

Introducing new series for computer diploma courses

DCA / ADCA

(Diploma in Computer Application)

&

(Advanced Diploma in Computer Application)

Bi-lingual English- Hindi

This title includes Computer awareness essentials, Data representation & Computer Organization Operating system, Microsoft Office suite application (Word, Excel, and PowerPoint), Internet awareness, Web programming (HTML, Dynamic HTML, CSS, and some PHP & ASP), Hosting Websites, Database management system (SQL Queries, Microsoft Access) & 'C' Programming.

by

T BALAJI PUBLICATION

Triloki Complex, Infront of A.N. Jha Hostel, Allahabad- 211002
Uttar Pradesh

Table of Contents

1. Introduction to Computers	18
Introduction.....	18
History of Computers.....	18
Generation of Computer.....	19
Characteristics of Computers	19
Computer System.....	Error! Bookmark not defined.
Input.....	Error! Bookmark not defined.
Input Devices	Error! Bookmark not defined.
Keyboard.....	Error! Bookmark not defined.
Mouse	Error! Bookmark not defined.
Joystick	Error! Bookmark not defined.
Scanner	Error! Bookmark not defined.
Web Camera	Error! Bookmark not defined.
Output	Error! Bookmark not defined.
Output Devices	Error! Bookmark not defined.
Monitors.....	Error! Bookmark not defined.
Speakers.....	Error! Bookmark not defined.
Printers.....	Error! Bookmark not defined.
Dot Matrix	Error! Bookmark not defined.
Inkjet Printer	Error! Bookmark not defined.
LaserPrinter.....	Error! Bookmark not defined.
CPU (Central Processing Unit).....	Error! Bookmark not defined.
Arithmetic Logic Unit (ALU).....	Error! Bookmark not defined.
Control Unit.....	Error! Bookmark not defined.
Memory Unit.....	Error! Bookmark not defined.
Processor Speed	Error! Bookmark not defined.
Cache	Error! Bookmark not defined.
Memory.....	Error! Bookmark not defined.
RAM(Random Access Memory)	Error! Bookmark not defined.
ROM(Read Only Memory)	Error! Bookmark not defined.
Bootng	Error! Bookmark not defined.
Storage Units.....	Error! Bookmark not defined.
Secondary Storage Devices.....	Error! Bookmark not defined.
Floppy & Hard disks.....	Error! Bookmark not defined.
Optical Disk CD ROM.....	Error! Bookmark not defined.
DVD (Digital Video Disk).....	Error! Bookmark not defined.
Mass Storage Devices	Error! Bookmark not defined.
USB Thumb drive.....	Error! Bookmark not defined.
Computer Software.....	Error! Bookmark not defined.
System Software	Error! Bookmark not defined.
Application Software	Error! Bookmark not defined.
Compiler	Error! Bookmark not defined.
Interpreter	Error! Bookmark not defined.
Assembler	Error! Bookmark not defined.
High level languages.....	Error! Bookmark not defined.
Managing Disk Partitions.....	Error! Bookmark not defined.
File System	Error! Bookmark not defined.
What is Multimedia?.....	Error! Bookmark not defined.
Text.....	Error! Bookmark not defined.
Graphics.....	Error! Bookmark not defined.
Animation	Error! Bookmark not defined.
Audio	Error! Bookmark not defined.
Images.....	Error! Bookmark not defined.
Video	Error! Bookmark not defined.
Multimedia Application inEducation	Error! Bookmark not defined.
Multimedia Application inEntertainment.....	Error! Bookmark not defined.

Multimedia Application inMarketing.....	Error! Bookmark not defined.
Multimedia File formats.....	Error! Bookmark not defined.
Multiple Choice Questions.....	Error! Bookmark not defined.
2. Data Representation & Computer Organization	20
Introduction.....	20
Signal.....	20
Analog Signal	20
Digital Signal	20
Digital Number System.....	21
Binary Number System.....	21
Octal Number System	Error! Bookmark not defined.
Decimal Number System	Error! Bookmark not defined.
Hexadecimal Number System.....	Error! Bookmark not defined.
Number System Conversion	Error! Bookmark not defined.
Binary to Decimal	Error! Bookmark not defined.
Decimal to Binary	Error! Bookmark not defined.
Hexadecimal to Decimal.....	Error! Bookmark not defined.
Hexadecimal to Binary	Error! Bookmark not defined.
Binary to Hexadecimal	Error! Bookmark not defined.
Octal to Binary.....	Error! Bookmark not defined.
Binary to Octal.....	Error! Bookmark not defined.
Binary Codes.....	Error! Bookmark not defined.
Weighted Codes.....	Error! Bookmark not defined.
Non-Weighted Codes.....	Error! Bookmark not defined.
Excess-3 Code.....	Error! Bookmark not defined.
Gray Code.....	Error! Bookmark not defined.
Binary Coded Decimal (BCD) code.....	Error! Bookmark not defined.
Alphanumeric codes.....	Error! Bookmark not defined.
ASCII Code	Error! Bookmark not defined.
EBCDIC Code	Error! Bookmark not defined.
Unicode.....	Error! Bookmark not defined.
Code Conversions	Error! Bookmark not defined.
Binary to BCD	Error! Bookmark not defined.
BCD to Binary	Error! Bookmark not defined.
BCD to Excess-3.....	Error! Bookmark not defined.
Excess-3 to BCD.....	Error! Bookmark not defined.
Boolean algebra	Error! Bookmark not defined.
Rule in Boolean algebra.....	Error! Bookmark not defined.
Boolean Laws	Error! Bookmark not defined.
Boolean Expression/Function	Error! Bookmark not defined.
Truth Table Formation.....	Error! Bookmark not defined.
Karnaugh-map or K-map	Error! Bookmark not defined.
SUM OF PRODUCTS (SOP) FORM.....	Error! Bookmark not defined.
PRODUCT OF SUMS (POS) FORM.....	Error! Bookmark not defined.
NAND gates Realization.....	Error! Bookmark not defined.
De Morgan's Theorems	Error! Bookmark not defined.
Logic Gates.....	Error! Bookmark not defined.
AND Gate	Error! Bookmark not defined.
OR Gate	Error! Bookmark not defined.
NOT Gate.....	Error! Bookmark not defined.
NAND Gate	Error! Bookmark not defined.
NOR Gate	Error! Bookmark not defined.
XOR Gate	Error! Bookmark not defined.
XNOR Gate	Error! Bookmark not defined.
Combinational Circuits	Error! Bookmark not defined.
Half Adder	Error! Bookmark not defined.
Full Adder.....	Error! Bookmark not defined.
N-Bit Parallel Adder	Error! Bookmark not defined.

4 Bit Parallel Adder	Error! Bookmark not defined.
N-Bit Parallel Subtractor.....	Error! Bookmark not defined.
4 Bit Parallel Subtractor	Error! Bookmark not defined.
Multiplexers.....	Error! Bookmark not defined.
Demultiplexers.....	Error! Bookmark not defined.
Decoder.....	Error! Bookmark not defined.
Encoder.....	Error! Bookmark not defined.
Sequential Circuits	Error! Bookmark not defined.
Flip Flop.....	Error! Bookmark not defined.
S-R Flip Flop	Error! Bookmark not defined.
Master Slave JK Flip Flop	Error! Bookmark not defined.
Delay Flip Flop / D Flip Flop.....	Error! Bookmark not defined.
Toggle Flip Flop / T Flip Flop	Error! Bookmark not defined.
Multiple Choice Questions.....	22
3. Operating System	24
Microsoft Windows	24
An Overview of Different Versions of Windows.....	24
Windows 95.....	24
Windows 98.....	25
Windows XP	25
Windows Vista.....	25
Windows 7.....	Error! Bookmark not defined.
Windows 8	Error! Bookmark not defined.
Basic Windows elements	Error! Bookmark not defined.
Windows Explorer	Error! Bookmark not defined.
Task Bar.....	Error! Bookmark not defined.
Quick Launch Toolbar.....	Error! Bookmark not defined.
Icons.....	Error! Bookmark not defined.
Start Menu	Error! Bookmark not defined.
Logoff and Switch User	Error! Bookmark not defined.
Shutdown, Restart, Standby and Hibernate Windows.....	Error! Bookmark not defined.
File Management through Windows	Error! Bookmark not defined.
System tools.....	Error! Bookmark not defined.
Disk cleanup	Error! Bookmark not defined.
Disk Defragmenter.....	Error! Bookmark not defined.
Entertainment.....	Error! Bookmark not defined.
Games	Error! Bookmark not defined.
Calculator.....	Error! Bookmark not defined.
Fax	Error! Bookmark not defined.
Notepad.....	Error! Bookmark not defined.
Paint.....	Error! Bookmark not defined.
WordPad	Error! Bookmark not defined.
Command Prompt.....	Error! Bookmark not defined.
Path setting.....	Error! Bookmark not defined.
Creating and using Batch files	Error! Bookmark not defined.
Drives.....	Error! Bookmark not defined.
Files	Error! Bookmark not defined.
Directories.....	Error! Bookmark not defined.
Directory Structure.....	Error! Bookmark not defined.
Application Management.....	Error! Bookmark not defined.
Installing.....	Error! Bookmark not defined.
Uninstalling.....	Error! Bookmark not defined.
Multiple Choice Questions.....	26
4. Word Processing	29
Word Processing Concepts	29
Microsoft Word 2003.....	29
Microsoft Word 2007/2010.....	29
Microsoft Office Word 2013.....	Error! Bookmark not defined.

