheseletters, you will select that menu. Obviously you can select each menu with the mouse, but this gives you an alternative way of getting into them. So, you can get into the File menu by pressing <Alt>F.

FileMenu

ThisistheFilemenu.Noticeacoupleofthingsaboutthismenu.Noticethe"..."atthe end of several selections. This indicates that selecting these items will take you to a dialog box that will allow you to carry out that operation.Notice the code down the rightsideofthemenu-Ctrl+N,Ctrl+O,etc.Thesearehotkeysyoucanusefromwithin thedocumentwithouthavingtogointothemenu.Forexample,holdingthe<Ctrl>key down and pressing N is the same as going into the File menu and selecting New. Thesehotkeyscansaveyousometimeingettingtothesefunctions.Iwouldn'ttryto memorizethesehotkeysrightnow,butjustmakeamentalnoteofthem-you'lllearn them over time as youfind them appropriate to your situation.

New-Thiswillstartanewdocument.Ifyouarecurrentlyworkingonadocumentthat youhaven'tsaved,thesystemwillpromptyoutosavetheolddocumentbeforestarting a new one.

Open...-Thisallowsyoutobringanexistingdocumentintonotepadtoviewand/oredit it. You'll see the following dialog box when you make this selection:

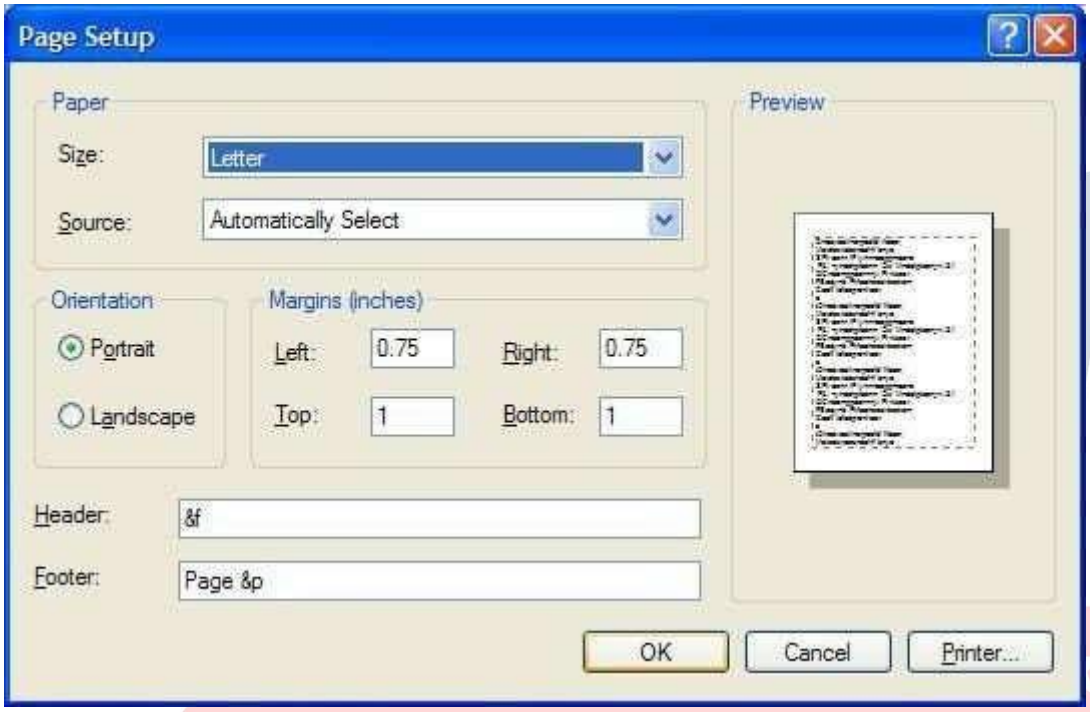


This is the standard Open dialogboxused bymostWindows programs. It consists of atoolbaracrossthetopthatshowsyouwhichfolderyouarecurrentlyinalongwitha couple of control buttons for getting to where you want to go. The main part of the Opendialogboxshowsyouthefiles/foldersthatmatchthecriteriaforthisapplication. Nextiswherethesystemwilltellyouthenameofthefileitthinksyouwant.Rightnow, itdoesn'tknowsoitassumesyouwanttolookatallTXTfiles.Nextiswhereyoucan tellthesystemwhattypeoffilesyouareinterestedinlooking at.Bydefault,Notepad looks at Text Documents (*.TXT), but you can change this to look at anything else. Finally, you can either Open the selection or Cancel this operation.

Save - If you are making modifications to an existing file, Save will put the changes backintothefileafterconfirmingthatyoureallywanttomakethechanges.Ifthefile you are working on is a new file, Save works the same as Save As.... SaveAs...-SaveAs...bringsupadialogboxsimilartotheOpendialogboxabove.In Notepadyougettosavethefilewhereveryouwant,butthebestplacewouldbeinMy Documents.It'seasyenoughtochangefoldersandsaveafileanywhereonthe

system you want. See Naming a File for some suggestions on how to organize your data.

Page Setup... - The Page Setup... dialog box allows you to customize some of the thingsyouseewhenyouprintyourdocument.Forexample,youcanchangethesize ofyourpaper,customizetheheaderandfooteroneachpageaswellasthemarginat thetop,bottomandeitheredgeofthepaper.ThePageSetup...dialogboxlookslike this:



Print...-Thisisastandardprintoperation.ItbringsupthePrintdialogwindowwhereyou can modify the printer information.

Exit - This shuts down Notepad. If the file you've been working on has not been saved, you will be prompted to save the file before Notepad exits.

EditMenu

The Editmenu contains thosefunctions thatallow you tomanipulate the information youhaveonthescreen.Inthiscase,therearefouritemsthatappeardiminthemenu. The reason for this is that these items are not available at the present time. In most cases,youhavetohavesomethingselectedfortheseitemstowork.Windowsdoesa pretty good job of communicating with you to tell you what you can and cannot do. AlsonoticethatmostoftheitemsintheEditmenuhaveakeycombinationontheright (Ctrl+Z,etc.).Thesearehotkeysthatcanbeusedfromwithinthedocumentwithout havingtogototheEditmenu.Forexample,youcandoaCopyfromwithinadocument byholdingdownthe<Ctrl>keyandpressingthe"C"key.Idon'trecommendthatyou tryandmemorizethesehotkeysjustnow.Instead,Iwouldrecommendthatyoujust makenoteofthemasyouusethemenuitemsandovertimepickuponthoseyouuse most frequently.

Undo - Notepad does have a rather neat feature called the Undo. In essence, this is your*Oops*button.Ifyoumakeamistakeandsuddenlysay"Oops",youcanselectthe Undo and reverse whatever it was you just did. Unless I'm mistaken, the Undo item will only work on the most recent change you've made to your document.

Cut - Again, this item is only available if you have something selected in your document. Otherwise you have nothing to Cut. You can select some piece of your document by holding down the left mouse button and dragging across the letters/words/sentencesthatyouwanttoselect.Yourselectionwillhavewhiteletters and a blue background. Now you will be able to Cut this selection. Cut removes the

selectedtextfromyourdocumentandputsitontheClipboard.Theinformationisnot totally deleted, but is being held in case you want to put it somewhere else.

Copy-CopyisverysimilartoCut.TheonlydifferenceisthatwithCopy,yourselected textisnotremovedfromthedocument.Instead,acopyofyourselectedtextisplaced on the Clipboard for you to use later.

Paste - Once you have some text on the Clipboard (using either Cut or Copy above), you canmove to wherever you would like to put thistext and Paste itbackinto your document.Inotherwords,thecombinationofCutandPasteallowsyoutomovetext aroundwithin yourdocumentwhilethecombinationof CopyandPasteallows youto duplicate information.

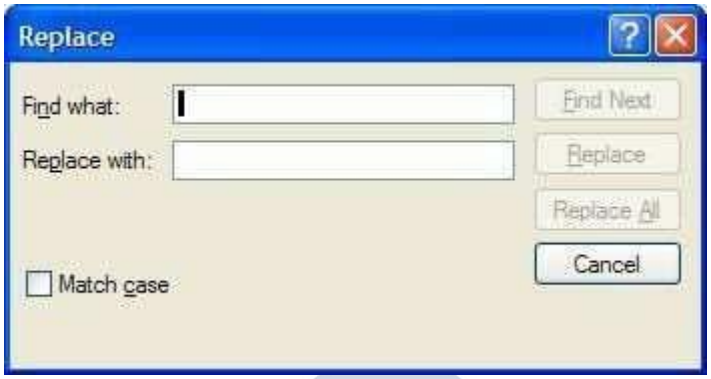
Delete - When you Delete text from your document, it is gone. If you do this by accident, you can use the Undo function to bring it back, but otherwise it is gone. Delete does not place the selected text on the Clipboard.

Find... - As you've already seen, this function opens a dialog box that allows you to enter the text you want to search for along with a couple of pieces of information to helpNotepadperformthesearch.Ifthetextisfound,itwillbeselectedreadyforyou to Cut, Copy or overtype.

Find Next - This function simply repeats a previous Find.... This is useful if you have the same text in several different places within your document.

Replace - This function allows you to locate some text within your document and replaceitwithsomeothertext.Itevenhastheabilitytoperformitsfunctionglobally throughthedocument,butbecarefulofusingthisasitcangetyouintotrouble.For example,supposeyouwantedtoreplace"eat"with"ate"globallythroughouta

document.This function would do it, but it would also change "eaten" to "ateen", "cheat"to"chate" and"defeat" to "defate".



GoTo... -InGotoline,typethelinenumberyouwantthecursortojumpto.Youdo nothavetohavelinenumbersinyourdocumentforthiscommandtowork.Linesare counteddowntheleftmarginbeginningatthetopofthedocument.

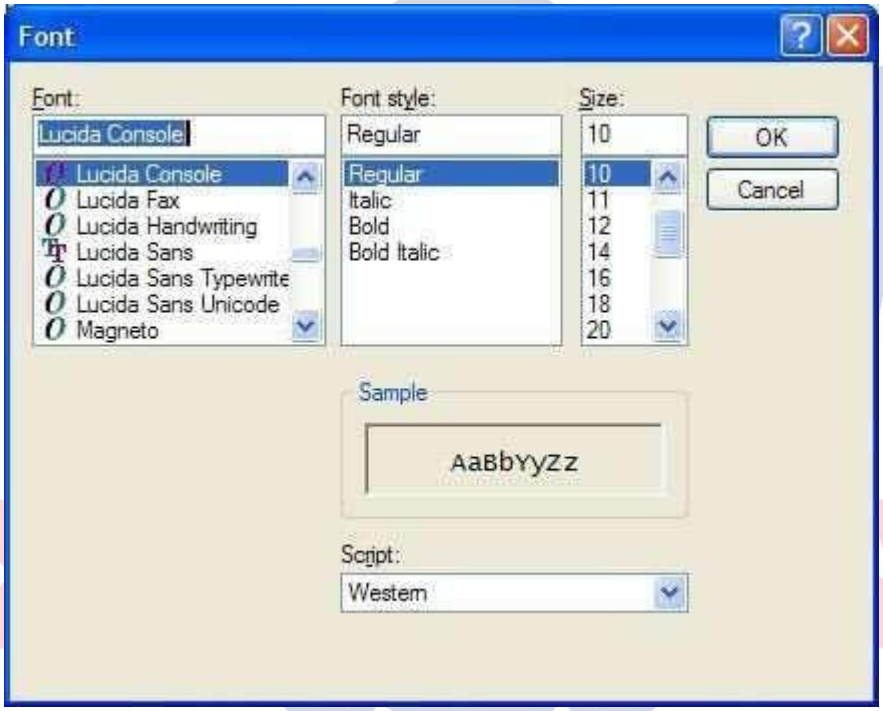
SelectAll-Ifthereissomethingyouwanttodowithallthetextinyourdocumentat the same time, all you have to do is select the Select All function and your entire document will be selected. Now you can either Cut or Copy all the text to your Clipboard.

Time/Date-TheTime/DatefunctionisaneatfeatureofNotepad.Somepeopleliketo keep a journal and in a journal, you might want to have the date and time as part of the document. Obviously, you can type in the date and time, but with the Time/Date function,Notepadwillautomaticallyinsertthedateandtimelikethis:7:47AM2/27/98. *Format Menu*

WordWrap - In some cases, you may want the text you type to appearon the same line,butmostofthetime,you'dliketobeabletoseeallthetextonthescreenatthe sametime.Ifyouonlyhavealittlebitofinformation,youmightbeabletoenlargethe

Notepadwindowtoseeallthetext.AnotherwayofhandlingthisistoselecttheWord Wrapfunction.Thiswilltakewordsthatdon'tfitintheNotepadwindowandwrapthem downtothenextline.Acheckmarkappearswhenwordwrapisturnedon.Wrapping textenablesyoutoseeallthetextontheline,butitdoesn'taffectthewaytextappears when it is printed.

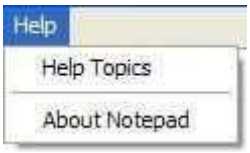
Font... -Thisallowsyoutochangethefontusedtodisplaythefileyouhaveopen.It doesn't change the font of the file itself. It simply allows you to view/edit files using whatever font you wish.



ViewMenu

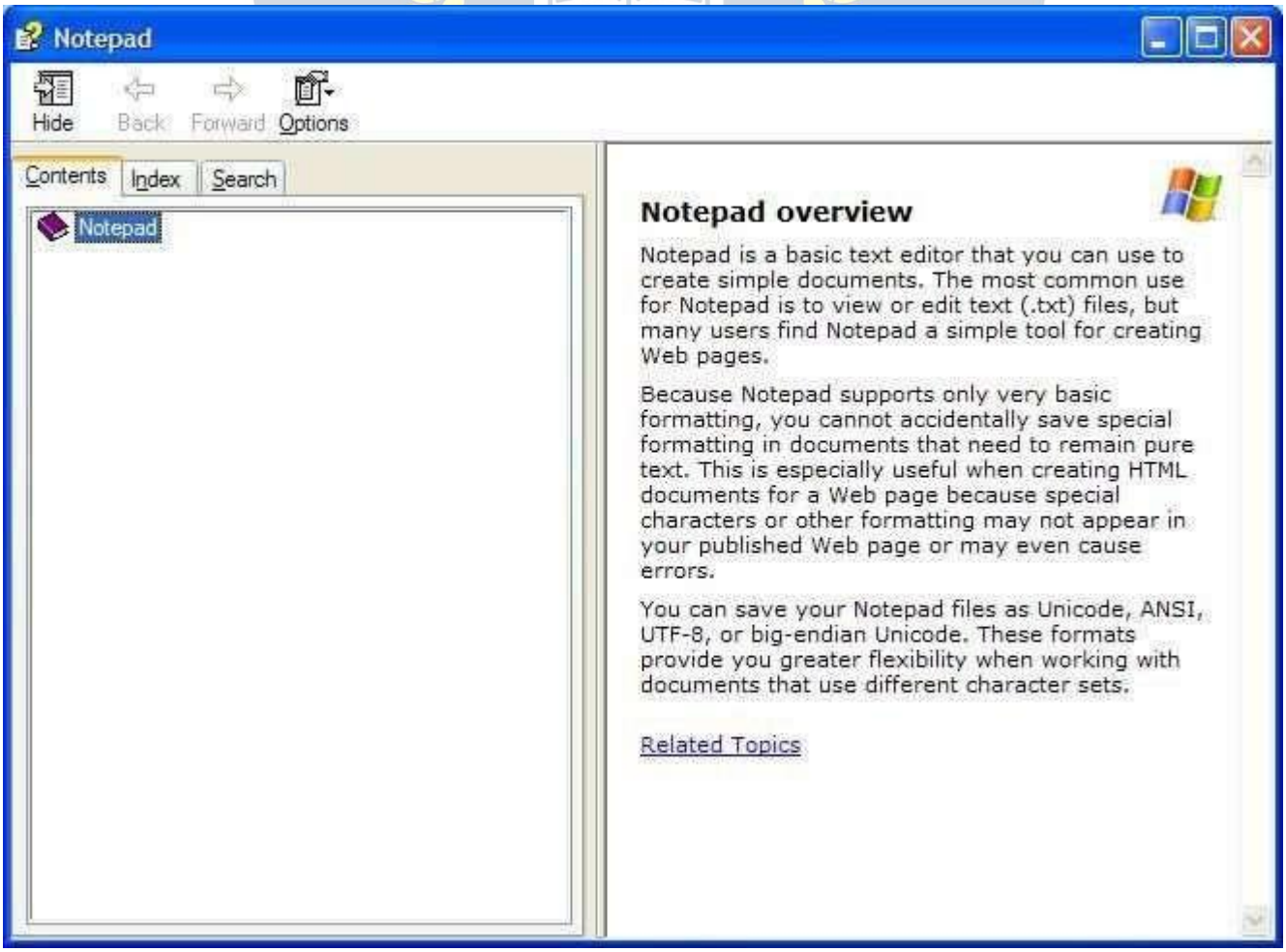
This menu only contains one item; **Status Bar** which will place an extra line at the bottom of the Notepad window to keep you informed of what has or will be done as you work in Notepad.