Opening Word Processing Package	Error! Bookmark not defined.
Opening Word 2013.....	Error! Bookmark not defined.
Introduction to Menu Bar(s) in Microsoft Word 2003	Error! Bookmark not defined.
Tools Bar	Error! Bookmark not defined.
Word 2013 File tab	Error! Bookmark not defined.
Introduction to Tab(s) of Microsoft Office Word 2007/2010.....	Error! Bookmark not defined.
Creating Document	Error! Bookmark not defined.
Save & Save As (Saving a document)	Error! Bookmark not defined.
Closing a document.....	Error! Bookmark not defined.
Opening an existing document.....	Error! Bookmark not defined.
Document Creation	Error! Bookmark not defined.
Text Selection	Error! Bookmark not defined.
Editing Text	Error! Bookmark not defined.
Finding and Replacing text	Error! Bookmark not defined.
Page Setting Up	Error! Bookmark not defined.
Print Preview.....	Error! Bookmark not defined.
Printing a document	Error! Bookmark not defined.
Creating and Printing Merged Documents	Error! Bookmark not defined.
Printing Mail Merge.....	Error! Bookmark not defined.
Character and Paragraph Formatting.....	Error! Bookmark not defined.
Cut, Copy & Paste	Error! Bookmark not defined.
Font & Size Selection	Error! Bookmark not defined.
Kerning	Error! Bookmark not defined.
Removing Character Formating	Error! Bookmark not defined.
Bold, Italic and Underline.....	Error! Bookmark not defined.
Alignment of Text.....	Error! Bookmark not defined.
Paragraph Indenting	Error! Bookmark not defined.
Paragraph Marker	Error! Bookmark not defined.
Bullets & Numbering.....	Error! Bookmark not defined.
Changing Case	Error! Bookmark not defined.
Page Border	Error! Bookmark not defined.
Paragraph Border	Error! Bookmark not defined.
Header & Footer	Error! Bookmark not defined.
Configuring Header & Footer	Error! Bookmark not defined.
Inserting Page Number	Error! Bookmark not defined.
Formatting Page Number	Error! Bookmark not defined.
Inserting FootNote& EndNote	Error! Bookmark not defined.
Inserting Symbol& Equations	Error! Bookmark not defined.
Page/Background Color	Error! Bookmark not defined.
Page Design and Layout	Error! Bookmark not defined.
Page Orientation	Error! Bookmark not defined.
Paragraph Column	Error! Bookmark not defined.
Section Break	Error! Bookmark not defined.
Page Break	Error! Bookmark not defined.
Tab Setting.....	Error! Bookmark not defined.
Checking and correcting spellings	Error! Bookmark not defined.
Research& Thesaurus	Error! Bookmark not defined.
Translate	Error! Bookmark not defined.
Word count	Error! Bookmark not defined.
AutoCorrect Options.....	Error! Bookmark not defined.
Handling Graphics	Error! Bookmark not defined.
Inserting Picture in active document.....	Error! Bookmark not defined.
Drawing Shapes	Error! Bookmark not defined.
Insert Clip Art	Error! Bookmark not defined.
Insert SmartArt	Error! Bookmark not defined.
Inserting Word Art.....	Error! Bookmark not defined.
Table Manipulation.....	Error! Bookmark not defined.
Creating Table.....	Error! Bookmark not defined.
Drawing and Erasing a Table.....	Error! Bookmark not defined.

Changing Cell height & width	Error! Bookmark not defined.
Alignment of Text in Cell	Error! Bookmark not defined.
Inserting and Deleting Rows/Columns	Error! Bookmark not defined.
Charts	Error! Bookmark not defined.
Document Templates and Wizards	Error! Bookmark not defined.
Wizards	Error! Bookmark not defined.
Multiple Choice Questions	Error! Bookmark not defined.
5. Spreadsheet	30
Elements of Electronic Spreadsheet	30
Microsoft Excel 2007/2010	31
Microsoft Office Excel 2013	Error! Bookmark not defined.
Opening Excel 2013	Error! Bookmark not defined.
Introduction to Menu(s) in Microsoft Excel 2003	Error! Bookmark not defined.
Introduction to Tab(s) of Microsoft Office Excel 2007/2010	Error! Bookmark not defined.
Home Tab-	Error! Bookmark not defined.
Insert Tab-	Error! Bookmark not defined.
Page Layout Tab-	Error! Bookmark not defined.
Formula Tab-	Error! Bookmark not defined.
Data Tab-	Error! Bookmark not defined.
Review Tab-	Error! Bookmark not defined.
View Tab-	Error! Bookmark not defined.
Workbook	Error! Bookmark not defined.
Creating a Blank Workbook	Error! Bookmark not defined.
Create a Workbook through Templates	Error! Bookmark not defined.
Opening an Existing Workbook	Error! Bookmark not defined.
Saving a Workbook	Error! Bookmark not defined.
Saving a workbook in earlier versions	Error! Bookmark not defined.
Editing a Workbook	Error! Bookmark not defined.
Worksheet	Error! Bookmark not defined.
Entering data in a Cell / Formula	Error! Bookmark not defined.
Clear tool	Error! Bookmark not defined.
Creating Series	Error! Bookmark not defined.
Creating Text Series	Error! Bookmark not defined.
Creating Number Series	Error! Bookmark not defined.
Creating Date Series	Error! Bookmark not defined.
Auto Fill feature	Error! Bookmark not defined.
Copying & Moving data from selected cells	Error! Bookmark not defined.
Find & Replace	Error! Bookmark not defined.
Replacing a value	Error! Bookmark not defined.
Go To Command	Error! Bookmark not defined.
Go To Special	Error! Bookmark not defined.
Data Validation	Error! Bookmark not defined.
Sorting	Error! Bookmark not defined.
Filtering	Error! Bookmark not defined.
Goal Seeking	Error! Bookmark not defined.
Handling operators in Formulae	Error! Bookmark not defined.
Functions	Error! Bookmark not defined.
Mathematical Functions	Error! Bookmark not defined.
Statistical Functions	Error! Bookmark not defined.
Date and Time functions	Error! Bookmark not defined.
Using Function Wizard	Error! Bookmark not defined.
Formula Auditing	Error! Bookmark not defined.
Name Manager	Error! Bookmark not defined.
Formatting a Worksheet	Error! Bookmark not defined.
Inserting & Deleting Rows & Columns	Error! Bookmark not defined.
Changing Cell Height & Width	Error! Bookmark not defined.
Formatting Cells	Error! Bookmark not defined.
Font	Error! Bookmark not defined.

Border	Error! Bookmark not defined.
Apply or Remove Cell Borders.....	Error! Bookmark not defined.
Fill color.....	Error! Bookmark not defined.
Changing Theme color.....	Error! Bookmark not defined.
Format Cell as Table.....	Error! Bookmark not defined.
Format Cell Styles	Error! Bookmark not defined.
Protection.....	Error! Bookmark not defined.
Protect sheet.....	Error! Bookmark not defined.
Protect Workbook	Error! Bookmark not defined.
Share Workbook	Error! Bookmark not defined.
Header & Footer	Error! Bookmark not defined.
Page Setup	Error! Bookmark not defined.
Margin	Error! Bookmark not defined.
Header & Footer	Error! Bookmark not defined.
Print Preview.....	Error! Bookmark not defined.
Printing worksheets.....	Error! Bookmark not defined.
Print along with Gridlines & Headings	Error! Bookmark not defined.
Charts and Graphs.....	Error! Bookmark not defined.
Over view of charts.....	Error! Bookmark not defined.
Column Chart.....	Error! Bookmark not defined.
Line Chart	Error! Bookmark not defined.
Pie Chart	Error! Bookmark not defined.
Bar Chart.....	Error! Bookmark not defined.
Area Chart.....	Error! Bookmark not defined.
Scatter Chart	Error! Bookmark not defined.
Stock Chart	Error! Bookmark not defined.
Surface Chart	Error! Bookmark not defined.
Doughnut Chart.....	Error! Bookmark not defined.
Bubble Chart.....	Error! Bookmark not defined.
Radar Chart.....	Error! Bookmark not defined.
Previewing Charts	Error! Bookmark not defined.
Moving the charts	Error! Bookmark not defined.
Modifying Charts.....	Error! Bookmark not defined.
Changing the Chart type	Error! Bookmark not defined.
Changing Chart Style.....	Error! Bookmark not defined.
Changing the Data source	Error! Bookmark not defined.
Modifying the Axes	Error! Bookmark not defined.
Pivot Table & Charts	Error! Bookmark not defined.
Use External Data for Pivot Table & Chart	Error! Bookmark not defined.
Object Linking & Embedding.....	Error! Bookmark not defined.
Integrating Web page file in Excel Sheet.....	Error! Bookmark not defined.
Using External Data.....	Error! Bookmark not defined.
Connectivity and importing data through MS Access.....	Error! Bookmark not defined.
Connectivity and importing data throughText file	Error! Bookmark not defined.
Use the existing connections.....	Error! Bookmark not defined.
Multiple Choice Questions.....	Error! Bookmark not defined.

6. Presentation.....	32
Introduction to Presentation Package	32
Basics of Microsoft PowerPoint.....	32
Slides	32
Layout	32
View.....	33
SlideShow	33
Placeholder	33
Design Template	33
Microsoft PowerPoint 2003	33
Microsoft Office PowerPoint 2007/2010	Error! Bookmark not defined.
Microsoft PowerPoint 2013	Error! Bookmark not defined.