Help Menu



Most programs in Windows have a Help menu that provides information about using that particular program. The Help menu may not answer all your questions about a program, but I would encourage you to explore what is there before you look elsewhere. Most companies marketing software today are providing more Help and less hardcopy documentation.

Help Topics - Notepad is a very simple program to use as it doesn't contain a lot of bellsandwhistles.Asaresult,theHelpTopicsisnotverylong.Youshouldbeableto explore all of Help Topics in just a few minutes. I would encourage you to do so for two reasons. First, you'll know nearly everything there is to know about Notepad. Second, you'll become familiar with the format of the Help facility Microsoft uses so you'll know what to expect in other Microsoft products.



AboutNotepad -ThefunctionoftheAboutforanyprogramissimplytoletyouknow whatversionoftheprogramyouarerunning.Fromtimetotime,theprogrammermight include some additional information about your system, but don't expect this. Here's what my version of About Notepad looks like:

WebBrowserInternetExplorer

BasicTerms

Oneofthemorepopularandfastestgrowingareasincomputingistheinternet. TheInternetisacollectionoflargecomputernetworks,eachofwhichisacollectionof smaller networks.A network is composed of several computers connected together forthepurposeofsharinginformationandresources.ConsideryourcomputeratFloyd College.Your computer is connected to the local network at the college, which is in turnconnectedtoPeachnet,whichisconnectedtotheInternet.Thesoftwareusedto connect computers is called Transmission Control Protocol/Internet Protocol, or TCP/IP.

TheWorldWide Web

Modern computers have the ability to deliver information in a variety of forms such as graphics, sound, video, animation, as well as text.The ability to deliver information in these different forms is called multimedia.On the Internet this multimedia capability is available in a form called hypermedia.Hypermedia is any varietyofcomputermediaincludingtext,graphics,videoandsound.OntheInternet, hypermediaisusuallyaccessedthroughtheuseofahyperlink.Ahyperlink,orlink,is aspecialsoftwarepointerthatpointstothecomputerthatcontainstheinformationin whateverformattheinformationexists.Thecollectionof hyperlinksthroughoutthe

InternetcreatesanetworkoflinkscalledtheWorldWideWeb.Eachcomputerinthe Webthatcontainshypermediathatcan bereferencedbyhyperlinksandaccessedby other computers is called a Web Site.Hundreds of thousands of Web sites around the world can be accessed through the World Wide Web.

URL(UniformResourceLocator)

The URL of a Web page is a unique address of each individual Web page at theWebsitesontheInternet.AtypicalURLiscomposedofthreeparts.Wewilluse the URL below to explain the function of each part.

The first part of any web address is the protocol.A protocol is a set of rules thatcomputersfollow.Mostwebpagesusehttp,whichstandsforhypertexttransfer protocol.HTTP describes the rules for transmitting hypermedia documents electronically.Theprotocolisenteredinlowercaseashttpandisfollowedbyacolon and two forward slashes.The colon and the two forward slashes are required punctuation.Other protocols used on the internet include FTP which stands for file transferprotocol,gopherwhichgivestherulesformenudrivendocumenttransfer,and telnet which describes the rules for remote terminal sessions.

ThesecondpartofaURListhedomainname.ThedomainnameistheInternet addressofthecomputeronwhichtheWebpagesarelocated.Inourexampleabove, the domain name is www.softbrain.org The last part of the domain name gives an indicationofthetypeoforganizationresponsiblefortheWebsite.Forexample,com at the end indicates a commercial site, gov indicates a government site, and edu indicates an educational site.

The third part of the Web address is the file specification of the web address. This part of the Web address shows the filename of the web page as well as which folder or folders contain the Web page.This is called the path name of the page.

HTML(HyperTextMarkupLanguage)

Web pages are created using a special formatting language called hyperText Markup Language.HTML formatting codes are used to display the pictures and graphicsusedtocreateWebpages.WhenyouareviewingaWebpage,youcansee theHTML codeusedtocreatethepagebyselectingthe" ↑ iew"pull-downmenuand then clicking on "Source".

HomePages

AhomepageistheintroductorypageofaWebsite.Allotherwebpagesforthat site can usually be reached through the home page.

InternetBrowsers

A browser is a program that makes using the World Wide Web easier by removingthe complexityof havingto rememberthe rules, syntaxand commandsfor accessingWeb pages.Internet Explorer is the browser that you will be using in this course.Another popular browser is Netscape Navigator.

StartingInternetExplorer

BeforeyoucanuseInternetExplorer,itmustbeinstalledonyourcomputerand youmustbeconnectedtotheInternetthrougheitheralocalareanetworksuchasthe one at Floyd College or a modem.If the program is installed, you start Internet Explorereitherbydoubleclickingonitsicononthedesktoporbyclickingonthestart button, Programs, andthen Internet Explorer.When the program starts, you should see the Floyd College home page.The title of the web page will be displayed in the title bar.

TheInternetExplorerWindow

The Internet Explorer window contains several features to make your work on the Internet easy.Several of these features are common to all Windows 95 applications such as the title bar at the top with the menu bar containing pull-down menus below it.

Below the pull-down menus is the standard toolbar.Each of the main features of the Internet Explorer screen is discussed below:

MenuBar

Themenubarcontainsseveralbuttonswhichareusedtogroupcommandsinto groups.File contains the commands which relate to file operations such as saving a file or printing a file.The Edit menu contains commands for editing your work.To display a menu choice such as File, click on the word File in the menu bar.A list of choicesshouldappearbelowthewordfile.Toselectoneofthesemenuchoices,click on the appropriate choice from the pull-down menu.

Displayarea

Most web pages are too large for the entire page to be seen on the computer screen atonetime.When viewing a page in Internet Explorer,you willusuallysee a scrollbarattheright sideof yourscreen,which canbeusedtoscrolldown andview the rest of the document.Use the arrows on the top and bottom of the scroll bar to move up and down through the document.

Someof thewords ona web page willbe displayed inblueletters.Thisisthe default color of text which is a hyperlink.A hyperlink is a pointer that sends your computertoanotherplaceontheInternetsimplybyclickingonthelink.Picturesand graphics can also be hyperlinks.As your mouse pointer is moved over a hyperlink, thepointerchangestoapointinghandtoshowyouthatwhateverisdisplayedonthat portionofthescreenisalink(pointer)toanotherplaceontheInternet.

StandardToolbar

Thebuttonsonthestandardtoolbarallowyoutoperformcommontasksquickly and more easily than doing those same tasks using the choices on the pull-down menus.Twoveryimportantbuttonsarebackandforward.Thesebuttonsallowyou tomovethroughthewebpagesthatyouhaveviewedinInternetExplorer.Theback buttontakesyoubackonescreenatatimewhiletheforwardbuttonmovesyouforward one screen at a time.Each button on the toolbar is normally gray.Color is added when the mouse pointer is placed over a button.

Another important button on the standard toolbar is the STOP button.Some webpagesareverylargeand takeconsiderabletimetoloadanddisplay.Youmight see the first part of a page and decide that you do not need this page or you might decide that you do not want to wait for the entire page to load.Clicking the STOP button will

stop a webpage from being downloaded.

AddressBar

TheAddressBarcontainsawhitetextboxwhichdisplaystheURLfortheweb page currently displayed.The URL of a web page is its Internet address.These will bediscussedinmoredetailbelow.Youcanalsotypeawebaddressintothisboxand press ENTER to load the web page in Internet Explorer.

InternetExplorerIcon

The Internet Explorer Icon rotates while a connection to a web site is being made, a web page is being loaded into memory, and a web page is being displayed on your screen.

StatusBar

TheStatusBardisplaystheURLof alinkwhenthemousepointerpassesover thelink.Italsoprovidesinformationabouttheprogressofyourrequesttoloadanew web page.

Toolbars

Several toolbarsare available in Internet Explorer.Eachone contains buttons that enable you to easily move between web sites and stop a page from being downloaded.

InternetAddresses

Allinternetaddresseshavethesamegeneralformatasshownbelow:

http:// www.softbrain.org

Thefirstpart,http://,letsthecomputerknowthatyouarelookingforawebserver,not newsormailserver.Themiddlesection,www.mcp.com,isthenameofthecomputer

whichcontainsthefilesyouarelookingfor.Thepartthatappearsaftertheslash

names the folders and filenames of the documents you are looking for.The .html indicates the type of document you are looking for, in this case HyperText Markup Language which is the standard language in which all web documents are written.

↔oucanleaveoffthe"http://"whentypinganinternetaddressinInternetExplorer. Internet Explorer also assumes that the address will be in the form www.softbrain.organditisnotnecessarytotypethewwwandthecom.Thesewillbefilledinbyinternet explorer if you leave them out while typing an internet address.

Note:Many computers on the internet are case sensitive so you need to make sure thateveryletterthatshouldbecapitalizediscapitalized.Alsomakesurethatyouare using a forward slash "/" when necessary instead of the backslash "\".

TheLinksToolbar

Thelinkstoolbarprovidesasetoflinkstogetthenewuserorientedtotheinternet.It comes with connections to a variety of places including *Best of the Web, Microsoft's HomePage,theWebGallery,ProductNews,andToday'sLinks*.Ifyouselectoneof the links shown on this bar, Explorer opens that Web Page.From there you can accessinformationindiverseareasbyfollowingthelinksshownonthescreen.Asan example, if you choose Best of the Web, you can access information on travel, entertainment,sports,andmuchmorejustbyfollowingthelinks.Travelthroughthe layersandeventuallyyouwillreachanarticlediscussingthesubjectinwhichyouare interested.

ForwardandBackButtons

Two of the most useful buttons on your screen are shown in the upper left corner of yourscreenonthestandardtoolbar.Thesearetheforwardandbackbuttons.Many times as you explore on the internet, you will need to move back to a page that you have already visited.By clicking the back button you can move back through the pagesyouhavevisitedoneatatime.ThenyoucanclicktheForwardbuttontomove forward through the pages as you browse for information.

Note:Onceyoumovebacktoyourfirstpage,theBackbuttonwillbegrayindication that

you have traveled as far as possible in this direction.

Note:Youcanonlyusetheforwardbuttonafteryouhavefirstgoneback.Until yougoback,theforwardbuttonwillbegrayindicatingthatthisoptionis unavailable.

HomeButton

If you become hopelessly lost in your internet explorations, you can always click the homebuttontoreturntoyourStartingPage.Thispagecouldbeoutofdateespecially ifitisonethatisupdatedfrequently,soyoumightneedtoclickontherefreshbutton to display the latest version of the page.

Links

TheWorldWideWebismadeofmillionsofwebpagesthatarejoinedtogetherbyhypertext links that provide a truly "point and click" environment for accessing information on your computer.These linksarereallypointersthat instruct yourcomputerwhereto go on the Internet to access the information you requested.By default, links are displayed in blue text,butawebpagecandisplayitslinksinanycolor.Thereisoneadditionalwaythatyou can identify a link.When the mouse pointer is moved over a hypertext link, the pointer changes to a hand.When the mouse pointer changes to the pointing hand, you will see the URL of the link displayed in the status bar located at the bottom of your screen.

Using Links

Linksareactivatedbyplacingthemousepointeronthelinkandclickingoncewiththe left mouse button.When you click on the link, Internet Explorer loads whatever document, file, or web page that is attached to that link.While a document is being loaded,thesmallglobeintheupperleft-handportionofthescreenwillspin.Explorer will load the text of a web page before it loads the graphics to allow you to begin readingthecontentsofthepagewhilethegraphics,whichloadmuchslower,arebeing displayed.Whiteboxeswillbedisplayedtomarkthelocationofthegraphicsthatwill be shown later.When the globe stops spinning, the page is completely loaded.

Note:Iftheglobestopsspinninghalf-waythroughaturnorthemessage"connecting tohost"isdisplayedatthebottomofthescreenforanextendedperiodoftime,then youhaveaproblemwiththewebpageyouaretryingtoload.Eitherthesitewasbusy

orjustnotworkingforsomereason.Ifthishappens,clickthe"STOP"buttonlocated on your toolbar at the top of the screen.

TheRightMouse Button

Once a web page isdisplayed, you might want to save the page forlateruse, or you might want to use a graphic on the page as wallpaper.To perform either of these tasks,usetherightmousebutton.Let'ssupposethatyoufindanimagethatyouwant tosaveonyourharddiskforlateruse.Pointtotheimagewithyourmouseandclick the "right" mouse button.A shortcut menu will pop up giving you choices such as savingtheimageorusingtheimageaswallpaper.Inourexamplewehavefoundan imagethatwewanttosaveonourharddisk,sowewillselect"SavePictureAs"from theshortcutmenuthatappears.Youwillbeaskedtonametheimageyouaresaving and select a location for saving the file.Click OK when you are finished.You could also select "Set

As→allpaper"tomakethepicturethewallpaperthatwillbedisplayedonyourdesktop.

Using History

Internet Explorer provided other ways to move around in the pages you have visited thanjustusingthe*Back*and*Forward*buttons.TheHistoryListallowsyoutoinstantly move to any site that you have recently visited.History keeps track of not only the sites you have visited today, but also keeps track of the sites you have visited in the pastfewweeks.Theexactlengthof timeasitestaysinhistoryis determinedbythe user,butthedefaulttimeistwoweeks.Tousethisfeature,clickontheHistorybutton atthetopof yourscreenandselectthesiteyouwishtorevisitfrom thelist.

Savinga WebPage

If you are doing research, you are going to need to save the information that you locatesothatyoucanuseitatalatertime.Websiteschangesooftenthatyoucannot be assured that the files you find onWednesday will still be there on Thursday.For this reason, saving files is an extremely important function of computer applications. To save a web page, follow these steps:

1. Withthewebpageopen,clickonthefilepull-downmenu.

2. Selectthelocationwhereyouwanttostorethefile.
3. Givethefileanappropriatename.
4. Clickthesavebuttoninthedialogbox.

Note:Whenyousaveawebpage,allyouaresavingisthehtmlcode.Thegraphic that were on the original site will be missing.

AddingLinkstotheFavoritesMenu

When you are searching on the Internet, you will undoubtedly find certain sites that youwillwishtovisitoften.Youcanaddthesesitestoalistof"favorite"sites.Thisis alsocalleda*bookmark*.Bookmarksontheinternetarejustlikebookmarksinabook. The mark your place.

Toaddawebpagetoyourlistoffavorites,followthesesteps:

1. Whileviewingthepageyouwishtobookmark,clickonthe"favorites" pulldown menu.
2. Select"AddtoFavorites".
3. Inthenamebox,typethenamethatyouwishInternetExplorertouseinyour list of favorites.
4. ClickOKandthissitewillbeaddedtoyourlistoffavorites.

AccessingtheFavoritesMenu

To viewa page that you have listedas afavorite, simplyclick on the"Favorites" button on the standard toolbar and select the webpage that you wish to go to.

WebFrameworkDreamweaver

Dreamweaverisawebauthoringprogramthatusesa→↔SI→↔G"whatyouseeiswhat you get" interface. The HTML code is being created and is accessible to you if you want toplaywithit.

Finally,let'sgetstartedwithDreamweaver.

Launch Dreamweaver

1. StartDreamweaver.Youshouldseeastartup screen.3 DreamweaverletsyoupublishyourWebsitebyeasilyuploadingyourWebsitetoa →ebserver.Rightnowwewon'tbeworryingaboutthat.Fornow,youwillbecreating andviewingyoursitelocally(whichmeansthesitewillbelocatedonyourcomputer).

Weneedtodefineyoursite:

CreateaNewSite

2. FromtheSitemenu,chooseManageSites…TheManageSitesBoxshouldappear.
3. ClickNewandthenchooseSitefromthepop-upmenu.
4. ClickontheAdvancedTabunderSiteDefinitionforUnnamedSite1.

LocalInfo

LocalInfoiswhereweputintheinformationaboutthefilesthatareonyourlocalcomputer (which is where all your files are or will be for now).

5. IntheAdvancedTab,underCategory,chooseLocalInfo.4
6. NexttoSiteName,type:MyFirstDreamweaverWebsite.Youwillusethisnamewhen yougointoDreamweavertoretrievethefilesassociatedwiththissite.Thisnamehas to be unique within Dreamweaver.
7. NexttoLocalrootfolder,clickontheyellowfoldericontobrowseforwhereyouwant

tostoreyourwebsiteonyourlocalcomputer.Youmaywishtocreateanewfolderto

sore your files in. I stored my Web site on F: (my flash drive) in a folder I called My Website. This is now your Root Folder

8. Click DONE. You should see a Files panel on the right side of your screen. The Local View in the Files Panel will display all the files for your Web site that are in the Root Folderonyourcomputer.Laterwewilladdinformationaboutconnectingtotheserver. The Remote View shows which files have been uploaded to the server.

9. Oncewe'veenteredallthisinformationaboutlocalandremoteservers,itwillbesetup forusnexttimeweuseDreamweaveronthiscomputer.←nfortunately,itdoesn'twork thatwayon lab computers. If youmove to another computer,youwill have to set up your Web site on the new computer as well. 5

WHAT'SAROOTFOLDER?

The local root folder is where you will keep ALL the files for your web site. You can createsubfoldersunderit,butconsiderittobetheparentofallparentfolders.↔ou'll keep all of the files and subfolders for your Web site (including html pages, images, multimediafiles,etc.)eitherintherootfolderorasubfolderundertherootfolder..

MakingyourfirstWebPage:

10. UndertheFilemenuatthetop,chooseNew.

11. In the NewDocument dialog box, make sure you have BlankPage selected, the Page Type is HTML, and the Layout is <none>.

12. Click Create.YoushouldnowseeablankWebpageintheDocumentWindow.

13. UndertheFileMenu,chooseSave.

14. IntheSaveAsbox,findyourWebsitefolderandsaveyourfileasindex.html

15. ClickSave.IntheFilespanel,youshouldnowseeindex.html.Congratulations!↔ou've created your first →eb page using Dreamweaver. ←nfortunately, it's pretty boring at the moment.

SavethePage

RULESOFTHUMBfornamingwebfiles:

- Donotusespacesorspecialcharacters,suchasthosefoundaboutthenumberkeyson the keyboard, in your file names. You can use dashes and underscores. (e.g., my_page.html)

- Always use a 3- or 4-character file extension for every file you use on the Web. In the case of a regular Web page, always use .html or .html.

- Be very specific about capitalizing because most Web servers are case-sensitive.

Give yourWeb Page a Title In the document toolbar, find the Title box.

16. Onthedocumenttoolbar,locatetheTitlefield.6

17. Typeinatitleforyourpage.Feelfreetobecreative(butnotindecent).HitEnter.

18. The title doesn't show up on the page, but will appear in tabs and across the top of browsers. Adding Some Content Add Content to the Page

19. In the Document window, type in a good title. This one will be the head of yourWeb page.Ifyoucan'tthinkofanything,youcanalwaysuse,"AardvarkAdoptionSocietyof Delaware".

20. Add a subtitle. Again, it can be anything you want. If you'd prefer, it could be, "→e speak for Aardvarks who can't speak for themselves."

21. Nowthatyou'vegotagoodtitle,addsomecontent.Logically,itshouldgowiththetitle. Typeoneortwolinesnowfornow.→e'lladdmorelater.(Ifyoucan'tthinkofanything, feel free to throw in some of the Aardvark content).

Nowlet'sformatthecontent:

22. OntheWebpage,highlightthetitle.

23. In the PropertyInspector, click on the Formatdrop down arrow, and choose Heading 1.

Note:IfyoudonotseethePropertyInspector,chooseWindow>>Properties.

24. Onthewebpage,highlightthesecondlineoftext.

25. FromtheFormatmenuonthePropertyInspector,chooseHeading2.

Note:Whenformattingyourtext,keepinmindthattextsizesinHTMLarerelativesizes. Thismeansthat,whenyourpageisviewedinabrowser,thetextsizewilldependonthe default text size settings on each user's computer. Relative sizes give users the

abilitytoadjustthetextsizetosuittheirindividualneeds.
Thisoptionisespeciallyimportantforpeoplewithvisualimpairments,butitmeansthat theappearanceofyourpagesmayvaryfromcomputertocomputer.PlayingwithFont Properties

26. HighlighttheSubtitle.Changethefontsizeto24.7

27. Highlight any word on the page and click the Bold icon ( ) on the Property Inspector. The selected word appears bold.

28. Highlight the title click the gray square to the right of the Size popup menu in the Property Inspector. A grid of colored squares appears, and the cursor changes to an eye dropper.

29. Click the eyedropper on the desired color. The field to the right of the color swatch reflects the code →eb browsers need to correctly display the color you've chosen.

30. Clickanywhereonthepage to deselectthetext. The previouslyselectedtextappears in the new color.

Alignment

31. 1.Highlightthetitleandsubtitleonthepage.

32. Click the Align Center button ( ) on the Property Inspector. The titles should now be centered on your page.

CreatingLists

33. Firstweneedtoaddalist.8

34. Typeinatitleforyourlistandthentypeinalistofitems.Makesuretherearеatleast 3itemsinyourlist.Makesureyouhitreturnaftereachitem.(Feelfreetousealistfrom the aardvark homework if you can'tthink of your own.)

35. Highlight the list title and choose Heading 3 from the Format menu on the Property Inspector.

36. HighlightthelistitemsandclicktheUnorderedListbuttononthePropertyInspector.
37. Theitemsappearasabulletedlist.

38. NowtypeinanotherListtitleandanotherlistofitems.

39. HighlightthetitleandselectHeading3.

40. Highlight the rest of the items and click the Ordered List button on the Property inspector(nexttotheorderedlistbutton).Theitemsshouldnowappearinanumbered list.

41. Saveyourwork.Getintothehabitofsavingyourworkregularly.

Page Properties

In this section you will learn how to set your page's background color, as well as the defaulttextandlinkcolors.Thesesettingsdifferfromwhatyou'vedonesofaronthe PropertyInspectorbecausethey'llapplytoallthetextandlinksonthepage—notjust a selected piece of text.

42. FromtheModifymenuatthetopoftheworkspace,choosePageProperties.

43. Tochangethetextcolor,clickthebottomrightcornerofthetextcolorbox.

44. Usingtheeyedropper,chooseacolorbyclickingonanyofthecolorswatches.

45. Similarly, you can change the background color for the page using the Background color setting. 9

46. Youcanalsochangethecoloroflinks,activelinks,andvisitedlinks.Anactivelinkisa linkjustwhentheuserclicksit.Acolorchangeletstheuserknowthats/heclickedon

alink.Avisitedlinkisonethattheuserhasalreadyclickedonandvisited.Acolor change lets the user knows /he's already visited that link.

47. Select"Links"fromtheCategorymenuatleft,thenmakeyourselectionsforlink,visited link, and active link colors as you did in Step 3.

48. ClicktheApplybuttontoseehowyourcolorchoiceslookontheindexpage.ThePage Properties dialog box will remain on the screen.
49. →henyou'resatisfiedwiththecolorsyou'vepicked,clickOK.

Note:Youcanaddabackgroundimageifyouwant.Browsetofindanimagebythe background image.

See what it looks like. Now you know that's an option. →e'll talk about this option more later. For now, go back to a solid color background.

Note: If you changed the colorforanytext usingthe PropertyInspector,those changes will override general page color choices.

WebPage Preview

As you create a page in Dreamweaver, the page may not look exactly like it would in abrowser. To preview the page in a browser:

50. ChooseFile>>PreviewinBrowser>>i.e.explorerorNetscapeorpresstheF12key. Awebbrowser,suchasNetscapeorInternetExplorer,opensandloadsthewebpage.

51. Takealookatyourpagetoseehowitwillappearontheweb.

52. Whenfinished,closethebrowserandswitchbacktoDreamweaver.

NOTE: Colored or underlined text can be mistaken for links. Choose your color schemesothatthelinksstandoutfromrestofthetext.Thetextandlinksalsoshould standoutfromthe background forreadability.Whenselectingcolors, keep itsimple. Too many colors can be distracting or confusing.

AddingImages

Note:Anyeditingorresizingofanimageshouldbecompletedbeforeitisaddedtoaweb page.

53. Firstyouneedanimage.Feelfreetofindoneonyourownthatsuitsthethemeofyour webpage.Ifyoudon'tfeellikeit,I'veincludedanimageonmy→ebsitethatyoucan download.

54. Next,addittoyourWebpage.
55. Placeyourcursorbelowthesub-headerinyourdocumentandpressEntertwice.

56. 2.ChooseInsert>>Image.TheSelectImageSourcedialogboxwillappear.

57. 3.Usingthedialogbox,locateandselectanimage,thenclickOK.10

58. 4.Youwillfirstencounterapromptttoaddaccessibilityattributes:

59. TypeabriefdescriptionoftheimageintheAlternatetextbox,thenclickOK.

60. Becauseyou'retryingtouseafilethatliesoutsideyourrootfolder(mywebsite),you'll receive the following message:

61. ClickYes.TheCopyFileAsdialogboxwillappear.

62. ClicktheSavebuttontoplaceacopyoftheimagefileinsideyourmywebsitefolder.

63. Theimagewillappearonyourwebpage.

64. ClicktheRefreshbuttonontheFilespanel()andtheimagefilewill appearinthelist of local files.

Delete an Image

65. IntheDocumentwindow,clickontheimagetoselecttheimage.

66. PresstheDeletekey.Theimagedisappears.

67. To reverse the deletion, use the Undo command. From the Edit menu, choose Undo. The image should re-appear on the page.

CreateaSecond Page

Next,youwillcreateasecondpageforyourWebsite.

68. FromtheFilemenu,chooseNew…TheNewpagedialogboxappears.

69. ClicktheCreatebutton.Thenewfilewillappearinthedocumentwindow.

70. Saveyournewpageinthemywebsitefolderas Page2.html
71. IntheTitlefield,typeanappropriatetitleforthispage.→e'lleventuallymakeitintoa Calendar of Events Page, if that helps you decide on a title.

72. Saveyourwork.

PagePlanning:WhenplanningyourWebsite,youwillneedtodecidehowtoorganize each Web page. What will be placed on each page? Divide your site into pages for simple access. If your readers want to read or print only a calendar of events, you don't want them to have to print the entire site to see it. Your site planning will also include how the pages will be linked together.

Page Navigation

Nowthatwehavetwopages,youcanlinkthemtogether.→e'lllinktheindex.htmlpage to the Page2.html and vice versa. It's easy in Dreamweaver!

73. UsethetabsontheDocumenttoolbartotogglebacktotheindexpage.

74. Ontheindexpage,typesomedescriptivetextthatdescribesyourPage2.html.

75. Highlightthetextyouwanttomakealink.

76. IntheProperty Inspector,clickontheBrowseforFileicontotherightofthelinkbox. A Select File dialog box appears. 12

77. Usingthedialogboxlocateandselectthefile Page2.html.

78. ClicktheOKbutton.Cool!Youjustmadealink!

79. Theselectedlinkedtextisunderlinedandappearsinthelinkcoloryouchose.Inthe Property Inspector, the Link field reads: "Page2.html

80. Saveyourworkandpreviewthepageinabrowser.

81. Testthelink.Whenfinished,returntoDreamweaver.

82. Now,trylinkingPage2.htmlbacktotheindexpage.

83. Saveyourworkandtestthenewlinkinabrowser.

Note:Thetextyouuseforyourlinkshouldbebriefbutdescriptive,givingyourvisitorsan idea of where the link will take them even before theyclick it.

Let'scompare:clickhereformoreinformationlacksdetail.

ComparedtoCalendarofUpcomingEvents,whichisclear andconcise?

84. LinktoaWeb Page

85. Nextlet'saddanexternallink.BythatImeanlet'slinktoa→ebpagethatislocated somewhereonthe→orld→ide→eb.→e'llneedtousethefull(absolute)←RLtolink to this page.

86. Gotothebottomofyourindex.htmlpageandtype"MoreinfoonAardvarks".

87. Highlightthetextyoujusttyped.

88. IntheLinkboxinthePropertyInspector,typehttp://en.wikipedia.org/wiki/Aardvark/ and press Enter.

89. The text you selected should now link to →ikipedia's web page on Aardvarks. To make sure the link works properly, preview the page in a browser.

90. SwitchbacktoDreamweavertocontinueeditingyourpage.

AddanE-mailLink

Now you'll make your e-mail address a link so that visitors can send you questions andcomments via email.

91. Atthebottomofyourpage,type"Sendmeanemail"andhighlightthewordemail.

92. From the Insert toolbar (across the top, below File Edit, etc.), click on the envelope icon to insert an email link.

93. PlaceyourcursorintheE-mailboxandtypeyouremailaddress:

94. HitOK.Youre-mailaddressappearsasalink.
95. Save your work. Please note that the email link will try to open a desktop email programifyouhaveoneonyourcomputer.However,ifthecomputeryou'reworking on doesn'thave an email program set up, testing this link won't work.

Note:OneoftheadvantagesincreatingacourseWebsiteisaddingappropriatelinks to other sites on the Web. You may want to compile a list of links that support your instructional goals. This allows you to supplement your page with appropriate Web resources. Plus it's always fun to look around at other relevant pages to learn new things about your topic and create your own relevant Webliography.

Creatinga Linkwithin aPage

CreatetheTargetofthelink

96. Placeyourcursoratthetopofyourpage

97. ChooseInsert>>NamedAnchor.TheNamedAnchordialogboxwillappear.

98. IntheAnchorNamebox,typeanamefortheanchor.Thisshoulddescribethecontent in that section of the page.

99. ClickOK.Ayellowanchorwillappearjustbeforethetext.Iftheyellowanchorsymbol does not appear, then choose View >> Visual Aids >> Invisible Elements.

Create alinkto the anchor

100. Atthebottomofthepage,type"BacktoTop".Highlightthistext.

101. On the Property Inspector, click on the point-to-file icon to the right of the Link field and drag it to the schedule anchor symbol. (You literally click on it and, without releasing the mouse, drag it over the anchor symbol in your Web page).

As the arrowhead moves over the anchor, the anchor name preceded by the pound sign(#)willappearinthe linkfield.Theselectedtextisnowalink,andisunderlined with a different text color.

Theformthatthistypeoflinkusesisdifferentfromastandardlink.Inthelinkfield,a poundsignappearsfollowedbythenameoftheanchor.The#(poundsign)indicates that the link is to an anchor on the Web page.

Note:WhenplanningyourWebsite,youwillneedtodecidehowtoorganizelinksbetween all the pages.

Agoodpracticeistoplacelinkstootherpagesatthetopandthebottomofeachpage. Also, each page should be linked to your home page (index.html).

PageLayoutwith Tables

We can use Tables to lay out the format of text and images. A table has rows and columns and may be used for layout in a number of ways, including placing text or images side by side on a page. In this section, you'll make a table that shows the Calendar dates and events for an Aardvark Sanctuary.

Create a Table

102. PlaceyourcursoratthetopofPage2.htmlafterthetext.Now,you'llinsertatablewith 3 rows and 2 columns.

103. FromtheInsertmenu,chooseTable.TheTabledialogboxappears.

104. UnderTablesize,adjustthesettingsasfollows:

Rows=3

Columns=2

Table width = 75 %

Borderthickness=115

105. ClickOK.Thetablewillappearonyourpage.

106. Placeyourcursorintheupper-leftcellofthetableandtype:"ScheduleofEvents"

107. Onthesecondrow,intheleft-handcelltype:Date

108. Pressthe[Tab]keytomovetothenextcellinthetable.

109. Type:Event

110. Pressthe[Tab]keyagaintomovetothenextrow.

111. Type in a date. Move to the next cell, and type in a description of an event. As you type in a long paragraph, the words wrap within a cell.

112. PresstheTABkey,andanewrowisautomaticallyaddedtothetable.Enterthedate and event description in the fourth row.

MergeCells

We want the Schedule of Events to be centered across the entire table. To do that, we first need to merge the two top cells in the table.

113. Clickanddragyourcursorfromlefttorightacrossrow1.↔ou'llnowmergethosetwo cells into one.

114. Choose Modify >> Table >> Merge Cells. Now, in row 1, you should see one large cell.

Insert anImage

115. Place your cursor in the right-hand cell of the last row. Press the [Tab] key to add a new row.

116. Placeyourcursorintheright-handcellofthatnewrow.ChooseInsert>>Image.The Select Image Source dialog box appears.

117. Navigate to an image – either one you've downloaded and is on your flash drive or one from my Web site that you can download.

118. ClickOK.Theimageyouchosewillappearinthetablecell.

Addanewrowtothetable.

Afteryouhavecreatedatable,youmayneedtoaddinformationinthemiddleofthetable. You can

add rows or columns to expand the table.