Opening PowerPoint Presentation.....	Error! Bookmark not defined.
Opening PowerPoint 2013	Error! Bookmark not defined.
Introduction to Menu Bar(s) in Microsoft PowerPoint 2003.....	Error! Bookmark not defined.
Introduction to Tools and Tabs of Microsoft PowerPoint 2007/2010	Error! Bookmark not defined.
Home Tab	Error! Bookmark not defined.
Insert Tab	Error! Bookmark not defined.
Design Tab	Error! Bookmark not defined.
Transition Tab.....	Error! Bookmark not defined.
Animation Tab	Error! Bookmark not defined.
Slide Show	Error! Bookmark not defined.
Review Tab	Error! Bookmark not defined.
View Tab	Error! Bookmark not defined.
Creation of Presentation.....	Error! Bookmark not defined.
Creating a Presentation using a Template	Error! Bookmark not defined.
Creating a Blank Presentation	Error! Bookmark not defined.
Saving a Presentation	Error! Bookmark not defined.
Opening a Presentation file	Error! Bookmark not defined.
Creating the Look of Your Presentation	Error! Bookmark not defined.
Using Layouts	Error! Bookmark not defined.
Working in Different Views	Error! Bookmark not defined.
Normal view	Error! Bookmark not defined.
Slide Sorter View.....	Error! Bookmark not defined.
Notes Page View.....	Error! Bookmark not defined.
Slide Show View	Error! Bookmark not defined.
Set a View as default.....	Error! Bookmark not defined.
Working with Slides	Error! Bookmark not defined.
Working with Texts	Error! Bookmark not defined.
Adding Text in Placeholder	Error! Bookmark not defined.
Adding text to Text box	Error! Bookmark not defined.
Formatting text.....	Error! Bookmark not defined.
Changing the Font type & Size	Error! Bookmark not defined.
Changing the Font color.....	Error! Bookmark not defined.
Character Spacing	Error! Bookmark not defined.
Change Case	Error! Bookmark not defined.
Clear all Formatting	Error! Bookmark not defined.
Formatting Paragraphs	Error! Bookmark not defined.
Bullets & Numbering	Error! Bookmark not defined.
Setting Alignment	Error! Bookmark not defined.
Paragraph Indenting& Line Spacing	Error! Bookmark not defined.
Line Spacing	Error! Bookmark not defined.
Setting Tab stops.....	Error! Bookmark not defined.
Paragraph Column	Error! Bookmark not defined.
Convert Text to SmartArt	Error! Bookmark not defined.
Checking Spelling Mistakes.....	Error! Bookmark not defined.
Notes Pages.....	Error! Bookmark not defined.
Creating Notes Pages	Error! Bookmark not defined.
Print the Notes Pages	Error! Bookmark not defined.
Handouts	Error! Bookmark not defined.
Arrange the Content in Handouts.....	Error! Bookmark not defined.
Print Handouts.....	Error! Bookmark not defined.
Drawing and Working with Objects.....	Error! Bookmark not defined.
Insert Objects	Error! Bookmark not defined.
Inserting & Drawing Bitmap	Error! Bookmark not defined.
Insert Excel Sheet	Error! Bookmark not defined.
Insert Word document.....	Error! Bookmark not defined.
Insert Shapes.....	Error! Bookmark not defined.
Drawing a line.....	Error! Bookmark not defined.
Drawing a Rectangle.....	Error! Bookmark not defined.
Drawing an Oval.....	Error! Bookmark not defined.

Fill Color.....	Error! Bookmark not defined.
Fill Gradient and Texture.....	Error! Bookmark not defined.
Fill the Outline.....	Error! Bookmark not defined.
Adding Sounds to Slides.....	Error! Bookmark not defined.
Add a Movie.....	Error! Bookmark not defined.
Adding Clip Art and other pictures.....	Error! Bookmark not defined.
Insert Picture.....	Error! Bookmark not defined.
Insert SmartArt.....	Error! Bookmark not defined.
Charts.....	Error! Bookmark not defined.
Inserting Chart.....	Error! Bookmark not defined.
Insert Photo Album.....	Error! Bookmark not defined.
Insert Table.....	Error! Bookmark not defined.
Draw the table on the Slide.....	Error! Bookmark not defined.
Configuring Table design.....	Error! Bookmark not defined.
Designing Slide Shows.....	Error! Bookmark not defined.
Changing/Setting Theme Color.....	Error! Bookmark not defined.
Background Style.....	Error! Bookmark not defined.
Slide Orientation.....	Error! Bookmark not defined.
Adding Headers & Footers.....	Error! Bookmark not defined.
Add Headers and Footers to Notes, Handouts and the Printed outline.....	Error! Bookmark not defined.
Adding Transitions and Animations to the slides.....	Error! Bookmark not defined.
Running and Controlling a Slide Show.....	Error! Bookmark not defined.
Automating a Slide Show.....	Error! Bookmark not defined.
Setup Slide Show.....	Error! Bookmark not defined.
Rehearse Timings.....	Error! Bookmark not defined.
Printing Presentations.....	Error! Bookmark not defined.
Page Setup.....	Error! Bookmark not defined.
Print Preview.....	Error! Bookmark not defined.
Printing Slides.....	Error! Bookmark not defined.
Printing the Presentation in Outline view.....	Error! Bookmark not defined.
Multiple Choice Questions.....	Error! Bookmark not defined.

7. Internet..... 34

Introduction.....	34
History of Internet.....	34
Concept of Internet.....	Error! Bookmark not defined.
Basics of Internet Architecture.....	Error! Bookmark not defined.
Content Delivery Network.....	Error! Bookmark not defined.
Domain Name System.....	Error! Bookmark not defined.
Internet Protocols.....	Error! Bookmark not defined.
Network Address Translation.....	Error! Bookmark not defined.
Proxy Servers.....	Error! Bookmark not defined.
Services on Internet.....	Error! Bookmark not defined.
Electronic Mail.....	Error! Bookmark not defined.
World Wide Web.....	Error! Bookmark not defined.
Websites.....	Error! Bookmark not defined.
Web Portals.....	Error! Bookmark not defined.
Web Address.....	Error! Bookmark not defined.
Protocols.....	Error! Bookmark not defined.
Web servers.....	Error! Bookmark not defined.
Domain name.....	Error! Bookmark not defined.
Communication on Internet.....	Error! Bookmark not defined.
Email.....	Error! Bookmark not defined.
Email Addressing.....	Error! Bookmark not defined.
Internet Telephony.....	Error! Bookmark not defined.
Chat.....	Error! Bookmark not defined.
News Group or Message Board.....	Error! Bookmark not defined.
ISP (Internet Service Provider).....	Error! Bookmark not defined.
Internet Connections.....	Error! Bookmark not defined.

Broadband.....	Error! Bookmark not defined.
Integrated Services Digital Network (ISDN)	Error! Bookmark not defined.
Leased lines	Error! Bookmark not defined.
Cable Internet access.....	Error! Bookmark not defined.
Digital Subscriber Line	Error! Bookmark not defined.
Dialup Connection	Error! Bookmark not defined.
Wi-Fi.....	Error! Bookmark not defined.
8. Web Programming.....	35
URL (Uniform Resource Locator)	35
HTML (Hyper Text Markup Language)	35
PHP.....	36
ASP (Active Server Pages)	Error! Bookmark not defined.
Dynamic vs. Static Web pages.....	Error! Bookmark not defined.
HTML Basics.....	Error! Bookmark not defined.
HTML Tags	Error! Bookmark not defined.
<Title> Tag	Error! Bookmark not defined.
<Head> Tag	Error! Bookmark not defined.
<Body> Tag.....	Error! Bookmark not defined.
Attributes of BODY Tag.....	Error! Bookmark not defined.
bgcolor.....	Error! Bookmark not defined.
align	Error! Bookmark not defined.
HTML Attributes	Error! Bookmark not defined.
HTML Formatting Tags.....	Error! Bookmark not defined.
Whitespace and Flow:.....	Error! Bookmark not defined.
The <h1> tags	Error! Bookmark not defined.
The <p> Element:	Error! Bookmark not defined.
The Element:	Error! Bookmark not defined.
The <Center> element.....	Error! Bookmark not defined.
The element.....	Error! Bookmark not defined.
Presentational Tags	Error! Bookmark not defined.
The Element	Error! Bookmark not defined.
The <i> Element	Error! Bookmark not defined.
The <u> Element	Error! Bookmark not defined.
The <strike> element	Error! Bookmark not defined.
The <tt> element.....	Error! Bookmark not defined.
The <sup> element.....	Error! Bookmark not defined.
The <sub> element.....	Error! Bookmark not defined.
The <big> element.....	Error! Bookmark not defined.
The <small> element	Error! Bookmark not defined.
The <div> and elements	Error! Bookmark not defined.
HTML Comments	Error! Bookmark not defined.
Web Page Aestheticism	Error! Bookmark not defined.
HTML Fonts	Error! Bookmark not defined.
Font Size.....	Error! Bookmark not defined.
Font Face	Error! Bookmark not defined.
Font Color:.....	Error! Bookmark not defined.
The <basefont> element:.....	Error! Bookmark not defined.
HTML Images.....	Error! Bookmark not defined.
The element:.....	Error! Bookmark not defined.
Wrapping text around images	Error! Bookmark not defined.
HTML Text Links.....	Error! Bookmark not defined.
The <a> element:	Error! Bookmark not defined.
Linking to a Page Section:	Error! Bookmark not defined.
Create Download Links:	Error! Bookmark not defined.
HTML Image Links	Error! Bookmark not defined.
HTML List.....	Error! Bookmark not defined.
Unordered List – The element.....	Error! Bookmark not defined.
Ordered List – The element.....	Error! Bookmark not defined.