119. Clickinthethirdrowofyourtable.

120. ChooseModify>>Table>>InsertRow.

Anewrowappearsinthetable.

121. Click in the second column of the new row and insert another image (your choice).
The image appears in the cell.

122. Clickinthecelltotheleftoftheimageandtypesomerelevantinformationinthecell.

Delete arow

Thetablecanalsobeadjustedbyremovingunnecessaryrowsorcolumns.

123. Clickinthesecondrowofyourtable.

124. From the Modifymenu, choose Table, and then choose Delete Row. The rowand its contents are deleted. Table

Resizecolumnsandrows

Dependingonthecontentyouaddtoyourtableyoumightfindthatcolumnsaretoowide or narrow.

Youcanadjustthecolumnwidthtobetterfitthecontentinyourtable.

125. Placethecursoroverthelinedividingthecolumns.Thecursorturnsintoatwoheaded arrow.

126. Clickanddragthetwo-headedarrowtowardtherighttothemiddleofthetable.The columns are re-sized.

127. Placethecursorovertherightsideofthetable.Clickanddragthetwo-headedarrow to resize the table again.

128. Saveandpreviewthepage.

Try changing the size of the browser window. Notice that the table size changes as thebrowserwindowsize changes –why? The reasonthetable sizeisnot constant is because the widthof the table isexpressedas apercentageof the totalwidth of the browserwindow,inthiscase,75%.Ifyouwishtolockthetabletoaspecificsize,you have to express the table dimensions differently.

Table dimensions can also be expressed as fixed using "pixels". A pixel is a single point in a graphic image. Screens are divided into thousands (or millions) of pixels, arranged in rows and columns. On a 17 →eb page, a recommended pixel size for a table's width would be no higher than 600. (Assuming a screen resolution of 800 x 600).

When your table is selected, youcanview andchange the table widthontheProperty Inspector.

Experimentwith cellcolor andother options

129. Toaddbackgroundshadingtoacellorrow,selectthecell(s)andclickonthebottom corner of the Bg color box on the Property Inspector

130. Clickonaswatchwiththeeyedroppertochooseacolor.

131. Try various formatting options for the rest of the table using the Property Inspector. Change the size, coloror style of the text, and trythe alignment options.

132. Saveyourworkandpreview.

LANGUAGEC&C++

PROGRAMMINGLANGUAGE C

WhyweuseLanguage?

Weuselanguageduetofollowingreasons:

- Itstoresdata
- Howtointeractbetweeninputandoutput
- Theoperatorusestotransformandcombinedata.

WhatisC?

By 1960 languages come into existence. COBOL was being used for commercial purposes, FORTRAN for Engineering and Scientific applications. An International committee was setup to develop languages. This committee came out with a language called ALGOL60. ALGOL-60 never really became popular because it seemed tooabstract, too general. To reduce the abstractness and generality a new language called Combined Programming Language (CPL) was developed at Cambridge University. CPL wasan attempttobringALGOL60newversion,butCPL turnedouttobe sobig,having so many features, that it was hard to learn and difficult to implement. BCPL (Basic Combined Programming Language) developed by Martin Richards at Cambridge University aimed to solve this problem by bringing CPL down to its basic good features. Butunfortunatelyitturnedtobelesspowerfulandtoospecific.DennisRitchieinheritthe features of CPL and BCPL and made a language named C. C forms the basis for many advanced, highly powerful and effective programming languages. C is a programming language developed at AT&T's Bell Laboratories of ←SA in 1972. It was designed and writtenbyamannamedDennisRitchie.InthelateseventiesCbegantoreplacethemore familiar languages of that time like PL/I, ALGOL etc. No one pushes C. C seems so

popular,becauseitisreliable,simpleandeasytouse.TheconceptofCderivesitsorigin

from a primitive form of C which was called Basic Combined Programming Language (BCPL) developed by Ken Thompson of Bell Laboratories which he referred to as 'B'. By now it might not be difficult to guess that a name as cryptic as C was conferred to it because it was considered to be a modified more adaptive successor of "B". C's compactness and coherence is mainly due to the fact that it's a one man language.

CBasics

BeforeweembarkonabrieftourofC'sbasicsyntaxandstructureweofferabriefhistory of C and consider the characteristics of the C language.

In the remainder of theChapter we will look at thebasic aspects ofC programs suchas C program structure, the declaration of variables, data types and operators. We will assume knowledge of a high level language, such as PASCAL.

ItisourintentiontoprovideaquickguidethroughsimilarCprinciplestomosthighlevel languages. Herethesyntaxmay be slightlydifferentbutthe concepts exactlythe same.

Cdoes haveafewsurprises:

- Many High level languages, like PASCAL, are highly disciplined and structured.
- Howeverbeware--Cismuchmoreflexibleandfree-wheeling.Thisfreedom gives C much more power that experienced users can employ. The above example below (mystery's) illustrates how bad things could really get.

CharacteristicsofC

Webrieflylist some ofC's characteristicsthatdefine thelanguageand also have leadto its popularity as a programming language. Naturally we will be studying many of these aspects throughout the course.

- Smallsize
- Extensiveuseoffunctioncalls
- Loosetyping--unlikePASCAL
- Structuredlanguage
- Lowlevel(Bitwise)programmingreadilyavailable
- Pointerimplementation-extensiveuseofpointersformemory,array, structures and functions.

C has nowbecomeawidelyusedprofessional languagefor various reasons.

- Ithashigh-levelconstructs.
- Itcanhandlelow-levelactivities.
- Itproducesefficientprograms.

- Itcanbecompiledonavarietyofcomputers.

Featuresof C	
LowLevelLanguageSupport	ProgramPortability
PowerfulandFeatureRich	BitManipulation
HighLevelFeatures	ModularProgramming
EfficientUseof Pointers	

FeaturesofCProgrammingLanguage:
CProgrammingiswidelyusedinComputerTechnology;WecansaythatCProgramming is inspiration for development of other languages. We can use C Programming for different purposes. Below is some of the Features of C Programming language -

1. LowLevelFeatures:

1. C Programming provides low level features that are generally provided by the Lower level languages. C is Closely Related to Lower level Language such as "Assembly Language".
2. ItiseasiertowriteassemblylanguagecodesinCprogramming.

2. Portability:

1. C Programs are portable i.e. they can be run on any Compiler with Little or no Modification
2. CompilerandPreprocessormakeitPossibleforCProgramtorunitonDifferentPC
3. **Powerful**

1. Provides→ideverityof'DataTypes'
2. Provides→ideverityof'Functions'
3. ProvidesusefulControl&LoopControlStatements
4. **Bit Manipulation**

1. C Programs can be manipulated using bits. We can perform different operations at bit level. We can manage memory representation at bit level.
2. It provides wide verity of bit manipulation Operators. We have bitwise operators to manage Data at bit level.

5. HighLevel Features:

1. It is more Userfriendlyas comparetoprevious languages. Previouslanguages such as BCPL, Pascal and other programming languages never provide such great features to manage data.
2. Previous languages have theirpros and consbut CProgrammingcollectedalluseful features of previous languages thus C become more effective language.

6. ModularProgramming

1. Modular programming is a software design technique that increases the extent to which software is composed of separate parts, called modules
2. CProgramConsistofDifferentModulesthatareintegratedtogethertoformcomplete program

7. EfficientUseofPointers

1. Pointershavedirectaccesstomemory.
2. CSupportsefficientuseofpointer.

C Program Structure

ACprogrambasicallyhasthefollowingform:

- PreprocessorCommands
- Typedefinitions
- Functionprototypes--declarefunctiontypesandvariablespassedto function.
- Variables
- Functions

Wemusthaveamain()function. A

function has the form:

typefunction_name(**parameters**)

```
{
        localvariables

        CStatements

}
```

If the type definition is omitted C assumes that function returns an **integer** type. **NOTE:** This can be a source of problems in a program.

SoreturningtoourfirstCprogram:

```
/*Sampleprogram*/

main()
{

printf(``ILike Cn");
exit ( 0 );

}
```

NOTE:

- Crequiresasemicolonattheendofeverystatement.
- printfisastandardCfunction--calledfrommain.
- nsignifiesnewline.Formattedoutput--morelater.
- exit() is also a standard function that causes the program to terminate. Strictlyspeakingitisnotneededhereasitisthelastlineofmain()andthe program

will terminate anyway.

Letuslookatanotherprintingstatement:
printf(``.n.1n..2n...3n");The

output of this would be:

.
.1
..2
...3

C Keywords

Keywordsarethesetofpredefinedwordswhosefunctionalityhasbeenexpressedtothe compiler and whenever called upon they furnish their task with utmost comfort. The keywords cannot be used for any function other than what it is defined for, not even as variablenames.Thiscodeofconductitwillresultingivinganewmeaningtothekeyword, whichisnotpermissiblebythecomputer.Thereare32keywordsinCwhichareusedat various points in a program to launch the proficiency of the language.

C Instructions

Thedifferenttypes ofconstants,variables and keywords thenext logical stepisto learn howtolearntheyarecombinedtoforminstructions.Therearefourtypesofinstructionin C:

- **Type DeclarationInstruction**
- **Input/Output Instruction**
- **ArithmeticInstruction**
- **Control Instruction**

Type Declaration Instruction: We can declare the type of variables used in C Program by using this instruction. Any variable used in a program must be declared before using itanystatement.Thetypedeclarationstatementusuallywrittenatthebeginningoftheprogram.

```
int EmpCode; float
Bsalary;
charEmpName
```

Input/OutputInstruction:We can perform the function of supplying input data to a program and obtaining the output results from it.
Arithmetic Instruction: We can perform arithmetic operations between constants and variables.
Control Instruction:Wecancontrolthesequenceofexecutionofvariousstatementsin a C program.

Variables

Aprogramismadeofdataandinstructionstomanipulatethosedata.Notethatdatahave to be stored somewhere, and thus will need some memory space in the RAM.

A variable is an entity that is used to store data. Without variables, there is no way (or actually NO PLACE) to store data. A variable has

- aname(morespecificallyasymbolicname)
- anassociatedphysicalmemoryspace(portioninaRAM)
- adatatype
- avalue(dependsondata type)
- ascope
- a lifetime

Howdoyoudeclareavariable?

InC,thesyntaxfordeclaringavariableisasfollows:

<variablename>

Thesymbol<item>meansthatitisrequiredtospecifytheitemenclosedwithinapairof angled brackets.A semicolonsignifiestheend of adeclaration.Amissingsemicolon will cause the compiler to generate a syntax error. Variables should be named following the C naming conventions.

Example:char

ch;

inti;float f;

double d;

It is possible to declare several variables of the same type on the same line. In such a case, a comma should be inserted between two variables. A missing comma will generate a syntax error.

Example:

charch1,ch2; int

x, y, z;

floathourly_rate,number_of_hours,salary;double

numerator, denominator;

BasicDataTypes

The languages of C support several types of Data, each of which is represented in a variedmannerwithinthememory.Thedatainthememorycanbeof integertypeorof character type or of integer with decimal points. Whenever an integer or a character is usedinaprogramthecomputershouldbeabletoidentifywheretostoreitinthememory. Thebasicdatatypesaredepictedinatabularformattogetabetterunderstandingofthe basics of C programming.

DataType	Description	Memory Requirement	Range	Format Specifier
Int long	whole numbers -	2 bytes 4 bytes	-32768 to +32767	%d,%i %ld
Char	Characters	1Byte	0to255	%c,%s
Float	Numbers with Decimals	4 Bytes	1.0E-37 to 1.0E+37	%f
Double	Numberswith	8Bytes	1.7E-308to	%lf

Int: The particular data type deals in storing only whole integer numbers and they are incapableofdealingwithfractionsornumberwithdecimals.Thenumberwhichtheycan deal with a range from -32768 to +32767. An int requires 2 bytes of memory by most computers.

Char : Thechardatatypeholdsindividualcharactersoralphabetsandtheyrequireonly 1 byte of memory. Most compilers permits a range of0 to 255 regarding the char data type.

Float: Afloatdatatypeisinvolvedinrestoringfloatingpointnumbersortoputitsimply, itisusedtostorenumberswithdecimalpoint.Thefloatdesires4bytesforstorageand has a fractional precision of 6 digits.

Double : A double data type is also used for the restoration of floating point numbers. Thedifferenceliesintheprecisionandstoragespace.Doubleoffersagreatprecision,of about15digitsandcompilerrequires8bytestostoreadouble.Therangeswithinwhich the float can be represented are 1.7 E - 308 to 1.7 E + 308 resp.

QualifiersUsedWithBasic Data Types

To expand the horizon of the basic data types, making it more flexible and adaptable to getintovarioussituationswithprecisenessandaccuracy.Thequalifiertaggedtothedata types are LONG, SHORT, SIGNED AND UNSIGNED. To make any data type a qualifier, the name of the qualifier has to be tagged before the data type.

Long : As the name suggests the qualifier long extended the range of the data type to whichitisprefixed.Itcanbeappliedtoonlytheintanddoubledatatypesanditexpands thespectrumofrangefromamaximumof2,147,483,647to-2.147,483,647.Alongint

requiresmemorythatismorethananordinaryintandthereforetakes4bytesforstorage. To make an integer a long qualifier just addsthe word long before it.

Short: Thisqualifierismostinterestingbecauseifanordinaryinthasthesamememory value asthatof longi.e. 4bytesa shortwillhave 2 bytes,butif anint hasmemoryof 2 bytes a short will have the same memory i.e. 2 Bytes.

Signed: By using signed data qualifier that data type can accommodate both positive andnegativenumbers.Whenavariableissignedithasthesamepositiveandnegatives range as a regular int. By default an int is a signed data type.

Unsigned: The qualifier unsigned is tagged mostly to int and it also has the same memory requirement as that of ordinary int i.e. 2 bytes. Unsigned integer have a range from 0 to 65535.**Constants**

ANSI C allows you to declare constants. When you declare a constant it is a bit like a variabledeclarationexceptthevaluecannotbechanged.Theconstkeywordistodeclare a constant, as shown below:

```
intconsta=1;const int
a =2;
```

Note:

- You can declare the const before or after the type. Choose one an stick to it.
- Itisusualtoinitializeaconstwithavalueasitcannotgetavalue**anyother way**.

The preprocessor #define is another more flexible (see Preprocessor Chapters) method to define **constants** in a program. You frequently see const declaration in function parameters. This says simply that the function is **not** going to change the value of the parameter.Thefollowingfunctiondefinitionusedconceptswehavenotmet(seechapters onfunctions,strings,pointers,andstandardlibraries)butforcompletenesofthissection it is included here:

```
voidstrcpy(char*buffer,charconst*string)
```

The second argument string is a C string that will not be altered by the string copying standard library function.

Operators inC :

Operatorscanbrieflybedefinedasthetoolsusedforsolvingvariousmathematical, conditional,relationalandlogicalproblems.Theoperatorsthatyouwillbedealingwith

are arithmetic operators, unary operators, relational and logical operators. The items in between which the operators are placed are called operands.

Arithmeticoperators:

Arithmetic Operators can be considered the main point of all the operators. Arithmetic operators are tools that help us in computing various mathematical operations.

Operators	Function Performed
+	Addition
-	Subtraction
*	Multiplication
/	Division
%	(Modulus)Findsthe remainder

UnaryOperators:

Therearetwotypesofunaryoperators:-

- **Theincrementoperator(denotesas'++')**
- **Thedecrementoperator(denotes as'--')**

Whentheincrementoperatorisprefixedtoavariablewhichholdsanintegeritincreases thevalueofthenumberbyone.Similarlythedecrementoperatordecreasesthevalueby one.

RelationalandLogicalOperators:

Operators	Significance
<	Lessthan
<=	Lessthanorequalto
>	Greaterthan
>=	Greaterthanorequalto
EqualityOperators	Significance
==	Equalto
!=	Notequalto
LogicalOperators	Significance
&&	And

||	Or
!	Not

Assignmentis=***i.e.***i=4;ch=`y';

Increment ++,**Decrement** --whicharemoreefficientthantheirlonghandequivalents, forexample:--x++ isfasterthanx=x+1.

The++and--operatorscanbeeitherinpost-fixedorpre-fixed.Withpre-fixedthevalueis computed before the expression is evaluated whereas with post-fixed the value is computed after the expression is evaluated.

Intheexamplebelow,++zispre-fixedandthew--ispost-fixed: int

```
 x,y,w;
       main()
       {
       x=((++z)-(w--))%100;
       }
```

Thiswouldbeequivalentto:

```
 intx,y,w;

main()

          {

      z++;
      x=(z-w)%100;
      w--;

       }
```

The%(modulus)operatoronlyworkswithintegers.Division/isforbothintegerandfloat division.Sobecareful.Theanswerto:x=3/2is1evenif xisdeclaredafloat!!

RULE:Ifbothargumentsof/areintegerthendointegerdivision.

Somakesureyoudothis.Thecorrect(fordivision)answertotheaboveisx=3.0/2or x=3/2.0or(better)x=3.0 /2.0.Thereisalsoaconvenientshorthandwaytoexpress

computationsinC.Itisverycommontohaveexpressionslike:i=i+3orx=x*(y+2) this canwritten in C (generally) in a ***shorthand*** form likethis:

$$expr_1\ op\ =\ expr_2$$

Whichisequivalentto(butmoreefficientthan)?

$$expr_1\ =\ expr_1\ op\ expr_2$$

So we can rewrite i = i + 3 as i += 3 and x=x*(y+2)asx*=y+2.

NOTE:thatx*=y+2meansx=x*(y+2)andNOTx=x*y+2.

Comparison Operators

Totestforequalityis==

Awarning: Bewareofusing``="insteadof``==",suchaswritingaccidentally if

(i=j).....

Thisisaperfectly**LEGAL** Cstatement(syntacticallyspeaking)whichcopiesthevaluein "j"into"i",anddeliversthisvalue,whichwillthenbeinterpretedasTRUEif `j` isnonzero. This is called **assignment by value** -- a key feature of C.

Notequalsis:!=

Otheroperators<(lessthan),>(graterthan),<=(lessthanorequals),>=(greaterthan or equals) are as usual.

Pointers

Csupportstheuseofpointers,atypeofreferencethatrecordstheaddressorlocationof an object or function in memory. Pointers can be dereferenced to access data stored at the address pointed to, or to invoke a pointed-to function. Pointers can be manipulated usingassignmentorpointerarithmetic.Therun-timerepresentationofapointervalueis typicallya rawmemoryaddress (perhapsaugmented byan offsetwithin-word field),but since a pointer's type includes the type of the thing pointed to, expressions including pointers can be type-checked at compile time. Pointer arithmetic is automatically scaled bythesizeof thepointed-todatatype.Pointersareusedformanydifferentpurposesin C. Text strings are commonly manipulated using pointers into arrays of characters. Dynamic memory allocation is performed using pointers.

StatementsinCLanguage

Cneedssomekindofmanagerialsystemwhichinstructsthecomputerwhatfunctionhas tobeperformedatwhichtime.Thecontrolstatementactasamanager.Youwillamaze at the functions the different control statements handle. For example in a program you may have a statement in which a multiplication operation is to be performed and in the next an addition operation and after the next line there may be a statement which may wantitselftoberepeated8timesandanotherstatementmaylikeitselftobeskippedand attendedtoatalaterstage.Alltheseconditionsaremanagedbythecontrolstatements.

Thesequencecontrolstructureisoneofthebasicuncomplicatedcontrolstatements.The idea is very simple. In the sequence control instructions the statements to be executed are done so in a serial manner one after the other. The C compiler first executes the openinglineandthenmovesontothenextandsoon.Inaserialfashionandthe entire program is executed in this manner.

ConditionalStatement

C program executes program sequentially. Sometimes, a program requires checking of certainconditionsinprogramexecution.Cprovidesvariouskeyconditionstatementsto check condition and execute statements according conditional criteria. These statements are called as 'Decision Making Statements' or 'Conditional Statements'.
FollowingsarethedifferentconditionalstatementsusedinC:

1. **If Statement**
2. **If-ElseStatement**
3. **NestedIf-ElseStatement**
4. **Switch Case**

IfStatement: Theifstatementcanbeusedtotestconditionssothatwecanaltertheflow of a program. Code:

```
#include<stdio.h>in
  t main()
{
        intmark;charpass;
        scanf("%d",&mark);
        if (mark>40)pass
        ="y";return0;
}
```

If-Else Statement: Theifstatementfirsttestsifaconditionistrueandthenexecutesan instruction and the else is for when the result of the condition is false. Code:

```
#include<stdio.h>int
main()
```

{

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```
        intmark;charpass;
        scanf("%d",&mark);
        if(mark>40)
        {
                pass = "y";
                printf("Youpassed");
        }
        else
        {
                pass="n";printf("You failed");

        }
        return0;
}
```

The SwitchStatement: Theswitchstatementisjustlikeanifstatementbutithasmany conditions and the commands for those conditions in only 1 statement. It is runs faster thananifstatement.Inaswitchstatementyoufirstchoosethevariabletobetestedand thenyougiveeachoftheconditionsandthecommandsfortheconditions.Youcanalso putinadefaultifnoneoftheconditionsareequaltothevalueofthevariable.**ForLoop, While Loop, Break and Continue**

Controlstructuresarebasicallyofthreetypes–

- **Sequence statements**
- **Iterativestatements**
- **Selectionstatements**

Sequence Statements : All the State in a program except the iterative & statements. They are generally the individual statements which perform the task of input, output, assignment declaration etc.

IterativeStatementisthoserepeatedexecutionofaparticularsetofinstructionsdesired numberoftimes.Thesestatementsaregenerallycalledloopsfortheirexecutionnature.

TypesofLoopingStatements:

Basically, the types of looping statements depend on the condition checking mode. Condition checking can be made in two ways as : Before loop and after loop. So, there are 2(two) types of looping statements.

- **Entrycontrolledloop**
- **Exitcontrolledloop**

1. **Entrycontrolled loop :**

Insuchtypeofloop,thetestconditionischeckedfirstbeforetheloopisexecuted.

Somecommonexamplesofthisloopingstatementsare:

- **while loop**
- **forloop**

2. Exitcontrolledloop:

In such type of loop, the loop is executed first. Then condition is checked after block of statements are executed. The loop executed at least one time compulsorily.

Somecommonexampleofthisloopingstatementis:

- **do-whileloop**

InClanguagetheiterativestatements(loops)canbeimplementedinthethreeloopsand they are

The For Loop Syntax-

```
for(initialization;condition; incrementation)
{
   ----------bodyofloop --------
}
```

ForLoopwillperformitsexecutionuntiltheconditionremainssatisfied.If thebody of the loop consists of more than one statement then these statements are made compound by placing the open and closed curly brackets around the body of the loop. For loop is a count loop. The initialization condition and incrementation may be done in the same statement. For loop will not execute at least once also if the condition is false at the first time itself.

TheWhileLoop

Syntax–

```
Initialization;
While(condition)
   {
    Body of loop;
Incrementation;
    }
```

In this loop, initialization, condition and incrementation is done in the three different statements.This loopsis count as wellas event loop. In caseof while loops the bodyof theloopwillconsistofmorethanonestatementbecauseeachtimeonestatementwillbe of incrementation. Hence the open and closed curly brackets are required.

Do-While LoopStatement:

ThethirdloopstatementavailableinCisdo-whilestatementsyntax:-Initialization;
Do
{
Body of loop;
Incrementation;
}while(condition)

AnintroductiontoArrays

The concept of arrays depends on other data types, which was meant to facilitate the storage of abundant amount of number and wasting an entire delivery of space in the memory.Itwouldbelikebuyingtwodozenbooksandultimatelyusingoneanddumping therestinthegarbage.Arrayscanbedefinedasacollectionofsimilarelements.Anarray of elementscanbe formedonlyif alltheelementsareofoneparticulardatatypei.e.all ofthemareeitherintegerorcharacterorafloatingpointnumber,buttherecannotexist an array which hosts an combination of these data types.

Advantageof Arrays

Theusageofarraysiscrucialtoanyprofessionalprogramming.Arraysjustmakethelife of aprogrammerabiteasier.Itrelieveshimof aburdenof havingtokeepnamingthe variables. An array is a single variable holdingmultiple data. Each data is referred to by itselementnumber,Ifforinstance,youwishtostorealistofItemsyoucouldjustname the variable 'item_code' and keep storing the data byreferring to item_code (1), item_code (2),item_code (3),.....etc.

ArrayDeclaration
Like other variables an array needs to be declared so that the compiler will know what kindofanarrayandhowlargeanarraywewant.Inourprogramwehavedonethiswith the statement**int sal [20] ;**

Hereintspecifiesthetypeof thevariable,justasitdoeswith ordinaryvariablesandthe word **sal**specifies the nameof the variable. The [20] howeveris new. Thenumber20 tells howmanyelements of the type **int** will be in ourarray. This numberis often called the"dimension"ofthearray.Thebracket([])tellsthecompilerthatwearedealingwith an array.

TypesofArrays

Thearrayisdividedintotwoparts:

- **SingleDimensionalArrays**
- **MultidimensionalArrays**

SingleDimensionalArrays:

The single dimensional arrays as the name suggested, handles only a single advance of

similarelements.Thatistosayyoucanonlyhaveonerowofelementsandthesizeofa

single dimensional array depends on the programmer. Basically the single dimensional arrays facilitate the accommodation of many similar elements in a single variable. The succeedingsectionsafterwhichyouwillhaveacloudlessviewofthesingledimensional arrays.

MultidimensionalArrays:

Themultidimensionalarraysaretwoormorearraysclubbedtogether.Theycanbeoftwo dimensional type or three dimensional types or more, but you can restrict the research only to two and three dimensional arrays. An example of the two dimensional arrays is the matrix because like the matrix the two dimensional arrays have two matrices one symbolizingtherowelementsandtheotherthecolumnelements.Thethreedimensional array is a shade different because the first arraylist the number of tables of the two dimensionalarrays.Therestofthetwoarraysaresimilartothetwodimensionalarrayin the sensethat one isfor the rowand the other is for the column.

ArrayInitialization

The initial step of declaring of an array is done. You have given it a variable name and also declared its size but upto this stage the array is empty. It is like a box without any book in it. Similarly declaration of variable is done but some values have to be passed into it. You must be aware of initializing ordinary variables but how do you initialize an array in which more than one value has to be initialized into one array variable.

EnteringData intoan Array:

Youhavedeclaredanarraybygivingitaspecificnameandsizeyoucantryandexplore the individualities of each element in the array, that is to say how each element is addressed in an array. Array element indexing always start with 0.

Number[0] 1st element
Number[1] 2ndelement
Number[2] 3rd element
Number[3] 4th element

Thismeansthat[0]willholdthefirstvalue,[1]thesecond,[2]thethird&soonIfyou wanttoaccessthefourthelementofthearray"sal"youhavetowritesal[3].

Cdescribestwodistinct methods:

a) **Static Initialization**
b) **DynamicInitialization**

Static:

Thearrayonceinitializedinthiscannotbealteredbytheuser.Thismeansthateachtime theprogram isexecuted,thesamevaluesareutilizedandtheycanbealteredonlyfrom thecode.Itdoesn'trequiretheusertoinputvaluesforthearray.Thistypeofinitialization isdoneatthetimeofthedeclarationofthearray.Thevaluetobeinsertedarementioned inthebracesintsal[4]={101,102,103,104,105};
inta[2]={201,202,320};

Inthestaticinitializationthenumberofvaluestobeallocatedinmentionedinthesquare bracketandtheelementismentionedinthecurlybraces.Theelementsareinitializedin a static mode.

Dynamic:

In static initialization you noticed that the elements of the array are initialized while declaringthearray,butthereisproblem.Ifyouwanttoalterthevaluesorifyouwantthe user to supply the values then static initialization will turn out to be a raw thing. That is wheredynamicinitializationtakescontrolofthereigns.Theusercanbeallowedtoenter the values of his choice into the array and when the program return the values are not retainedandtheycoverthewayfornewvalues.Dynamicinitializationcanbedoneusing the For Loop

```
for(i=0;i<=10;i++)
      {
       printf("Entervalues");
scanf("%d",&sal[i]);
      }
```

Arrayinsidethe Memory

Theelementstoredinaserialorderortheyarestoredrandomly. int sal [8] ;

Thestatementindicatesthatanarrayvariableistobecreatedwhichisofanintegerdata typeandthearraycanhold8elements.Inthememory16byteswillbereservedbecause each integer will be 2 Bytes long. The arrayis initializedwith some numbers, this array will host some unrelated numbers. Once the arrayis initialized the elements are stored in a continuous manner.

201 202 203 204 205 206 207 208

3112311431163118312031223124 3

The number entered by the user is registered in a successive pattern and each element takes 2 bytes. This is exactly how it represented in the memory of a computer. The number below the element location is the address of the location and each element has its unique address in the memory by which it is identified.

MultiDimensional Arrays:

Multi dimensional array requires separate brackets for each subscript. One dimensional arrayhasapairofsquarebrackets,atwodimensionalarraywillhavetwopairsofsquare brackets, three dimensional array three pairs of square brackets and so on.

TwoDimensionalArrays:

A two dimensional array can be visualized as an array below an array. Two dimensional arrays will have two pairs of square brackets.

Syntax:-datatypearrayname[statement1][statement2]

The two dimensional array is often referred to as a matrix. The statement one and two are the subscripts thatthe two dimensional array will hold. One will specifythe rowand expression, two will specify the column and they indicate the number of array elements associated with each subscript.

intA [4][2];

	Column0	Column1
RowNo0	4200	10
RowNo1	6500	20
RowNo2	7850	30
RowNo3	3450	40

ThustheelementinA[0][0]willbe1000andtheelementA[3][3]willbe40.Therestof the numbers can be figured by having a look at the above table. In the memory the elementareplacedinasequentialpatternsuchthattheelement[0][0]willbefirstfollowed bytheelementin[0][1]followedby[1][0]andsoon.

CharacterArrays

Cisalsoflexiblethatitextendsitsservicestocharacteralso.Itmeansthatarrayscanbe formedusingevencharacters.Onesucharrayof charactersiscalledstring.A stringisa collection of characters that are in a particular order.

charname[10]="Ankush" ;

Inthe above example name is an array with an element holding capacity of 10 and it holdsastringcalled"Ankush"Thefirstelementisstoredinthe[0]thpositionofthearray name.That is, the alphabet A will stored in the [0] th position , nwill be in the [1] st position and so on till [9]th element.

A doubt may arise that while the array can accommodate 10 values only 6 have been entered. What happens to the rest? Since only 4 values have been accommodated the 7th value will be a null character (\0) which represents the end of the string. This will placedautomaticallyattheendofthestringifanyofthearrayindexesarevacant.Ablank space cannot exist between any two characters while taking input from the user unless accompanied by a specific format specifier.

Strings

Agroupofintegerscanbestoresinanintegerarray.Similarlyagroupofcharacterscan bestoredinacharacterarray. Characterarrayaremanyatimealsocalledstrings.Most languagesinternallytreatstringsascharacterarrays,butsomehowconcealthisfactfrom the programmer. Character arrays or strings are used by programming languages to manipulate text such as words and sentences. A string constant is a one dimensional arrayofcharactersterminatedbyanull('\0')forexample,charname[]={'I','T','
T ','C','O','M','P ', '← ', 'T ', 'E ', 'R','
\0'}

Eachcharacterinthearrayoccupiesonebyteofmemoryandthelastcharacterisalways '\ 0 '. →hat character is this? It looks like two characters, but it is actually only one character,eitherthe \indicatingthatwhatfollows it is somethingspecial. ' \0 'is called nullcharacter.Notethat'\0'and'0'arenotsame.ASCIIvalueof'\0'is0whereasASCII value of '0 'is48It showsa waya characterarrayisstored in memory. Theelements ofcharacterarrayarestoredincontiguousmemorylocations.Theterminatingnull('\0')isimportant, because it isthe onlywaythe functionsthat work with a stringcan know wherethestringcanknowwherethestringends.Astringnotterminatedbya'\0'isreally a string, but merely a collection of characters.

WithCcompileralargesetofusefulstringhandlinglibraryfunctionsareprovided.

Function	Use
strlen	Findslengthofastring
strlwr	Converts a string to lowercase
strupr	Converts a String to Upper Case
strcat	Appendsonestringattheendofanother
strcpy	CopiesaString into Another
strcmp	Comparestwostrings
strdup	DuplicatingaString
strrev	ReversingaString

strlen ( )

This function counts the number of characters present in a string.

```
void main ( )
{chararray[]="Hello",new[20];
intsize, size1, size2 ;                printf("Entera
String " );          scanf ( " %s ",new ) ;
size = strlen ( array ) ;
                                       size1=strlen("
SoftBrainComputers                 " );
                                       size2=strlen(
new ) ;
printf("\nLengthofstring%sare%d",array,size);printf("\nLengthofSecond string %s
are %d " ,"SoftBrain
Computers",size1);
printf("\nLengthofThirdstring%sare%d",new,size2); getch( ) ;
}
```

strcpy()

This function copies the contents of one string into another. The base addresses of the source and target strings should be supplied to this function.