The <marquee> element	Error! Bookmark not defined.
HTML Colors	Error! Bookmark not defined.
HTML Color Coding Methods:	Error! Bookmark not defined.
Color Names:	Error! Bookmark not defined.
HTML Tables	Error! Bookmark not defined.
The <th> Element	Error! Bookmark not defined.
Table Cellpadding and Cellspacing:	Error! Bookmark not defined.
Colspan and Rowspan Attributes	Error! Bookmark not defined.
Tables Backgrounds	Error! Bookmark not defined.
Using Table Caption:	Error! Bookmark not defined.
Using a Header, Body, and Footer:	Error! Bookmark not defined.
HTML Frames	Error! Bookmark not defined.
Advantages	Error! Bookmark not defined.
Limitations	Error! Bookmark not defined.
Creating Frame	Error! Bookmark not defined.
<frameset> Attributes	Error! Bookmark not defined.
Frameset rows Attribute	Error! Bookmark not defined.
Frameset cols Attribute	Error! Bookmark not defined.
Frame name Attribute	Error! Bookmark not defined.
Frame src Attribute	Error! Bookmark not defined.
Framing Rows and Columns together	Error! Bookmark not defined.
HTML Forms	Error! Bookmark not defined.
Text Input Controls	Error! Bookmark not defined.
Single-line text input controls	Error! Bookmark not defined.
Password input controls	Error! Bookmark not defined.
Multiple-Line Text Input Controls:	Error! Bookmark not defined.
Creating Button	Error! Bookmark not defined.
Checkboxes Control	Error! Bookmark not defined.
Radio box Control	Error! Bookmark not defined.
Select box Control	Error! Bookmark not defined.
File Select Boxes	Error! Bookmark not defined.
Hidden Controls:	Error! Bookmark not defined.
Submit and Reset Button	Error! Bookmark not defined.
Dynamic HTML	37
Advantages of DHTML	37
Browser Compatibility	Error! Bookmark not defined.
Components of DHTML	Error! Bookmark not defined.
DOM (Document Object Model)	Error! Bookmark not defined.
Components of DOM	Error! Bookmark not defined.
DHTML Tags	Error! Bookmark not defined.
Embedded tags	Error! Bookmark not defined.
Component tags	Error! Bookmark not defined.
Action tags	Error! Bookmark not defined.
DOM API Overview	Error! Bookmark not defined.
DOM Tree Nodes	Error! Bookmark not defined.
HTMLDocument	Error! Bookmark not defined.
HTMLElement	Error! Bookmark not defined.
Attr	Error! Bookmark not defined.
Text	Error! Bookmark not defined.
Event Handling	Error! Bookmark not defined.
Java Script	Error! Bookmark not defined.
Getting Started	Error! Bookmark not defined.
Event Functions	Error! Bookmark not defined.
onclick:	Error! Bookmark not defined.
onload:	Error! Bookmark not defined.
onmouseover:	Error! Bookmark not defined.
CSS(Cascading Style Sheets)	38
Internal Stylesheet	38

External Stylesheet.....	38
Inline Styles	Error! Bookmark not defined.
Adding Multimedia files to Web page	Error! Bookmark not defined.
Playing Multimedia.....	Error! Bookmark not defined.
Embedding Videos.....	Error! Bookmark not defined.
CSS Classes	Error! Bookmark not defined.
CSS IDs	Error! Bookmark not defined.
CSS Divisions.....	Error! Bookmark not defined.
Divisions.....	Error! Bookmark not defined.
CSS Spans.....	Error! Bookmark not defined.
CSS Margins.....	Error! Bookmark not defined.
CSS Text Properties.....	Error! Bookmark not defined.
CSS Font Properties.....	Error! Bookmark not defined.
CSS Backgrounds	Error! Bookmark not defined.
CSS Borders.....	Error! Bookmark not defined.
CSS Ordered & Unordered Lists.....	Error! Bookmark not defined.
Multiple Choice Questions.....	Error! Bookmark not defined.
9. Hosting Websites.....	39
Hosting your own Web site.....	39
Web Hosting Domain Names.....	40
Web Hosting Capacities.....	Error! Bookmark not defined.
Web Hosting E-mail Services	Error! Bookmark not defined.
Web Hosting Technologies.....	Error! Bookmark not defined.
Web Hosting Database Technologies	Error! Bookmark not defined.
Web Hosting Types.....	Error! Bookmark not defined.
10. Database Management System.....	41
Introduction.....	41
Datebase.....	41
Database Management System	41
Schema.....	42
Sub Schema	42
Database Models.....	Error! Bookmark not defined.
Conceptual database models	Error! Bookmark not defined.
The Entity-Relationship Model.....	Error! Bookmark not defined.
Entity	Error! Bookmark not defined.
Attributes	Error! Bookmark not defined.
Relationships.....	Error! Bookmark not defined.
Keys	Error! Bookmark not defined.
(i) Primary Key	Error! Bookmark not defined.
(ii) Candidate Key.....	Error! Bookmark not defined.
(iii) Super Key	Error! Bookmark not defined.
(iv) Concatenated or Composite Key	Error! Bookmark not defined.
(v) Foreign Keys	Error! Bookmark not defined.
(vi) Secondary or Alternate Keys.....	Error! Bookmark not defined.
Relationship between Tables.....	Error! Bookmark not defined.
Entity-Relation Diagram	Error! Bookmark not defined.
Physical Database Models	Error! Bookmark not defined.
Logical Database Models.....	Error! Bookmark not defined.
Hierarchical Data Model.....	Error! Bookmark not defined.
Network Data Model.....	Error! Bookmark not defined.
Network Database Management System (NDBMS).....	Error! Bookmark not defined.
Object Oriented Database Management System (OODBMS).....	Error! Bookmark not defined.
Relational Data Model.....	Error! Bookmark not defined.
What is a relation?	Error! Bookmark not defined.
Terminologies of RDBMS	Error! Bookmark not defined.
Data Sharing	Error! Bookmark not defined.
Data Independence.....	Error! Bookmark not defined.
Data Redundancy.....	Error! Bookmark not defined.

Cardinality	Error! Bookmark not defined.
Relation	Error! Bookmark not defined.
Normalization	Error! Bookmark not defined.
Degree	Error! Bookmark not defined.
Attributes	Error! Bookmark not defined.
Tuples	Error! Bookmark not defined.
Entity	Error! Bookmark not defined.
Instance	Error! Bookmark not defined.
Integrity (Data)	Error! Bookmark not defined.
Integrity (Referential)	Error! Bookmark not defined.
Cartesian Product	Error! Bookmark not defined.
Union	Error! Bookmark not defined.
Intersection	Error! Bookmark not defined.
Difference	Error! Bookmark not defined.
Codd's Rule	Error! Bookmark not defined.
Data Manipulation Concept	Error! Bookmark not defined.
SQL (Structured Query Language)	Error! Bookmark not defined.
SQL Process	Error! Bookmark not defined.
SQL in various RDBMSs	Error! Bookmark not defined.
MySQL	Error! Bookmark not defined.
Microsoft SQL Server	Error! Bookmark not defined.
ORACLE	Error! Bookmark not defined.
Microsoft Access	Error! Bookmark not defined.
SQL Commands	Error! Bookmark not defined.
DDL(Data Definition Language)	Error! Bookmark not defined.
DML(Data Manipulation Language)	Error! Bookmark not defined.
DCL (Data Control Language)	Error! Bookmark not defined.
Microsoft Access	43
Database	43
DBMS (Database Management System)	43
Microsoft Access 2003	43
Microsoft Office Access 2007	43
Microsoft Office Access 2010	Error! Bookmark not defined.
Opening Microsoft Access	Error! Bookmark not defined.
Menu/Tabs of Microsoft Office Access application	Error! Bookmark not defined.
Home Tab	Error! Bookmark not defined.
Create Tab	Error! Bookmark not defined.
External Data Tab	Error! Bookmark not defined.
Database Tools Tab	Error! Bookmark not defined.
Creating Database in Microsoft Access	Error! Bookmark not defined.
Creating Blank Database	Error! Bookmark not defined.
Creating Database using templates	Error! Bookmark not defined.
Opening an Existing Database file of Microsoft Access 2003/2007/2010	Error! Bookmark not defined.
Navigation Pane	Error! Bookmark not defined.
Datasheet View	Error! Bookmark not defined.
Design View	Error! Bookmark not defined.
Switching the views	Error! Bookmark not defined.
Creating a Table	Error! Bookmark not defined.
Creating Blank Table	Error! Bookmark not defined.
Creating Table with Design View	Error! Bookmark not defined.
Data Types(Attributes)	Error! Bookmark not defined.
Create Table using Templates	Error! Bookmark not defined.
Manipulating table structure	Error! Bookmark not defined.
Adding a field to existing table	Error! Bookmark not defined.
Saving the Table	Error! Bookmark not defined.
Setting Primary Key in the Table	Error! Bookmark not defined.
Accessing another table using Primary Key	Error! Bookmark not defined.
Forms	Error! Bookmark not defined.

Creating form with Form tool	Error! Bookmark not defined.
Creating form with Form Design	Error! Bookmark not defined.
Configuring the form controls using Property sheet	Error! Bookmark not defined.
Creating form with Form Wizard.....	Error! Bookmark not defined.
Creating Blank Form.....	Error! Bookmark not defined.
Query	Error! Bookmark not defined.
Queries through Query Wizard	Error! Bookmark not defined.
Query using the Design View	Error! Bookmark not defined.
Reports.....	Error! Bookmark not defined.
Creating Report with Report Tool.....	Error! Bookmark not defined.
Formatting Report.....	Error! Bookmark not defined.
Creating Reports with Design View.....	Error! Bookmark not defined.
Creating Blank Report	Error! Bookmark not defined.
Creating Report using Report Wizard.....	Error! Bookmark not defined.
Switch views in Reports.....	Error! Bookmark not defined.
Print Reports	Error! Bookmark not defined.
Multiple Choice Questions.....	Error! Bookmark not defined.

11. Introduction to ‘C’ Programming 44

The Basic Model of Computation	44
Program Concepts	44
Algorithms	Error! Bookmark not defined.
Characteristics of Algorithm	Error! Bookmark not defined.
Flow-charts	Error! Bookmark not defined.
Characteristics of Flow chart	Error! Bookmark not defined.
Flowchart Symbols	Error! Bookmark not defined.
Flow Chart examples	Error! Bookmark not defined.
Advantages of Flow charts	Error! Bookmark not defined.
Disadvantages of Flow charts	Error! Bookmark not defined.
Programming Languages	Error! Bookmark not defined.
Machine Level Language	Error! Bookmark not defined.
Assembly Level Language.....	Error! Bookmark not defined.
High Level Language.....	Error! Bookmark not defined.
Program Life Cycle.....	Error! Bookmark not defined.
History of Programming Languages	Error! Bookmark not defined.
FORTRAN.....	Error! Bookmark not defined.
Algol60	Error! Bookmark not defined.
COBOL.....	Error! Bookmark not defined.
LISP	Error! Bookmark not defined.
PL/I	Error! Bookmark not defined.
BASIC	Error! Bookmark not defined.
Simula67.....	Error! Bookmark not defined.
Pascal.....	Error! Bookmark not defined.
C	Error! Bookmark not defined.
Ada.....	Error! Bookmark not defined.
C++	Error! Bookmark not defined.
Perl.....	Error! Bookmark not defined.
Python.....	Error! Bookmark not defined.
Java	Error! Bookmark not defined.
Compilation	Error! Bookmark not defined.
Assembler	Error! Bookmark not defined.
Compiler.....	Error! Bookmark not defined.
Interpreter	Error! Bookmark not defined.
Linking and Loading.....	Error! Bookmark not defined.
Testing and Debugging	Error! Bookmark not defined.
Syntax Error.....	Error! Bookmark not defined.
Runtime Error	Error! Bookmark not defined.
Linking Error	Error! Bookmark not defined.
Logical Error.....	Error! Bookmark not defined.

Documentation.....	Error! Bookmark not defined.
Introduction to ‘C’ Language.....	46
Basic ideas about C.....	46
Character set	46
Variables.....	Error! Bookmark not defined.
Variable declaration.....	Error! Bookmark not defined.
Naming Variables	Error! Bookmark not defined.
Mapping Variable	Error! Bookmark not defined.
Identifiers	Error! Bookmark not defined.
Keywords.....	Error! Bookmark not defined.
Built-in Data Types.....	Error! Bookmark not defined.
Variable Definition	Error! Bookmark not defined.
Operators.....	Error! Bookmark not defined.
Unary Operator	Error! Bookmark not defined.
Binary Operator	Error! Bookmark not defined.
Ternary Operator.....	Error! Bookmark not defined.
Arithmetic operators	Error! Bookmark not defined.
Precedence of Arithmetical operators	Error! Bookmark not defined.
Relational Operator.....	Error! Bookmark not defined.
Precedence of Relational operators	Error! Bookmark not defined.
Logical Operator	Error! Bookmark not defined.
Precedence of Logical operators	Error! Bookmark not defined.
Assignment Operator	Error! Bookmark not defined.
Special Operator	Error! Bookmark not defined.
Comma Operator.....	Error! Bookmark not defined.
Sizeof() Operator	Error! Bookmark not defined.
Conditional Operator	Error! Bookmark not defined.
Parenthesis Operator ().....	Error! Bookmark not defined.
Bitwise Operator	Error! Bookmark not defined.
Precedence of Bitwise operators	Error! Bookmark not defined.
Pointer Operator.....	Error! Bookmark not defined.
Precedence of operators	Error! Bookmark not defined.
Expressions	Error! Bookmark not defined.
Constant Expression.....	Error! Bookmark not defined.
Integer Expression	Error! Bookmark not defined.
Float Expression	Error! Bookmark not defined.
Pointer Expression	Error! Bookmark not defined.
Constants and Literals.....	Error! Bookmark not defined.
Integer literals	Error! Bookmark not defined.
Floating point literals	Error! Bookmark not defined.
Character constants.....	Error! Bookmark not defined.
String literals.....	Error! Bookmark not defined.
Defining Constants.....	Error! Bookmark not defined.
The #define Preprocessor.....	Error! Bookmark not defined.
The const Keyword.....	Error! Bookmark not defined.
Simple assignment statement.....	Error! Bookmark not defined.
Basic input/output statement.....	Error! Bookmark not defined.
Types of I/O.....	Error! Bookmark not defined.
Console I/O Functions	Error! Bookmark not defined.
Formatted Console I/O Functions	Error! Bookmark not defined.
Format Specifications	Error! Bookmark not defined.
The printf () and scanf () Statements.....	Error! Bookmark not defined.
sprintf () and sscanf () Functions	Error! Bookmark not defined.
Unformatted Console I/O Functions	Error! Bookmark not defined.
gets () and puts ()	Error! Bookmark not defined.
Conditional Statements and Loops.....	47
Introduction.....	47
Decision making within a program	47
Conditions.....	Error! Bookmark not defined.

Relational Operators	Error! Bookmark not defined.
if statement.....	Error! Bookmark not defined.
if-else statement	Error! Bookmark not defined.
Multiple if statement	Error! Bookmark not defined.
else-if ladder	Error! Bookmark not defined.
Conditional Operator	Error! Bookmark not defined.
Loops	Error! Bookmark not defined.
Exit Controlled loops	Error! Bookmark not defined.
while loop	Error! Bookmark not defined.
for loop	Error! Bookmark not defined.
do while	Error! Bookmark not defined.
Nested loops.....	Error! Bookmark not defined.
Infinite loops.....	Error! Bookmark not defined.
Switch statement	Error! Bookmark not defined.
The break statement	Error! Bookmark not defined.
The continue statement	Error! Bookmark not defined.
Arrays	48
Declaring an array.....	48
Initializing array.....	48
One dimensional arrays	48
Two dimensional array	Error! Bookmark not defined.
Array manipulation.....	Error! Bookmark not defined.
Searching	Error! Bookmark not defined.
Insertion	Error! Bookmark not defined.
Deletion of an element from an array.....	Error! Bookmark not defined.
Sorting	Error! Bookmark not defined.
Selection Sorting.....	Error! Bookmark not defined.
Bubble Sorting	Error! Bookmark not defined.
Insertion Sorting	Error! Bookmark not defined.
Finding the largest/smallest element in an array	Error! Bookmark not defined.
Matrices Operations	Error! Bookmark not defined.
Addition Matrices	Error! Bookmark not defined.
Multiplication of matrices.....	Error! Bookmark not defined.
Transpose of a square matrix	Error! Bookmark not defined.
Null terminated strings as array of characters	Error! Bookmark not defined.
String variables	Error! Bookmark not defined.
Standard library string functions	Error! Bookmark not defined.
Functions.....	49
Top-down approach of problem solving	49
Modular programming.....	49
Functions.....	49
Standard Library of C functions.....	Error! Bookmark not defined.
Prototype of a function.....	Error! Bookmark not defined.
Definition of a function.....	Error! Bookmark not defined.
Accessing a function	Error! Bookmark not defined.
Return Type	Error! Bookmark not defined.
Formal parameter list	Error! Bookmark not defined.
Block structure.....	Error! Bookmark not defined.
Passing arguments to a Function.....	Error! Bookmark not defined.
Call by reference	Error! Bookmark not defined.
Pointer.....	Error! Bookmark not defined.
Call by value	Error! Bookmark not defined.
Command line argument.....	Error! Bookmark not defined.
Recursive Functions.....	Error! Bookmark not defined.
Arrays as function arguments.....	Error! Bookmark not defined.
Storage Classes	50
Scope and extent	50
Storage Classes in a single source file	Error! Bookmark not defined.
auto	Error! Bookmark not defined.

extern	Error! Bookmark not defined.
Static	Error! Bookmark not defined.
register	Error! Bookmark not defined.
Storage Classes in a multiple source files	Error! Bookmark not defined.
Automatic variables	Error! Bookmark not defined.
extern and static	Error! Bookmark not defined.
Structures and Unions	51
Declaring a Structure	Error! Bookmark not defined.
Structure variables	Error! Bookmark not defined.
Accessing Structure Elements	Error! Bookmark not defined.
Structure Initialization	Error! Bookmark not defined.
How Structure Elements are Stored	Error! Bookmark not defined.
Structure assignment	Error! Bookmark not defined.
Nested structure	Error! Bookmark not defined.
Structures and functions.....	Error! Bookmark not defined.
Passing structure to a function	Error! Bookmark not defined.
Structures and arrays.....	Error! Bookmark not defined.
Arrays of structures.....	Error! Bookmark not defined.
Structures containing arrays.....	Error! Bookmark not defined.
Pointers and structures	Error! Bookmark not defined.
typedef keyword	Error! Bookmark not defined.
Unions.....	Error! Bookmark not defined.
Declaring union variables	Error! Bookmark not defined.
File handling	52
Introduction.....	52
File Operations.....	52
Opening a file.....	Error! Bookmark not defined.
File Opening Modes.....	Error! Bookmark not defined.
Reading from a File	Error! Bookmark not defined.
Closing the File.....	Error! Bookmark not defined.
Writing to a File.....	Error! Bookmark not defined.
A File-copy Program.....	Error! Bookmark not defined.
String (line) I/O in Files.....	Error! Bookmark not defined.
Record I/O in Files.....	Error! Bookmark not defined.
Multiple Choice Questions.....	Error! Bookmark not defined.

Introduction to Computers

Introduction

Computer is an electronic device which is capable of receiving information (data) in a particular form and of performing a sequence of operations in accordance with a predetermined but variable set of procedural instructions (program) to produce a result in the form of information or signals.

In general, a computer is a digital electronic device which accepts data, processes it and gives information as output. It has several components like Monitor, CPU, Mouse, Processor, Memory etc.