```
voidmain()
{
charsource[]="SoftBrainComputers";
chartarget[20],old[10],new[10];
```

printf(“EnteraString“);scanf(“%s”,

```
old ) ;         strcpy ( target, source) ;
                strcpy( new ,old ) ;
        printf("\nSourceStringare%sandtargetStringare%s",source,target);
  printf("\nSecondSourceStringare%sandSecondtargetStringare%s",old,new); getch ( ) ;
        }
```

On supplying the base addresses strcpy ( ) goes on copying the characters in source stringintotargetstringtillitdoesn'tencountertheendofsourcestring(' \0').Itisour responsibilitytoseetoitthatthetargetstring'sdimensionisbigenoughtoholdthestring meal, character by character.

strcmp ( )

This is a function which compares two strings to find out whether they are same or different.Thetwostringsarecomparedcharacterbycharacteruntilthereisamismatch or end of one of the strings is reached, whichever occurs first. If the two strings are identical, strcmp ( ) returns a value 0. If they are not, it returns the numeric difference between the ASCII values of the non-matching characters.

Function

A function is a self contained block of statements that perform a coherent task of some kind. Every C program can be thought of as a collection of these functions. Sometimes the interaction with this person is very simple sometimes it's complex.
You have atask which isalways performedexactlyin the same way... saya servicingof yourmotorbike.Whenyouwantittobedone,yougototheservicestationandsay"I's time, do it now↔ou don't need to give instructions, because the mechanic knows his job. ↔ou don't need to be told when the job is done. ← assumes the bike would be serviced in the usual way, the mechanic does.
AsimpleCfunctionwhichoperatedinmuchthesamewayasthe,mechanics.Wewillbe lookingattwothingsaprogramthatcallsoractivatesthefunctionandthefunctionitself.

```
voidmain ( )
        {message();
                printf("\nThanksafterreturnoffirstfunction"); getch
        ( ) ;
        }
        message()
        {
         printf("\n→elcometothefirstfunctionprogram");
        }
```

Note:

AnyCprogram containsatleastonefunction.
Ifaprogramcontainsonlyonefunction,itmustbe**main().**
InaCprogramiftherearemorethanonefunctionspresent,thenone(andonlyone)of thesefunctionsmust be main(),because program executionalways begins with **main ( ).**
Thereisnolimitonthenumberoffunctionsthatmightbepresentedina Cprogram.Each functioninaprogramiscalledinthesequencespecifiedbythefunction callsin**main( ).**

After each function has done its things, control returns to **main ( )**.When **main ( )** runs out of function calls, the program ends.

Functions maybedivided into threecategories.

- Without argumentswithoutreturnvalue
- Withargumentswithoutreturnvalue
- Withargumentswithreturnvalue

Withoutargumentswithoutreturnvalue

For functions of this type neither the caller function nor the called function takes any arguments. When a function is called the control jumps directly to the function and executesthestatementsthatarespecifiedwithinthecalledfunction.Afterthestatement is the called function isexecuted, the control returns to the mainprogram.

Withargumentswithoutreturnvalue

For function this the caller function transport some values to the called function or the functiondefinitelywherethesevaluesareusedforsomespecificfunctionorcomputation but once the computed value is found out within the called function the value is not returned back to the caller function .

With argumentswithreturnvalue

In this type of functions the values as the arguments are being passed into the called functions where theywill be computed and a definite result is relayed back to the caller function and the valuewill be printed from there.

Advantageof Functions:

Aprogrammercanidentifywhateveractionsareperformedrepeatedlyonvariousparts of the program, write them as a function and call the function from various part of the programwheneverneeded.Thisapproachavoidscodeduplication.Insteadofduplicating thesamecodeindifferentpartsoftheprogram,youjustwritethefunctiononceandcall it from different parts of the program thus reducing the executable file size and redundancy of code, making the maintenance of code easy.

In a multi tasking system like Unix there is a direct relationship between the amount of memory a program consumes and the speed with which it runs You will in general find that large programs which demand a lot of memory sluggish.

Breaking down your program into subroutines lends your program a structure. You can divide your task into multiple sub-tasks, develop a function for each sub task, and integratedthemintoasingleprogram.Onceafunctioniswrittenandcompletely tested, aprogrammercanexpectittosmoothlyfitinwiththerestoftheprogrammodules.Once afunctioniswritten,testedandfoundtobeworkingaspertheexpectations,thefunction canbeloadedintoalibrary,andcanbeusedinanalltogether differentapplication.This approach encourages code reusability.

Thetypesofvariablesare:

- LocalVariables

- Global Variables

LocalVariables:

The fact that main is a function and you can declare any number of variables within it. Soif aruleholdsgoodforonefunctionwhycan'titforotherfunctions?Itdefinitelycan.

You can declare a variable inside any function belonging to any size and type. Thus variables declared inside a function are called local variables and are valid and can be used within that function. The life of these variables exists until they are within the function. It is same as the value of particular variables in a program cannot exist for all the programs. Anyattemptto breakthe rules will result an error.

Global Variables:

BeforeyoucanaccuseCofbeinginefficientincertainareasitpopsupwithanalternative. The alternative for reducing the before mentioned problem is declaring the variables globally. The globalvariables areotherwise called externalvariablesandunlikethe local variableswhichareconfinedonlytothefunctionwhichhasthem,theglobalvariablescan beusedanywhereintheprogramTheglobalvariablesaredeclaredoutsidethemaini.e. before beginning the program and the values hold good throughout the program. The storage for global variables is in a fixed region of memory set aside for this specific purpose by the compiler. The effectiveness of declaring globally can be felt when many functions in a program use the same data.
Defining a variable as global is particularly advantageous because its value is made availabletoallotherfunctions.Buttheonlyriskfactorinvolvedinthisisthatifanyfunction manipulates or alter the global variable than any other function using the same variable at the same time gets the altered value.

Recursion in Functions

Recursioningeneraltermsmeansrepeatingitself.Arecursivefunctionisaprocesswhere thefunctioncallsitselfrepeatedlyuntilaparticularconditionissatisfied.Itismorelikethe loop conditions. But the difference lies in that each action or recursion is based in the result of the previous one.
A recursive result triggers the recursive action for the next result until the condition is satisfied.Foraproblemtobe solved recursivelythereareetwo conditionstobe satisfied. The problem must be written in a recursive form, the recursion must have a condition which seals the recursion.

Cprogramto checkoddor evenusingmodulusoperator

```
#include<stdio.h>m

ain()
{  intn;

   Printf("Enteraninteger\n");
   Scanf ("%d",&n);
```

```
  if(n%2==0) Printf
("Even\n");
  Else
    Printf("Odd\n");

  return 0; }
```

We can use bitwise AND (&) operator to check odd or even, as an example consider binaryof 7 (0111)when we perform7& 1theresultwillbe oneandyou mayobserve thattheleastsignificantbitofeveryoddnumberis1,so(oddnumber&1)willbeone always and also (even number & 1) is zero.

Cprogramtocheckodd orevenusingbitwise operator

```
#include<stdio.h>m

ain()
{  intn;

  printf("Enteraninteger\n");
  scanf("%d",&n);

  if (n& 1==1 )
printf("Odd\n");   else
printf("Even\n");
return 0; }
```

Findodd oreven usingconditional operator

```
#include<stdio.h>m

ain()
{  intn;

  printf("Inputaninteger\n");
  scanf("%d",&n);

  n%2==0?printf("Even\n"):printf("Odd\n"); return

  0; }
```

Cprogramto checkodd orevenwithout usingbitwise ormodulus operator

```
#include<stdio.h>m
```

ain()

```
{  intn;

   printf("Enteraninteger\n");
   scanf("%d",&n);

   if((n/2)*2==n)
printf("Even\n");    else
      printf("Odd\n");

   return 0; }
```

Incprogramminglanguagewhenwedividetwointegerswegetanintegerresult,For exampletheresultof7/3willbe2.Sowecantakeadvantageofthisandmayuseitto findwhetherthenumberisoddoreven.Consideranintegernwecanfirstdivideby2 andthenmultiplyitby2if theresultistheoriginalnumberthenthenumberiseven otherwisethenumberisodd.Forexample11/2=5,5*2=10(whichisnotequalto eleven),nowconsider12/2=6and6*2=12(sameasoriginalnumber).Theseare some logic which may help you in finding if a number is odd or not.

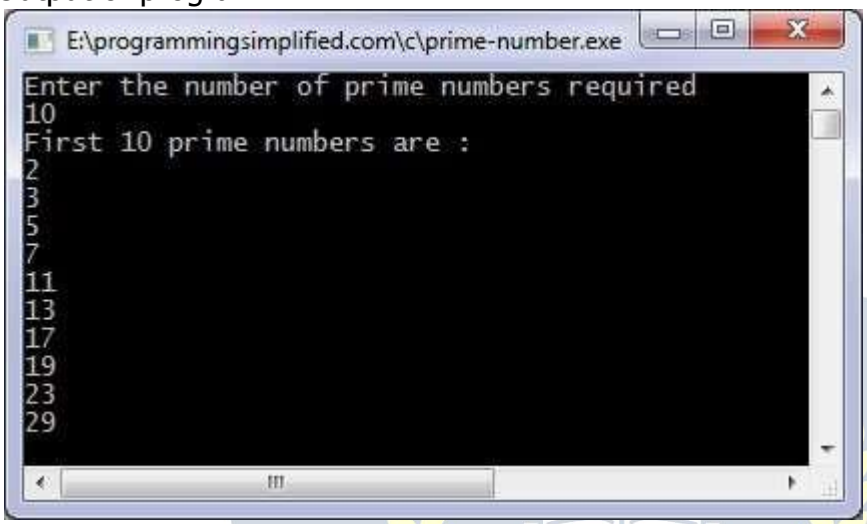
Primenumberprogram inclanguage

```
#include<stdio.h>in

t main()
{
   intn,i=3,count,c;

   printf("Enter the number of prime numbers required\n");
scanf("%d",&n);

   if(n>=1)
   {
      printf("First%dprimenumbersare:\n",n);
      printf("2\n");
   }

   for(count=2;count<=n;)
   {
      for(c=2;c<=i-1;c++)
      {          if(i%c
==0)
          break;
        }       if(c
  ==i)
      {
printf("%d\n",i);
```

```
count++;
```

```
    }
i++;
  }

  return0;}
```

DownloadPrimenumberprogram.
Output of program:



C program for primenumberor not

```
#include<stdio.h>m

ain()
{
  intn,c=2;

  printf("Enteranumbertocheckifitisprime\n");      scanf("%d",&n);

  for(c=2;c<=n-1;c++)
  {
    if(n%c==0)
    {
      printf("%disnot prime.\n",n);
      break;
    }   }
       if( c
== n )
    printf("%disprime.\n",n);

  return 0; }
```

C program for primenumberusing function

```
#include<stdio.h>
```

```
intcheck_prime(int);

main()
{
  intn,result;

  printf("Enteranintegertocheckwhetheritisprimeornot.\n");        scanf("%d",&n);

  result = check_prime(n);

  if(result==1 )
    printf("%d  is  prime.\n",  n);
else
    printf("%disnotprime.\n",n);

  return0;
}

intcheck_prime(inta)
{  intc;

  for(c=2;c<=a-1;c++)
  {
    if(a%c==0)
      return 0;
  }   if(c ==
a )     return
1; }
```

There are much logic to check prime numbers, one given below is more efficient thenabove method.

```
for(c=2;c<=(int)sqrt(n);c++)
```

Onlycheckingfrom2tosquarerootofnumberissufficient.There are much more efficient logic available.

PROGRAMMINGLANGUAGEC++

Introduction

Object-orientationisintroducedasanewprogrammingconceptwhichshouldhelpyouin developinghighqualitysoftware.Somepeoplewillsaythatobject-orientationis ``modern''.Whenreadingannouncementsofnewproductseverythingseemstobe ``object-oriented''. ``Objects'' are everywhere. In this section we will try to outline characteristicsofobject-orientationtoallowyoutojudgethoseobject-orientedproducts. Roughly speaking, we can distinguish the learning curve of someone who learns to

program:

- Unstructuredprogramming,
- proceduralprogramming,
- modular programming and Object-orientedprogramming.

Unstructured Programming

Usually, people start learning programming by writing small and simple programs consisting only of one main program. Here ``main program'' stands for a sequence of commands or *statements* which modify data which is *global* throughout the whole program.

Figure: Unstructuredprogramming.Themainprogramdirectlyoperatesonglobaldata.

Procedural Programming

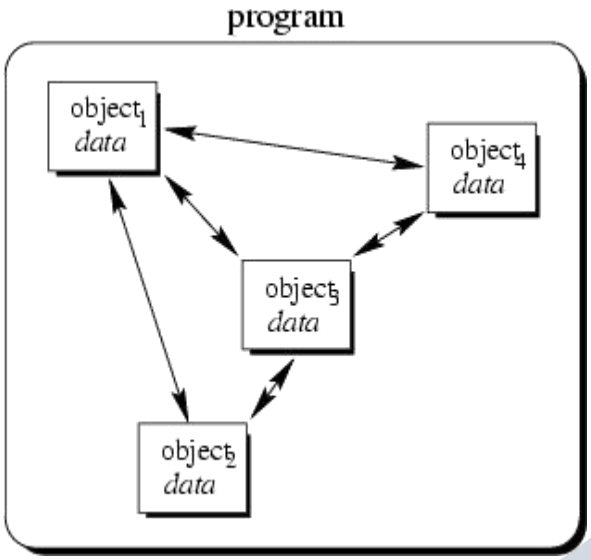
Withproceduralprogrammingyouareabletocombinereturningsequencesofstatements intoonesingleplace.Aprocedurecallisusedtoinvoketheprocedure.Afterthesequence is processed, flow of control proceeds right after the position where the call was made

ModularProgramming

With modular programming procedures of a common functionality are grouped together intoseparatemodules.Aprogramthereforenolongerconsists ofonlyonesinglepart.It isnowdividedintoseveralsmallerpartswhichinteractthroughprocedurecallsandwhich form the whole program.

Object-orientedprogrammingsolvessomeoftheproblemsjustmentioned.Incontrastto the other techniques, we now have a web of interacting objects, each house-keeping its own state.

Figure: Object-oriented programming. Objects of the program interact by sendi messages to each other.



AbstractDataTypes

Someauthorsdescribeobject-orientedprogrammingasprogrammingabstractdatatypes andtheirrelationships.ADTsareusedtodefineanewtypefromwhich instancescanbe created.ADTsprovideanabstractviewtodescribepropertiesofsetsofentities;theiruse is independent from a particular programming language.

Class

AclassisanactualrepresentationofanADT.Itthereforeprovidesimplementationdetails forthedatastructureusedandoperations.WeplaywiththeADTIntegeranddesignour own class for it:

```
class Integer { attributes:
  inti

 methods:
  setValue(intn)
  IntegeraddValue(Integerj)
}
```

Aclassis the implementation of an abstract data type (ADT). Itdefinesattributesandmethodswhichimplementthedatastructureand operations of the ADT, respectively. Instances of classes are called objects. Consequently,classesdefinepropertiesandbehaviorofsetsofobjects.

Object

Objectsareuniquelyidentifiablebyaname.Thereforeyoucouldhavetwodistinguishable objectswiththesamesetofvalues.Thisissimilarto``traditional"programminglanguages whereyoucouldhave,saytwointegersiandjbothofwhichequalto``2".Pleasenotice

theuseof``i"and``j"inthelastsentencetonamethetwointegers.Werefertothesetof values at a particular time as the state of the object.

Definition (Object) Anobject isan instanceof a class. It can be uniquelyidentifiedbyits name and it defines a state which is represented by the values of its attributes at a particulartime.The**behavior** ofanobjectisdefinedbythesetofmethodswhichcanbe applied on it.

Message

A running program is a pool of objects where objects are created, destroyed and interacting. This interacting is based on messages which are sent from one object to another asking the recipient to apply a method on itself. A **message** is a request to an object to invoke one of its methods. A message therefore contains

- the **name** of the method and
- the **arguments** of the method.

Inheritance

With inheritance we are able to make use of the a-kind-off and are-a relationship. As described there, classes which are a-kind-of another class share properties of the latter. In ourpoint and circleexample, we can define a circle which inheritsfrompoint:

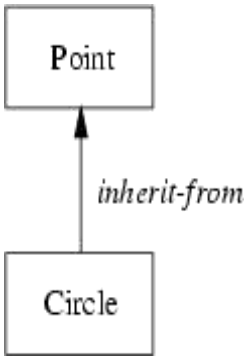
```
classCircleinheritsfromPoint{ att
ributes:        int radius

methods:
  setRadius(int                 newRadius)
getRadius()}
```

ClassCircleinheritsalldataelementsandmethodsfrompoint.Thereisnoneedtodefine them twice:We just use already existing and well-known data and method definitions.

Definition (Inheritance) Inheritance is the mechanism which allows a class A to inherit propertiesof a classB.Wesay``A inheritsfrom B".Objects of classA thus have access to attributes and methods of class B without the need to redefine them. The following definitiondefinestwotermswithwhichweareabletorefertoparticipatingclasseswhen they use inheritance.

Definition(Superclass/Subclass)IfclassAinheritsfromclassB,thenBiscalledsuper classofA.AiscalledsubclassofB.Objectsofasubclasscanbeusedwhereobjectsof thecorrespondingsuperclassareexpected.Thisisduetothefactthatobjectsofthe subclasssharethesamebehaviorasobjectsofthesuperclass.

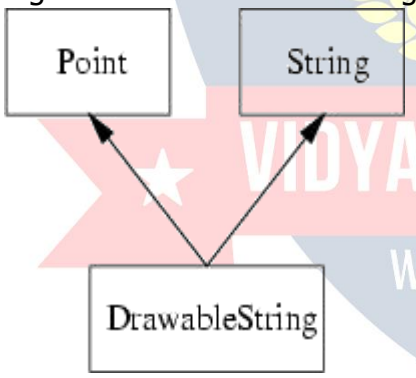
Figure:Asimpleinheritancegraph.



Multiple Inheritance

One important object-oriented mechanism is multiple inheritances. Multiple inheritances do notmeanthatmultiple subclasses sharethe same super class.It alsodoes not mean thatasubclasscaninheritfromaclasswhichitselfisasubclassofanotherclass.Multiple inheritances mean that one subclass can have more than one super class. This enables the subclass to inherit properties of more than one super class and to ``merge'' their properties.

Figure:DeriveadrawablestringwhichinheritspropertiesofPointandString.



Definition (Multiple Inheritance) If class A inherits from more than one class, ie. A inheritsfromB1,B2,...,Bn,wespeakofmultipleinheritance.Thismayintroducenaming conflicts in A if at least two of its super classes define properties with the same name.

Inheritancebetweenclasses

AkeyfeatureofC++classesisinheritance.Inheritanceallowscreatingclasseswhichare derived from other classes, so that they automatically include some of its "parent's" members,plusitsown. Forexample, we aregoingto supposethatwe want todeclarea seriesof classesthatdescribe polygonslike ourCRectangle,orlikeCTriangle.Theyhave certain common properties, such as both can be described by means of only two sides: height and base.

This could be represented in the world of classes with a class CPolygon from which we would derive the two other ones: CRectangle and CTriangle.

Whatisinheritedfrom the base class?

Inprinciple,aderivedclassinheritseverymemberofabaseclassexcept:

- itsconstructoranditsdestructor
- its operator=() members
- itsfriends

Althoughtheconstructorsanddestructorsofthebaseclassarenotinheritedthemselves, its default constructor (i.e., its constructor with no parameters) and its destructor are always called when a new object of a derived class is created or destroyed.

AbstractClasses

With inheritance we are able to force a subclass to offer the same properties like their super classes. Consequently, objects of a subclass behave like objects of their super classes. Sometimes it make sense to only describe the properties of a set of objects without knowing the actual behavior beforehand.

StaticandDynamic Binding

Instronglytypedprogramminglanguagesyoutypicallyhavetodeclarevariablespriorto theiruse.Thisalsoimpliesthevariable'sdefinitionwherethecompilerreservesspacefor the variable.Definition (Static Binding)If the typeT of a variable is explicitlyassociated with its name N by declaration, we say, that N is statically bound to T. The association process is called static binding.

Polymorphism

Polymorphismallowsanentity(forexample,variable,functionorobject)totakeavariety of representations. Therefore we have to distinguish different types of polymorphism which will be outlined here.

The first type is similar to the concept of dynamic binding. Here, the type of a variable depends on its content. Thus, its type depends on the content at a specific time:

```
  v:=123          /*visinteger*/      ...
/* use v as integer */v := 'abc'      /*v
"switches" to string */...             /*use
v as string */
```

Definition (Polymorphism) The concept of dynamic binding allows a variable to take different types dependent on the content at a particular time. This abilityof a variable is

calledpolymorphism.Anothertypeofpolymorphismcanbedefinedforfunctions.For

example, suppose you want to define a function is Null () which returns TRUE if its argument is 0 (zero) and FALSE otherwise.

Function templates

Functiontemplatesarespecialfunctions thatcan operate with generictypes. Thisallows ustocreateafunctiontemplatewhosefunctionalitycanbeadaptedtomorethanonetype orclasswithoutrepeatingtheentirecodeforeachtype.InC++thiscanbeachievedusing template parameters. A template parameter is a special kind of parameter that can be used to pass a type as argument: just like regular function parameters can be used to pass values to a function, template parameters allow to pass also types to a function. Thesefunctiontemplatescanusetheseparametersasiftheywereanyotherregulartype.

The format for declaring function templates with type parameters is: template <class identifier>function_declaration;template<typenameidentifier>function_declaration;

Theonlydifferencebetweenbothprototypesistheuseofeitherthekeywordclassorthe keyword typename.

Templatespecialization

If we want to define a different implementation for a template when a specific type is passed as template parameter, we can declare a specialization of that template. For example,let'ssupposethatwehaveaverysimpleclasscalledmycontainerthatcanstore oneelementof anytype andthat ithasjustonememberfunction called increase,which increases its value. But we find that when it stores an element of type char it would be more convenient to have a completely different implementation with a function member uppercase, so we decide to declare a class template specialization for that type.

Exceptions

Exceptionsprovideawaytoreacttoexceptionalcircumstances(likeruntimeerrors)inour program by transferring control to special functions called handlers. To catch exceptions we must place a portion of code under exception inspection. This is done by enclosing that portion of code in a try block. When an exceptional circumstance arises within that block, an exception is thrown that transfers the control to the exception handler. If no exception is thrown, the code continues normally and all handlers are ignored.

Standard exceptions

The C++ Standard library provides a base class specifically designed to declare objects tobethrownasexceptions.Itiscalledexceptionandisdefinedinthe<exception>header file under the namespace std. This class has the usual default and copy constructors, operators and destructors, plus an additional virtual member function called what that returns a null-terminated character sequence (char *) and that can be overwritten in

derived classes to contain some sort of description of the exception.

TypeCasting

Convertinganexpressionof agiventype intoanothertypeisknownastype-casting.We have already seen some ways to type cast:

Implicit conversion

Implicitconversionsdonotrequireanyoperator.Theyareautomaticallyperformedwhen a value is copied to a compatible type.

Explicitconversion

C++isastrong-typedlanguage.Manyconversions,especiallythosethatimplyadifferent interpretation of the value, require an explicit conversion.

Data Types

Table:Built-intypes.

Type	Description	Size	Domain
char	Signed character/byte. Characters are enclosed in **single** quotes.	1	-128..127
double	Double precision number	8	ca. $10^{-308}..10^{308}$
int	Signed integer	4	$-2^{31}..2^{31}-1$
float	Floating point number	4	ca. $10^{-38}..10^{38}$
long (int)	Signed long integer	4	$-2^{31}..2^{31}-1$
long long (int)	Signed very long integer	8	$-2^{63}..2^{63}-1$
short (int)	Short integer	2	$-2^{15}..2^{15}-1$
unsigned char	Unsigned character/byte	1	0..255
unsigned (int)	Unsigned integer	4	$0..2^{32}-1$
unsigned long (int)	Unsigned long integer	4	$0..2^{32}-1$
unsigned long long (int)	Unsigned very long integer	8	$0..2^{64}-1$
unsigned short (int)	Unsigned short integer	2	$0..2^{16}-1$

ExpressionsandOperators

Expressions are combined of both terms and operators. The first could be constants, variables or expressions. From the latter, C offers all operators known from other languages. However, it offerssomeoperatorswhich couldbe viewed asabbreviationsto combinations of other operators. In C almost everything is an expression. For example, the assignment statement ``=" returns the value of its right-hand operand. As a ``side effect"italsosetsthevalueof theleft-handoperand.Thus,ix=12;

sets the value of ix to 12 (assuming that ix has an appropriate type). Now that the assignment is also an expression, we can combine several of them; for example:

kx=jx=ix=12;

What happens? The first assignment assigns kx the value of its right-hand side. This is thevalueoftheassignmenttojx.Butthisisthevalueoftheassignmenttoix.Thevalue ofthislatteris12whichisreturnedtojxwhichisreturnedtokx.Thuswehaveexpressed

```
  ix=12;
jx=12;
kx=12;in
one line.
```

Statements

Cdefinesallusualflowcontrolstatements.Statementsareterminatedbyasemicolon``;''. Wecangroupmultiplestatementsintoblocksbyenclosingthemincurlybrackets.Within each block, we can define new variables:

```
 {
   inti;        /*Defineaglobali*/       i
=1;/*Assignithevalue0*/{
/*Beginnewblock*/inti;/*
Definealocali*/i=2;/*Set its value to
2 */
   }            /*Closeblock*/
                /*Hereiisagain1fromtheouterblock*/
 }
```

Tableof Statements

Statement	Description
`break;`	Leave current block. Also used to leave `case` statement in `switch`.
`continue;`	Only used in loops to continue with next loop immediately.
`do` *stmt* `while (`*expr*`);`	Execute *stmt* as long as *expr* is TRUE.
`for ([`*expr*`]; [`*expr*`]; [`*expr*`])` *stmt*	This is an abbreviation for a `while` loop where the first *expr* is the initialization, the second *expr* is the condition and the third *expr* is the step.
`goto` *label*;	Jumps to position indicated by *label*. The destination is *label* followed by colon ":".
`if (`*expr*`)` *stmt* `[else` *stmt*`]`	IF-THEN-ELSE in C notation
`return [`*expr*`];`	Return from function. If function returns `void` `return` should be used without additional argument. Otherwise the value of *expr* is returned.

`switch (`*expr*`) {`
`case` *const-expr*`:` *stmts*
`case` *const-expr*`:` *stmts*
...
`[default:` *stmts*`]`
`}`
	After evaluation of *expr* its value is compared with the `case` clauses. Execution continues at the one that matches. BEWARE: You **must** use `break` to leave the `switch` if you don't want execution of following `case` clauses! If no `case` clause matches and a `default` clause exists, the statements of the default clause are executed.

`while (`*expr*`)` *stmt*	Repeat *stmt* as long as *expr* is TRUE.

Functions

AsCisaproceduralanguageitallowsthedefinitionoffunctions.Proceduresare ``simulated"byfunctionsreturning``novalue".Thisvalueisaspecialtypecalledvoid.

Functionsaredeclaredsimilartovariables,buttheyenclosetheirargumentsin parenthesis (even if there are no arguments, the parenthesis must be specified):

```
  intsum(intto);/*Declarationofsumwithoneargument*/ int
bar();          /*Declarationofbarwithnoarguments*/       void
for(int ix, int jx);
                /*Declarationofforwithtwoarguments*/
```

Pointersand Arrays

One of the most common problems in programming in C++ is the understanding of pointers and arrays. In C (C++) both are highly related with some small but essential differences. You declare a pointer by putting an asterisk between the data type and the name of the variable or function:

```
char*strp;      /*strpis`pointertochar'*/
```

Youaccessthecontentofapointerbydereferencingitusingagaintheasterisk:

```
*strp='a';            /*Asinglecharacter*/
```

As in other languages, you must provide some space for the value to which the pointer points.Apointertocharacterscanbeusedtopointtoasequenceofcharacters:thestring. Strings in C are terminated by a special character NUL (0 or as char ',\0).

Arraysas parameters

Atsomemomentwemayneedtopassanarraytoafunctionasaparameter.InC++itis not possible to pass a complete block of memory by value as a parameter to a function, butweareallowedtopassitsaddress.Inpracticethishasalmostthesameeffectandit is a much faster and more efficient operation.

Pointers

We have already seen how variables are seen as memory cells that can be accessed usingtheiridentifiers.Thiswaywedidnothavetocareaboutthephysicallocationofour data within memory, we simply used its identifier whenever we wanted to refer to our variable.Thememoryofyourcomputercanbeimaginedasasuccessionofmemorycells, each one of the minimal size that computers manage (one byte). These singlebyte memory cells are numbered in a consecutive way, so as, within any block of memory, everycellhasthesamenumberasthe previousoneplusone.Thisway,eachcellcanbe easily located in the memory because it has a unique address and all the memory cells followasuccessivepattern.Forexample,ifwearelookingforcell1776weknowthatitis goingto be right between cells1775 and1777, exactlyone thousand cellsafter776and exactly one thousand cells before cell 2776.

Referenceoperator (&)

As soon as we declare a variable, the amount of memory needed is assigned for it at a specificlocationinmemory(itsmemoryaddress).Wegenerallydonotactivelydecidethe exactlocationofthevariablewithinthepanelofcellsthatwehaveimaginedthememory tobe-Fortunately,thatisataskautomaticallyperformedbytheoperatingsystemduring runtime.However,insomecaseswemaybeinterestedinknowingtheaddresswhereour variableisbeingstoredduringruntimeinordertooperatewithrelativepositionstoit.

Dereferenceoperator(*)

Wehavejustseenthatavariablewhichstoresareferencetoanothervariableiscalleda pointer. Pointers are said to "point to" the variable whose reference they store. Using a pointer we can directly access the value stored in the variable which it points to. To do this,wesimplyhavetoprecedethepointer'sidentifierwithanasterisk(*),whichactsas dereferenceoperatorand that canbe literally translated to "valuepointedby".

Nullpointer

A null pointer is a regular pointer of any pointer type which has a special value that indicatesthatitisnotpointingtoanyvalidreferenceormemoryaddress.Thisvalueisthe result of type-casting the integer value zero to any pointer type.

int*p;p=0;//phasanullpointer value

Do not confuse null pointers with void pointers. A null pointer isa value that anypointer maytaketorepresentthatitispointingto"nowhere",whileavoidpointerisaspecialtype of pointer that can point to somewhere without a specific type. One refers to the value storedinthepointeritselfandtheothertothetypeofdataitpointsto.

Pointersto functions

C++ allows operations with pointers to functions. The typical use of this is for passing a function asan argument to anotherfunction,since these cannotbe passed dereference. In order to declare a pointer to a function we have to declare it like the prototype of the functionexceptthatthenameofthefunctionisenclosedbetweenparentheses ()andan asterisk (*) is inserted before the name:

C++Program

Hereweintroducethefirstprogramwhichissooftenused:aprogramwhichprints``Hello, world!" to your screen:

```
 #include <stdio.h>

 /*Globalvariablesshouldbehere*/

 /*Functiondefinitionsshouldbehere*/ int
main(){
   puts("Hello,          world!");
return 0;
 }/*main*/
```

The first line looks something strange. Its explanation requires some information about howC(andC++)programsarehandledbythecompiler.Thecompilationstepisroughly dividedintotwosteps.Thefirststepiscalled``preprocessing''andisusedtoprepareraw C code. In this case this step takes the first line as an argument to include a file called stdio.h into the source. The angle brackets just indicate that the file is to be searched in the standard search path configured for your compiler. The file itself provides some declarationsanddefinitionsforstandardinput/output.Forexample,itdeclaresafunction called put(). The preprocessing step also deletes the comments.

Constructor

With constructors we are able to initialize our objects at definition time as we have requested it for our singly linked list. We are now able to define a class List where the constructorstakecareofcorrectlyinitializingitsobjects.Ifwewanttocreateapointfrom another point, hence, copying the properties of one object to a newly created one, we sometimes have to take care of the copy process. For example, consider the class List which allocates dynamically memory for its elements. If we want to create a second list which is a copy of the first, we must allocate memoryand copy the individual elements.

Destructors

Consider a class List. Elements of the list are dynamically appended and removed. The constructor helps us in creating an initial empty list. However, when we leave the scope ofthedefinitionofalistobject,wemustensurethatthe allocatedmemoryisreleased.We thereforedefineaspecialmethodcalleddestructorwhichiscalledonceforeachobjectat its destruction time:

```
 voidfor(){
      Listalist;//List::List()initializesto
//emptylist.
  ...                //add/removeelements
 }                   //Destructorcall!
```

Destruction of objects takes place when the object leaves its scope of definition or is explicitly destroyed.The latter happens, when we dynamically allocate an object and release it when it is no longer needed. Destructors are declared similar to constructors. Thus, theyalso use the nameprefixed bya tilde (~) of thedefiningclass.

Identifiers

Valid identifiers are a sequence of one or more letters, digits or underscore characters (_). Neither spaces nor punctuation marks or symbols can be part of an identifier. Only letters, digits and single underscore characters are valid. In addition, variable identifiers alwayshavetobeginwithaletter.Theycanalsobeginwithanunderlinecharacter(_), but in some cases these may be reserved for compiler specific keywords or external identifiers, as well as identifiers containing two successive underscore characters anywhere.Innocasetheycanbeginwithadigit.Anotherrulethatyouhavetoconsider

wheninventingyourownidentifiersisthattheycannotmatchanykeywordoftheC++

language or your compiler's specific ones, which are reserved keywords. The standard reserved keywords are:

asm, auto, bool, break, case, catch, char, class, const, const_cast, continue, default, delete,

do,double,dynamic_cast,else,enum,explicit,export,extern,false,float,for,friend,goto,

if,inline,int,long,mutable,namespace,new,operator,private,protected,public,register,

reinterpret_cast,return,short,signed,sizeof,static,static_cast,struct,switch,template, this, throw, true, try, typedef, typeid, typename, union, unsigned, using, virtual, void, volatile, wchar_t, while.

Operators inC++

Operators can briefly be defined as the tools used for solving various mathematical, conditional, relational and logical problems. The operators that you will be dealing with are arithmetic operators, unary operators, relational and logical operators. The items in between which the operators are placed are called operands.

Arithmeticoperators:
Arithmetic Operators can be considered the main point of all the operators. Arithmetic operators are tools that help us in computing various mathematical operations.

Operators	Function Performed
+	Addition
	Subtraction
*	Multiplication
/	Division
%	(Modulus)Findsthe remainder

UnaryOperators:
Therearetwotypesofunaryoperators:-

- **Theincrementoperator(denotesas'++')**
- **Thedecrementoperator(denotesas'--')**

Whentheincrementoperatorisprefixedtoavariablewhichholdsanintegeritincreases thevalueofthenumberbyone.Similarlythedecrementoperatordecreasesthevalueby one.

RelationalandLogical Operators:

Operators	Significance
<	Lessthan
<=	Lessthanorequalto
>	Greaterthan
>=	Greaterthanorequalto
EqualityOperators	Significance
==	Equalto
!=	Notequalto
LogicalOperators	Significance
&&	And
||	Or
!	Not

Assignmentis=***i.e.***i=4;ch=`y';
Increment ++,**Decrement** --whicharemoreefficientthantheirlonghandequivalents, forexample:--x++ isfasterthanx=x+1.

The++and--operatorscanbeeitherinpost-fixedorpre-fixed.Withpre-fixedthevalueis computed before the expression is evaluated whereas with post-fixed the value is computed after the expression is evaluated.

Comparison Operators

Totestforequalityis==

Awarning: Bewareofusing``="insteadof``==",suchaswritingaccidentally

```
if(i=j).....
```

Thisisaperfectly**LEGAL** Cstatement(syntacticallyspeaking)whichcopiesthevaluein "j"into"i",anddeliversthisvalue,whichwillthenbeinterpretedasTRUEif `j` isnonzero. This is called **assignment by value** -- a key feature of C.

Notequalsis:!=

Otheroperators<(lessthan),>(greaterthan),<=(lessthanorequals),>=(greaterthan or equals) are as usual.

Statements in C Language

Cneedssomekindofmanagerialsystemwhichinstructsthecomputerwhatfunctionhas tobeperformedatwhichtime.Thecontrolstatementactasamanager.Youwillamaze at the functions the different control statements handle. For example in a program you may have a statement in which a multiplication operation is to be performed and in the next an addition operation and after the next line there may be a statement which may wantitselftoberepeated8timesandanotherstatementmaylikeitselftobeskippedand attendedtoatalaterstage.Allthesecconditionsaremanagedbythecontrolstatements.

Thesequencecontrolstructureisoneofthebasicuncomplicatedcontrolstatements.The idea is very simple. In the sequence control instructions the statements to be executed are done so in a serial manner one after the other. The C compiler first executes the openinglineandthenmovesontothenextandsoon.Inaserialfashionandtheentire program is executed in this manner.

ConditionalStatement

C program executes program sequentially. Sometimes, a program requires checking of certainconditionsinprogramexecution.Cprovidesvariouskeyconditionstatementsto check condition and execute statements according conditional criteria. These statements are called as 'Decision Making Statements' or 'Conditional Statements'.
FollowingsarethedifferentconditionalstatementsusedinC:

5. **If Statement**
6. **If-ElseStatement**
7. **NestedIf-ElseStatement**
8. **Switch Case**

IfStatement: Theifstatementcanbeusedtotestconditionssothatwecanaltertheflow of a program. Code:

```
#include<stdio.h>in
  t main()
{
        intmark;charpass;
        scanf("%d",&mark);
        if (mark>40)pass
        ="y";
                return0;
}
```

If-Else Statement: Theifstatementfirsttestsifaconditionistrueandthenexecutesan instruction and the else is for when the result of the condition is false. Code:

```
#include<stdio.h>int
main()
```

{

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```
        intmark;charpass;
        scanf("%d",&mark);
        if(mark>40)
        {
                pass = "y";
                printf("Youpassed");
        }
        else
        {
                pass="n";printf("You failed");

        }
        return0;
}
```

The SwitchStatement: Theswitchstatementisjustlikeanifstatementbutithasmany conditions and the commands for those conditions in only 1 statement. It is runs faster thananifstatement.Inaswitchstatementyoufirstchoosethevariabletobetestedand thenyougiveeachoftheconditionsandthecommandsforthe conditions.Youcanalso putinadefaultifnoneof theconditionsareequaltothevalueof thevariable.

For Loop, While Loop, Breakand Continue

Controlstructuresarebasicallyofthreetypes–

- **Sequence statements**
- **Iterativestatements**
- **Selectionstatements**

SequenceStatements: AlltheStateinaprogramexceptttheiterative&statements.They are generally the individual statements which perform the task of input, output, assignment declaration etc.

IterativeStatementisthoserepeatedexecutionofaparticularsetofinstructionsdesired numberoftimes.Thesestatementsaregenerallycalledloopsfortheirexecutionnature.

TypesofLoopingStatements:

Basically, the types of looping statements depend on the condition checking mode. Condition checking can be made in two ways as : Before loop and after loop. So, there are 2(two) types of looping statements.

- **Entrycontrolledloop**
- **Exitcontrolledloop**

2.Entrycontrolled loop :

Insuchtypeofloop,thetestconditionischeckedfirstbeforetheloopisexecuted.

Somecommonexamplesofthese loopingstatementsare:

- **while loop**
- **forloop**

2.Exitcontrolledloop:

In such type of loop, the loop is executed first. Then condition is checked after block of statements are executed. The loop executed at least one time compulsorily.

Somecommonexampleofthisloopingstatementis:

- **do-whileloop**

InClanguagetheiterativestatements(loops)canbeimplementedinthethreeloopsand they are

The For Loop Syntax-

for(initialization;condition;incrementation)
{
---------- bodyofloop -------- **}**

ForLoopwillperformitsexecutionuntiltheconditionremainssatisfied.If thebody of the loop consists of more than one statement then these statements are made compound by placing the open and closed curly brackets around the body of the loop. For loop is a count loop. The initialization condition and incrementation may be done in the same statement. For loop will not execute at least once also if the condition is false at the first time itself.

TheWhile Loop

Syntax–
Initialization;
While(condition)
{
Body of loop;
Incrementation;
}

In this loop, initialization, condition and incrementation is done in the three different statements.This loopsis count as wellas event loop. In caseof while loops the bodyof theloopwillconsistofmorethanonestatementbecauseeachtimeonestatementwillbe of incrementation. Hence the open and closed curly brackets are required.

Do-While LoopStatement:

ThethirdloopstatementavailableinCisdo-whilestatementsyntax:-Initialization;
Do
{
Body of loop;
Incrementation;
}while(condition)

Overloadedfunctions.

InC++twodifferentfunctionscanhavethesamenameiftheirparametertypesornumber aredifferent.Thatmeansthatyoucangivethesamenametomorethanonefunctionif theyhaveeitheradifferentnumberofparametersordifferenttypesintheirparameters.

Inline functions.

Theinlinespecifierindicatesthecompilerthatinlinesubstitutionispreferredtotheusual function call mechanism for a specific function. This does not change the behavior of a function itself, but is used to suggest to the compiler that the code generated by the functionbodyisinsertedateachpointthefunctioniscalled,insteadofbeinginsertedonly onceandperforma regularcalltoit, which generallyinvolvessomeadditionaloverhead in running time.

Recursively

Recursivelyisthepropertythatfunctionshavetobecalledbythemselves.Itisusefulfor manytasks,likesortingorcalculatesthefactorialofnumbers.Forexample,toobtainthe factorialofanumber(n!)themathematicalformulawouldbe:

n!=n*(n-1)*(n-2)*(n-3)...*1

Classesdefinedwithstructand union

Classes can be defined not only with keyword class, but also with keywords struct and union.Theconceptsofclassanddatastructurearesosimilarthatbothkeywords(struct and class) can be used in C++ to declare classes (i.e. struct can also have function members in C++, not only data members). The only difference between both is that membersofclassesdeclaredwiththekeywordstructhavepublicaccessbydefault,while members of classes declared with the keyword class have private access. For all other purposes both keywords are equivalent.

Theconceptofunionsisdifferentfromthatofclassesdeclaredwithstructandclass,since unionsonlystoreonedatamemberatatime,butneverthelesstheyarealsoclassesand can thus

also hold function members. The default access in union classes is public.

Friendfunctions

In principle, private and protected members of a class cannot be accessed from outside the same class in which they are declared. However, this rule does not affect friends. Friends are functions or classes declared as such. If we want to declare an external functionasfriendofaclass,thusallowingthisfunctiontohaveaccesstotheprivateand protectedmembersofthisclass,wedoitbydeclaringaprototypeofthisexternalfunction within the class, and preceding it with the keyword friend.

Preprocessor directives

Preprocessor directives are lines included in the code of our programs that are not programstatementsbutdirectivesforthepreprocessor.Theselinesarealwayspreceded by a hash sign (#). The preprocessor is executed before the actual compilation of code begins, therefore the preprocessor digests all these directives before any code is generated by the statements.

These preprocessor directives extend only across a single line of code. As soon as a newlinecharacterisfound,thepreprocessordirectiveisconsideredtoend.Nosemicolon (;) is expected at the end of a preprocessor directive. The only way a preprocessor directivecanextendthroughmorethanonelineisbyprecedingthenewlinecharacterat the end of the line by a backslash (\).

Macrodefinitions(#defines, #undef)

Todefinepreprocessormacroswecanuse#define.Itsformatis:

#define identifier replacement

When the preprocessor encountersthisdirective, it replaces any occurrence of identifier in the rest of the code by replacement. This replacement can be an expression, a statement, a block or simply anything. The preprocessor does not understand C++, it simply replaces any occurrence of identifier by replacement.

Input/outputwithfiles

C++providesthefollowingclassestoperformoutputandinputofcharactersto/fromfiles:

- ofstream:Streamclasstowriteonfiles
- ifstream:Streamclasstoreadfromfiles
- fstream:Streamclasstobothreadandwritefrom/tofiles.

These classes are derived directly or indirectly from the classes' istream, and ostream. We have already used objects whose types were these classes: cin is an object of class istream and cout is an object of class ostream. Therefore, we have already been using classes that are related to our file streams. And in fact, we can use our file streams the samewaywearealreadyusedtousecinandcout,withtheonlydifferencethatwehave to associate these streams with physical files.

Openafile

Thefirstoperationgenerallyperformedonanobjectofoneoftheseclassesistoassociate ittoarealfile.Thisprocedureisknownastoopenafile.Anopenfileisrepresentedwithin a program by a stream object (an instantiation of one of these classes, in the previous example this was myfile) and any input or output operation performed on this stream object will be applied to the physical file associated to it. In order to open a file with a stream object we use its member function open():

open(filename,mode);

Closing afile

When we are finished with our input and output operations on a file we shall close it so thatitsresourcesbecomeavailableagain.Inordertodothatwehavetocallthestream's memberfunctionclose().Thismemberfunctiontakesnoparameters,andwhatitdoesis to flush the associated buffers and close the file:

myfile.close();

Oncethismemberfunctioniscalled,thestreamobjectcanbeusedtoopenanotherfile, and the file isavailableagainto be opened byotherprocesses.In case thatan object is destructed while still associated with an open file, the destructor automatically calls the member function close().

Text files

Text file streams are those where we do not include the ios::binaryflag in theiropening mode. These files are designed to store text and thus all values that we input or output from/to them can suffer some formatting transformations, which do not necessarily correspond to their literal binary value.

Checkingstate flags

In addition to eof(), which checks if the end of file has been reached, other member functionsexisttocheckthestateofastream(allofthemreturnaboolvalue):

bad()

Returnstrueifareadingorwritingoperationfails.Forexampleinthecasethatwetryto writetoafilethatisnotopenforwritingorifthedevicewherewetrytowritehasnospace left.

fail()

Returnstrueinthesamecasesasbad(),butalsointhecasethataformaterrorhappens, like when an alphabetical character is extracted when we are trying to read an integer number.

eof()

Returnstrueifafileopenforreadinghasreachedtheend.

good()

Itisthemostgenericstateflag:itreturnsfalseinthesamecasesinwhichcallinganyof the previous functions would return true.

Inordertoresetthestateflagscheckedbyanyofthesememberfunctionswehavejust seen we can use the member function clear(), which takes no parameters.

getandputstream pointers

Alli/ostreamsobjectshave,atleast,oneinternalstreampointer:

Ifstream,likeistream,hasapointerknownasthegetpointerthatpointstotheelementto bereadinthenextinputoperation.ofstream,likeostream,hasapointerknownastheput pointer that points to the location where the next element has to be written. Finally, fstreaminheritsboth,thegetandtheputpointers,fromiostream(whichisitselfderived from both istream and ostream).
Theseinternalstreampointersthatpointtothereadingorwritinglocationswithinastream can be manipulated using the following member functions:

tellg()and tellp()

Thesetwomemberfunctionshavenoparametersandreturnavalueofthemembertype pos_type,whichisanintegerdatatyperepresentingthecurrentpositionofthegetstream pointer(inthecaseoftellg)ortheputstreampointer(inthecaseoftellp).

seekg()andseekp()

Thesefunctionsallowustochangethepositionofthegetandputstreampointers.Both functionsareoverloadedwithtwodifferentprototypes.Thefirstprototypeis:

- seekg(position);
- seekp(position);

Usingthisprototypethestreampointerischangedtotheabsoluteposition(countingfrom thebeginningofthefile).Thetypeforthisparameteristhesameastheonereturnedby functions tellgand tellp: themember typepos_type, which is an integer value

Binaryfiles

Inbinaryfiles,toinputandoutputdatawiththeextractionandinsertionoperators(<<and >>)andfunctionslikegetlineisnotefficient,sincewedonotneedtoformatanydata,and datamaynotusetheseparationcodesusedbytextfilestoseparateelements(likespace, newline,etc...).Filestreamsincludetwomemberfunctionsspecificallydesignedtoinput and output binary data sequentially: write and read. The first one (write) is a member functionofostreaminheritedbyofstream.Andreadisamemberfunctionofistreamthat is inherited by ifstream. Objects of class fstream have both members.

Buffers andSynchronization

When we operate with file streams, these are associated to an internal buffer of type streambuf.Thisbufferisamemoryblockthatactsasanintermediarybetweenthestream andthephysicalfile.Forexample,withanofstream,eachtimethememberfunctionput (which writes a single character) is called, the character is not written directly to the physicalfilewithwhichthestreamisassociated.Insteadofthat,thecharacterisinserted inthatstream'sintermediatebuffer.Whenthebufferisflushed,allthedatacontainedin itiswrittentothephysicalmedium(ifitisanoutputstream)orsimplyfreed(ifitisaninput stream).Thisprocessiscalledsynchronizationandtakesplaceunderanyofthefollowing circumstances:

- When the file is closed: before closing a file all buffers that have not yet been flushed are synchronized and all pending data is written or read to the physical medium.
- When the buffer is full: Buffers have a certain size. When the buffer is full it is automatically synchronized.
- Explicitly, with manipulators:When certainmanipulators areusedon streams, an explicit synchronization takes place. These manipulators are: flush and endl.
- Explicitly, with memberfunction sync(): Callingstream'smemberfunction sync(), which takes no parameters, causes an immediate synchronization. This function returnsanintvalueequalto-1ifthestreamhasnoassociatedbufferorincaseof failure.Otherwise(ifthestreambufferwassuccessfullysynchronized)itreturns0.