कम्प्यूटर शब्द की उत्पत्ति कम्प्यूट शब्द से हुई है जिसका अर्थ है गणना करना। अतः बोलचाल की भाषा में इसे एक कैलकुलेटिंग डिवाइस माना जाता है जो ऐरिथमेटिक और लॉजिकल आपरेशन को तेजी के साथ कर सकता है परन्तु आज इसकी परिभाषा ही बदल गयी है क्योंकि अब कम्प्यूटर का उपयोग सिर्फ गणना तक सीमित नहीं है, आज इसका उपयोग म्यूजिक, ग्राफिक्स, इंटरनेट आदि कई अन्य क्षेत्र में भी हो रहा है। अतः अब कह सकते हैं कि यह एक इलेक्ट्रॉनिक डिवाइस है जो डाटा को एक्सेप्ट करता है, और एक विस्तृत स्टेप-बाई-स्टेप प्रोसेसिंग के बाद उसे इन्फार्मेशन में बदलता है और आउटपुट रिजल्ट प्रस्तुत करता है। यह डाटा को एक्सेप्ट, स्टोर और उन्हें मैनीपुलेट करता है।

History of Computers

History of Computer can be considered from arise of human culture as person knew the calculation, they used something for this purpose like, pebbles, stone etc. but as a device Roman's abacus is first device used in B.C for calculation. In A.D. various mechanical devices were invented for the calculation like Pascaline by Blaise Pascal, Joseph Jacquard invented loom that is 'programmed' using punched cards, Charles Babbage invented two machines Analytical engine and Difference engine and Hollerith's Census Machines (Tabulating machine). Atanasoff-Berry Computer (ABC) is a fully digital electronic device used for linear equation. Howard Aiken (IBM) had designed Mark I, the first operational general-purpose electro-mechanical Computer. John Mauchly and Presper Eckert make the Electronic Numerical Integrator and Calculator (ENIAC) First general purpose, digital electronic Computer used to compute a ballistic firing. Universal Automatic Computer (UNIVAC I), was the first commercially successful Computer. Two Era arises Mechanical Era (Before 1945) having mechanical devices and the Electronic Era (From 1945) having electronic processing technology. Electronic Era is divided into Four generations.

कम्प्यूटर्स का इतिहास पहले गणना के लिए प्रयोग लायी जाने वाली डिवाइसों में मेकैनिकल डिवाइसें थी, अबैकस को पहला कम्प्यूटर कहा जाता है। बाद में पास्कल, लॉरेंस, जैकब, एटॉसॉफबेरी आदि ने कई डिवाइसें बनायीं परन्तु किसी भी डिवाइस में मेमोरी नहीं थी तत्पश्चात् सत्रहवीं शताब्दी में चार्ल्स बैवेज ने एनालिटिकल और डिफरेंस मशीन का आविष्कार किया जिसमें **मेमोरी** डाली। उक्त मशीन के आविष्कार से ही आधुनिक युग की शुरुआत हुई बाद में आज की सभी कम्प्यूटर में मेमोरी सबसे बड़ी विशेषता है। इसी के कारण चार्ल्स बैवेज को कम्प्यूटर का पितामह कहा जाता है। ENIAC प्रथम इलेक्ट्रॉनिक कम्प्यूटर है। यही से इलेक्ट्रॉनिक कम्प्यूटर्स का युग शुरू हो गया।

Generation of Computer

Computers are divided in these forms of generation. Here the generations have been described time wise as well as technologies used.

■ First Generation(1945-1954)

In this very first generation of computers, it had been used Vacuum tube technology which makes a computer possible to do calculations.

इस प्रथम जनरेशन में वैक्यूम ट्यूब टेक्नोलॉजी का उपयोग किया गया था जिसने कंप्यूटर को साकार कर गणनाएं करना संभव किया ।

■ Second Generation(1955-1964)

In this generation segment of computers, it had been used Transistors which made a computer a little concise and faster to do the same.

कंप्यूटर के द्वितीय जनरेशन में ट्रांजिस्टर टेक्नोलॉजी का उपयोग किया गया था जिसने तब कंप्यूटर के आकार को थोड़ा छोटा एवं तेज कर दिया था ।

■ Third Generation(1965-1974)

In the third generation of computers, it had been used Integrated circuits which made this faster comparatively and reliable as well.

कंप्यूटर के तृतीय जनरेशन में इंटीग्रेटेड सर्किट्स (आईसी) टेक्नोलॉजी का उपयोग किया गया जिससे ये तुलनात्मक भरोसेमंद तथा तेज समझा गया ।

■ Fourth Generation(1975-Till Date)

In this generation of computers, there had been used micro processors inside to work far better comparatively. This is the most reliable among and very concise in size to be portable anywhere you want.

कंप्यूटर के चतुर्थ जनरेशन में माइक्रो प्रोसेसर टेक्नोलॉजी का उपयोग किया गया जो प्रथम, द्वितीय तथा तृतीय तीनों ही जनरेशन से काफी तेज, भरोसेमंद तथा साइज में छोटा पाया गया जिसे आप आसानी से कहीं भी इधर-उधर उठा एवं रख सकते हैं ।

■ Fifth Generation (Present and Next)

This is the generation of computers where computers are assigned automatic intelligence; they use artificial intelligence where they will use their own iQ too to solve a problem at end.

पंचम जनरेशन के कंप्यूटर में आर्टिफिशियल इंटेलिजेंस का उपयोग किया गया जो इसे कंप्यूटर टेक्नोलॉजी में सर्वोपरि सिद्ध करता है जिसमें यह अपने खुद के आई०क्यू० का भी इस्तेमाल करता है ।

Characteristics of Computers

Characteristics of Computers are likely to be defined or tell the capability of computers.

- **Speed:** Computers can carry out instructions in less than a millionth of a second. As you know computer can work very fast. It takes only few seconds for calculations that we take hours to complete. You will be surprised to know that computer can perform millions (1,000,000) of instructions and even more per second.

कंप्यूटर एक बहुत ही तीव्र कार्य करने वाला इलेक्ट्रॉनिक यंत्र है जो किसी निर्देश को पल भर में क्रियान्वित करता है । यह किसी कार्य को सेकंड के एक भाग में ही हल कर देता है जबकि उस कार्य को एक व्यक्ति घंटों तक कहीं हल कर पायेगा । आपको यह जानकर हैरानी हो सकती है की एक कंप्यूटर एक सेकंड के समय में एक मिलियन या उससे भी अधिक निर्देशों को क्रियान्वित कर सकता है ।

Data Representation & Computer Organization

Introduction

In the modern world of electronic, the term **Digital** is generally associated with a computer because the term **Digital** is derived from the way computers perform operation, by counting digits. For many years, the application of digital electronics was only in the computer system. But now-a-days, the digital electronic is used in many other applications. Following are some of the examples in which **Digital electronics** is heavily used.

- Industrial process control
- Military system
- Television
- Communication system
- Medical equipment
- Radar
- Navigation

Signal

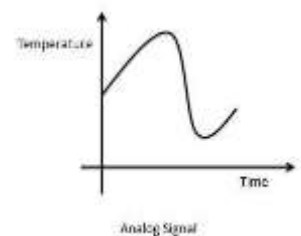
Signal can be defined as a physical quantity, which contains some information. It is a function of one or more than one independent variables. Signals are of two types.

- Analog Signal
- Digital Signal

Analog Signal

An **analog signal** is defined as the signal having continuous values. Analog signal can have infinite number of different values. In real world scenario, most of the things observed in nature are analog. Examples of the analog signals are following.

- Temperature
- Pressure
- Distance
- Sound
- Voltage
- Current
- Power

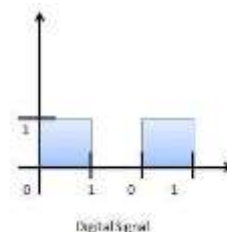


Digital Signal

A **digital signal** is defined as the signal which has only a finite number of distinct values. Digital signal are not continuous signal. In the digital electronic calculator, the

input is given with the help of switches. This input is converted into electrical signal which having two discrete values or levels. One of these may be called low level and another is called high level. The signal will always be one of the two levels. This type of signal is called digital signal. Examples of the digital signal are following.

- Binary Signal
- Octal Signal
- Hexadecimal Signal



The circuits that process that digital signal are called digital systems or digital circuits. Examples of the digital systems are following.

- Registers
- Flip-flop
- Counters
- Microprocessors

Comparison of Analog and Digital Signal

Analog Signal	Digital Signal
Analog signal has a infinite values.	Digital signal has a finite number of the values.
Analog signal has a continuous nature.	Digital signal has a discrete nature.
Analog signal is generate by transducers and signal generators.	Digital signal is generate by A to D converter.
Example of analog signal: sine wave, triangular waves.	Example of digital signal: binary signal.

Digital Number System

Adigital system can understand positional number system only where there are only a few symbols called digits and these symbols represent different values depending on the position they occupy in the number.

Number system is the key factor used in any mathematical or numeral representations to express the presence of the numbers. It is also used to notify certain numeral values to represent and demonstrate. There is number of Number Systems which that has its own number range and entities for e.g. Binary Number System(0,1), Octal Number System(0,1,2,3,4,5,6,7), Decimal Number System (0,1,2,3,4,5,6,7,8,9) and Hexadecimal Number System (0,1,2,3,4,5,6,7,8,9,A,B,C,D,E,F). Here we see these in details...

A value of each digit in a number can be determined using

- The digit
- The position of the digit in the number
- The base of the number system (where base is defined as the total number of digits available in the number system).

Binary Number System

It is a number system which base or radix is only 2. As its name implies it supports only two numbers namely 0 and 1. Any value in this number system is represented like this $(1000)_2$. Here base 2 shows that it is a Binary number system.

यह एक नंबर सिस्टम होता है जिसका बेस या रेडिक्स 2 होता है। जैसा की इसके नाम से प्रतीत होता है की यह केवल दो नंबर 0 और 1 को सपोर्ट करता है। किसी बाइनरी नंबर को कुछ इस तरह दर्शाते हैं $(1000)_2$ जहाँ सबस्क्रिप्ट वैल्यू नंबर सिस्टम के बेस को प्रदर्शित कर रहा है।

Multiple Choice Questions

1. The ____ format is usually used to store data

- a) BCD
- b) Decimal
- c) Hecadecimal
- d) Octal

Answer:a

2. The 8-bit encoding format used to store data in a computer is ____ .

- a) ASCII
- b) EBCDIC
- c) ANCI
- d) USCII

Answer:b

3. A source program is usually in ____ .

- a) Assembly language
- b) Machine level language
- c) High-level language
- d) Natural language

Answer:c

4. Which memory device is generally made of semi-conductors ?

- a) RAM
- b) Hard-disk
- c) Floppy disk
- d) Cd disk

Answer:a

5. The small extremely fast, RAM's are called as ____ .

- a) Cache
- b) Heaps
- c) Accumulators
- d) Stacks

Answer : a

6. The ALU makes use of ____ to store the intermediate results .

- a) Accumulators
- b) Registers
- c) Heap
- d) Stack

Answer:a

7. The control unit controls other units by generating ____ .

- a) Control signals

- b) Timing signals
- c) Transfer signals
- d) Command Signals

Answer:b

8. ____ are numbers and encoded characters, generally used as operands .

- a) Input
- b) Data
- c) Information
- d) Stored Values

Answer:b

9. The Input devices can send information to the processor,

- a) When the SIN status flag is set
- b) When the data arrives regardless of the SIN flag
- c) Neither of the cases
- d) Either of the cases

Answer:a

10. ____ bus structure is usually used to connect I/O devices .

- a) Single bus
- b) Multiple bus
- c) Star bus
- d) Rambus

Answer:a

11. The I/O interface required to connect the I/O device to the bus consists of ____ .

- a) Address decoder and registers
- b) Control circuits
- c) Both a and b
- d) Only b

Answer:c

12. To reduce the memory access time we generally make use of ____ .

- a) Heaps
- b) Higher capacity RAM's
- c) SDRAM's
- d) Cache's

Answer:d

13. ____ is generally used to increase the apparent size of physical memory .

- a) Secondary memory
- b) Virtual memory
- c) Hard-disk

d) Disks
Answer:b

14. MFC stands for,
a) Memory Format Caches.
b) Memory Function Complete.
c) Memory Find Command.
d) Mass Format Command.
Answer:b

15. The time delay between two successive initiation of memory operation _____.
a) Memory access time
b) Memory search time
c) Memory cycle time
d) Instruction delay
Answer:c

16. The decoded instruction is stored in _____.
a) IR
b) PC
c) Registers
d) MDR
Answer:a

17. Which registers can interact with the secondary storage ?
a) MAR
b) PC
c) IR
d) R0
Answer:a

18. During the execution of a program which gets initialized first ?
a) MDR
b) IR
c) PC
d) MAR
Answer:c

19. Which of the register/s of the processor is/are connected to Memory Bus ?
a) PC

b) MAR
c) IR
d) Both a and b
Answer:b

20. ISP stands for,
a) Instruction Set Processor
b) Information Standard Processing
c) Interchange Standard Protocol
d) Interrupt Service Procedure
Answer:a

21. The internal Components of the processor are connected by _____.
a) Processor intra-connectivity circuitry
b) Processor bus
c) Memory bus
d) Rambus
Answer:b

22. _____ is used to choose between incrementing the PC or performing ALU operations .
a) Conditional codes
b) Multiplexer
c) Control unit
d) None of these
Answer:b

23. The registers,ALU and the interconnection between them are collectively called as _____.
a) Process route
b) Information trail
c) information path
d) data path
Answer:d

24. _____ is used to store data in registers .
a) D flip flop
b) JK flip flop
c) RS flip flop
d) none of these
Answer:a

Operating System

Introduction

An operating system plays an important role in the use of Computer. It prepares a bare Machine usable for the user. In other words an operating system works as an interface between Computer and user. The operating system enables the user to use the system resources and access several other programs effectively. Windows operating system offer icons, Graphics based interface to the users and they can use mouse to perform a number of operations.

An operating system is system software and is the most important program that runs on your computer. It manages all other programs on the machine. Every PC has Operating System to run other applications or programs. This recognizes input from the keyboard or mouse, Sending output to the monitor, Operating System Keep track of files and directories on the disk and controlling peripheral devices such as disk drives and printers.

आपरेटिंग सिस्टम अलग-अलग हार्डवेयर के पार्ट्स को आपस में जोड़ने के लिए सिस्टम सॉफ्टवेयर अर्थात एक ड्राइवर का कार्य करता है। साथ ही एप्लीकेशन सॉफ्टवेयर के लिए प्लेटफार्म प्रदान करता है। जिस पर एप्लीकेशन सॉफ्टवेयर चलता है। जो भी नये एप्लीकेशन सॉफ्टवेयर या ड्राइवर इन्स्टाल किये जाते हैं सभी आपरेटिंग सिस्टम में जुड़ते जाते हैं। आपरेटिंग सिस्टम ही कम्प्यूटर को यूजेबल बनाता है।

Microsoft Windows

Microsoft Windows is a series of graphical interface operating systems developed by Microsoft. Microsoft introduced an operating environment named *Windows* as a graphical operating system shell for MS-DOS in response to the growing interest in graphical user interfaces.

विन्डोज एक ग्राफिक्स यूजर इन्टरफेस का सबसे लोकप्रिय आपरेटिंग सिस्टम है। यह मल्टी टॉस्किंग, नेटवर्क सपोर्टेड आपरेटिंग सिस्टम है। विन्डोज के कई वर्जन आये हैं, सर्वर तथा स्टैन्ड अलोन दोनों के लिए अलग आपरेटिंग सिस्टम है। यह टी.सी.पी./आई.पी. प्रोटोकाल को सपोर्ट करता है। फाइल, फोल्डर/डायरेक्ट्री मैनेजमेन्ट के साथ ही मेमोरी मैनेजमेन्ट करता है।

An Overview of Different Versions of Windows

Operating systems relating to Windows family are based on Graphical User Interface (GUI) and can be used on a desktop Computer / Network. Windows 9x refers to three operating systems like **Windows 95, Windows 98 and Windows ME**. **Windows 95** is now not in use. **Windows 98** was released in the year 1998. It was enhanced version of **Windows 95**. Another version of Windows called **Windows ME** was released in the year 2000 and then After **Windows XP, Windows Vista** and then **Windows 7** and Now Windows Family has released its latest version of Windows is **Windows 8**. These latest versions of Windows have improved multimedia capabilities, video editing features and enhanced Internet facilities and so on.

विन्डोज एक ग्राफिक्स यूजर इन्टरफेस का सबसे लोकप्रिय आपरेटिंग सिस्टम है। यह मल्टी टॉस्किंग, नेटवर्क सपोर्टेड आपरेटिंग सिस्टम है। विन्डोज के कई वर्जन आये हैं, सर्वर तथा स्टैन्ड अलोन दोनों के लिए अलग आपरेटिंग सिस्टम है। यह टी.सी.पी./आई.पी. प्रोटोकाल को सपोर्ट करता है। फाइल, फोल्डर/डायरेक्ट्री मैनेजमेन्ट के साथ ही मेमोरी मैनेजमेन्ट करता है।

Windows 95

It is introduced to 32-bit applications, plug and play hardware, preemptive multitasking, long file names of up to



255 characters, and provided increased stability over its predecessors. Windows 95 also introduced a redesigned, object oriented user interface, replacing the previous Program Manager with the Start menu, taskbar, and Windows Explorer shell.

विंडोज 95, 32-बिट एप्लीकेशन को सपोर्ट करने वाला माइक्रोसॉफ्ट का उस दौर में काफी प्रचलित ऑपरेटिंग सिस्टम था जिसमें प्लग एंड प्ले हार्डवेयर, सुरक्षित मल्टीटास्किंग, लम्बे फाइल नाम 255 अक्षरों तक और एक बेहतरीन यूजर इंटरफेस जिससे एक यूजर को उस पर कोई भी काम करने में काफी सरलता प्राप्त हुई। इस वर्जन में प्रोग्राम मैनेजर के स्थान पर स्टार्ट मीनू, टास्क बार, विंडोज एक्सप्लोरर शेल लाया गया।

Windows 98

Windows 98 has introduced the Windows Driver Model, support for USB composite devices, support for ACPI, hibernation, and support for multi-monitor configurations. Windows 98 also included integration with Internet Explorer 4 through Active Desktop and other aspects of the Windows Desktop Update.

विंडोज 98, विंडोज 95 के बाद का वर्जन है जिसने विंडोज ड्राइवर मॉडल लांच किया जो USB कम्पोजिट डिवाइस को सपोर्ट करता है। इसके कुछ अन्य फीचर जैसे ACPI को सपोर्ट करना, हाइबरनेट की सुविधा, एक साथ कई डिस्प्ले का कॉन्फिगरेशन करना इत्यादि। इंटरनेट एक्सप्लोरर 4 विंडोज के इसी वर्जन से लांच हुआ।



Windows XP

Now you have windows-XP from 2001 the improved version of Windows. It is 32-bit operating system that is quite popular on personal computers and laptops. It is quite stable product and is being continuously used till date. Many variations of Windows XP are there. The Microsoft has created 64-bit version of Windows-XP to run on them.

माइक्रोसॉफ्ट Win-XP विंडोज का लोकप्रिय वर्जन है जो कि 2001 से लेकर अब तक प्रयोग किया जा रहा है। अब तो इसका 32 बिट एवम् 64 बिट दोनों ही वर्जन माइक्रोसॉफ्ट ने विकसित कर दिया है।



Windows Vista

Windows Vista contains a number of new features from a redesigned shell and user interface to significant technical changes, with a particular focus on security features. It was available in a number of different editions, and has been subject to some criticism.

विंडोज विस्टा कई तरह के नए फीचर और नए विंडोज शेल के साथ प्रस्तुत हुआ जिसने कुछ तकनीकी बदलाव कर एक नया यूजर इंटरफेस प्रदान किया। इसमें सिक्यूरिटी फीचर पर ज्यादा बल दिया गया। इसके कुछ मुख्य परिवर्तन जैसे स्टार्ट मेनू, टास्क बार पर प्रोग्राम ग्रुपिंग, विंडोज एक्सप्लोरर एड्रेस बार। यह स्वयं के कई वर्जन में उपलब्ध है लेकिन यह अपनी कुछ खामियों की वजह से आलोचनाओं का शिकार हुआ।



Multiple Choice Questions

- 1.1 The main memory of the computer
- Controls the operations of computer.
 - Performs data processing functions.
 - Stores data and programs.
 - None of these.
- 1.2 Program counter (PC) contains
- Address of an instruction to be fetched
 - Instruction most recently fetched
 - Data to be written into memory
 - Data to be read from memory
- 1.3 MAR (memory address register)
- Contains data to be written into memory
 - Contains data to be read from memory
 - Specifies location in memory for next read/writer.
 - Contains address of next instruction to be fetched.
- 1.4 IR (Instruction register)
- Contains the address of an instruction to be fetched.
 - contains the instruction most recently fetched.
 - Specifies memory addresses.
 - None of these
- 1.5 Which of the following is not an address register?
- Index register
 - Segment pointer
 - Stack pointer
 - Data register
- 1.6 Following is not the state of Five-State process model
- Ready
 - Running
 - Not Running
 - New
- 1.7 Memory table is used
- To allocate main memory to processes
 - To allocate secondary memory to processes
 - To manage virtual memory
 - A, B and C are true
- 1.8 I/O table are used
- To assign I/O devices of computer
 - To manage I/O devices of computer system
 - A and B both true
 - A and B both false
- 1.9 The operating system control tables maintains file table, because
- These tables manage I/O devices and channels of the computer system.
 - These tables provide information about the existence of files, their location on secondary memory and their current status.
 - These tables provide information to manage process.
 - None of these
- 1.10 Processor in computer
- Control the operations of the computer/processes data functions.
 - Stores data and program
 - Moves data between computer and its external environment.
 - None of the above.
- 1.11 Memory buffer register (MBR) contains
- Data that is to be written into memory
 - A particular I/O device
 - Exchange data between I/O module and the processor.
 - The instruction most recently fetched.
- 1.12 I/O modules move data
- Between external environment and computer.
 - In the computer main memory
 - In processors
 - None of these
- 1.13 I/O OBR (I/O Buffer register) is
- Used for the exchange of data between an I/O module and the processor.
 - Specifies particular I/O device.
 - A and B both true.
 - A and B both false.

- 1.14 The operations of the processor are supervised by
- Control and Status register
 - Data register
 - Address register
 - Address register
- 1.15 User-visible register which of the following do not support GUI (Graphical User Interface)
- DOS
 - Windows
 - Linux
 - None of the above

2. State whether the following statements are True or False

- 2.1 To use a computer, you need an operating system
- 2.2 Linux is quite suitable for priority oriented multitasking operations but not suitable for multiuser tasks.
- 2.3 Deleted objects can be recovered from the Recycle Bin folder in Windows.
- 2.4 Dir and Directory are similar commands.
- 2.5 Formatting of all the partitions or mound points is a must for Linux installation.
- 2.6 Internal commands are stored on the disk in the form of a file.
- 2.7 When a folder is copied to another place, the subfolders in the folder also get copied.
- 2.8 The DATE command in DOS displays the current date as well as time.
- 2.9 Check boxes are used to present options requiring individual on/off decisions in Message boxes.
- 2.10 The FILES command is used at command prompt.
- 2.11 MS-Word operating system developed by Microsoft to overcome the limitation in its MS-DOS operating system.
- 2.12 The kernel performs the basic functions of an operating system.
- 2.13 Linux is a multi-user time-sharing system.
- 2.14 You can delete files by dragging them to Recycle Bin.

3. Match the following:

3.1	Screen background and main area of windows where you can open and manage files and programs	a.	Multimedia
3.2	A multipurpose windows used by Windows Operating System to display everything	b.	Copy file 1. txt + file 2txt file3.txt
3.3	A generic term for such computer application and files that combine standard computer capabilities with other media such as video and sound	c.	Desktop
3.4	To remove a directory with a large number of files and subdirectories	d.	Copy file 1. txt + file 2txt file3.txt
3.5	A command to create a directory	e.	DELTREE mydir
3.6	To rename a file available on drive a to another file name	f.	rmdir

3.7	A switch that will display the name of the file before being deleted	g.	rm -r
3.8	To copy several files into one file	h.	The act to hold down the mouse button while moving the mouse
3.9	Embedded	i.	REN A:\oldfile A:\newfile
3.10	Drag	j.	This is to insert an object, which is not linked on its originating document, into a destination document.
		k.	Window Explorer
		l.	MD mydir

4. Fill in the blanks

a. Edit	b. Alt + Delete	c. Move
d. Recycle Bin	e. cls	f. Desktop
g. Operating system	h. Task bar	i. Folder
j. Attrib	k. My Computer	l. Recover
m. My Document	n. Icon	o. Multi-Programming

- 4.1 The command..... can be used to transfer files from one directory to another.
- 4.2 is represented by a computer icon and it contains information regarding your computer system.
- 4.3 The name of the text editor included in DOS is.....
- 4.4 Device drivers control the interaction between the input/output devices and
- 4.5 The command is normally used to recover readable information from bad or defective disks.
- 4.6 A can contain files as well as sub-folders.
- 4.7 The..... command clears the screen.
- 4.8 The screen that you see once Windows 2000 is loaded is called the
- 4.9 The command displays or changes the file attributes.
- 4.10 The..... allows you to easily recover deleted files and folder in Windows.
- 4.11 In Windows you store all your files in a
- 4.12 A small graphic image that represents an application file command or a tool is called as
- 4.13 A general operating system related technique that allows two or more programs to execute concurrently on the same computer is called..... multi-programming.

Word Processing

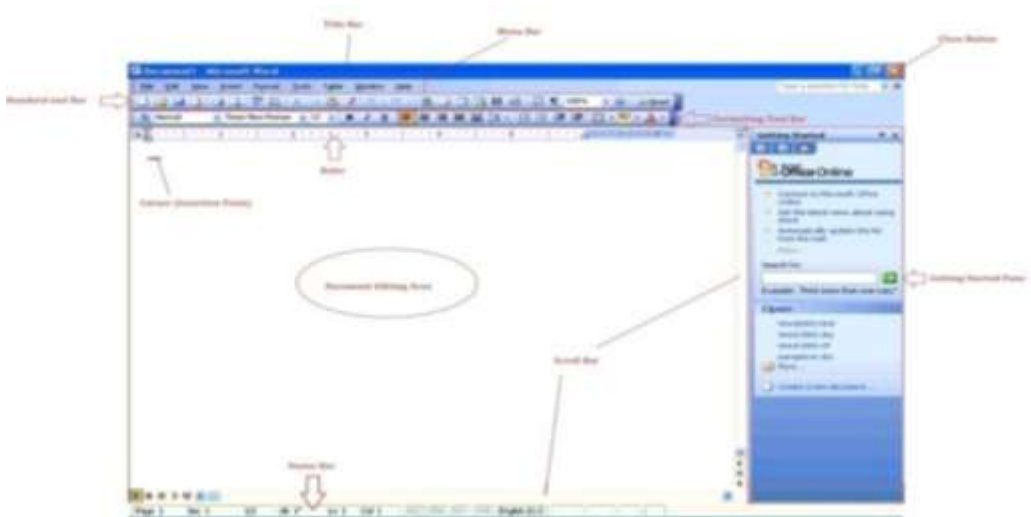
Word Processing Concepts

Word Processing is application software which is used to manipulate the text or words like letter drafting, paragraph composing and so on. Here we will discuss about Microsoft Word, Word processing software. Microsoft word is application software of Microsoft Office suite which has a large number of earlier and latest versions. Here we will discuss about only Microsoft Word 2003, 2007 & 2010 versions.

वर्ड प्रोसेसिंग एक तरह का एप्लिकेशन साफ्टवेयर है जो टेक्स्ट पैराग्राफ को तैयार करने और उस पर माडीफिकेशन करने में इस्तेमाल होता है। यहाँ हम माइक्रोसाफ्ट वर्ड जो कि माइक्रोसाफ्ट आफिस सूट का एक एप्लिकेशन है के बारे में जिक्र करेंगे। यहाँ हम माइक्रोसाफ्ट वर्ड के 2003, 2007 एवं 2010 के वर्जन के बारे में चर्चा करेंगे।

Microsoft Word 2003

In Microsoft Word 2003, Operational Commands reside in Menu Bar. There are 9 Menu Bar(s) namely *File*, *Edit*, *View*, *Insert*, *Format*, *Tools*, *Table*, *Window* and *Help*. Here's the brief introduction of all the Menu Bar in MS word 2003.



माइक्रोसॉफ्ट वर्ड 2003 एक वर्ड प्रोसेसिंग साफ्टवेयर है जो डॉक्यूमेंट, लेटर, टेबल एवं रिपोर्ट तैयार करता है। यह मीनू आधारित साफ्टवेयर है जिसमें सभी आपरेशनल कमांड होते हैं। इनके मीनू निम्नवत् हैं— जैसे *File*, *Edit*, *View*, *Insert*, *Format*, *Tools*, *Table*, *Window* and *Help*.

Microsoft Word 2007/2010

Microsoft Word 2007 helps you produce professional-looking documents by providing a comprehensive set of tools for creating and formatting your document in a new interface. Rich review, commenting, and comparison capabilities help you quickly gather and manage feedback from colleagues. Advanced data integration ensures that documents stay connected to important sources

Spreadsheet

Excel is an office package used for calculation and analysis of data. MS Excel provides a rich library in formula for calculation and a list of commands for analysis of data. Excel file is known as a workbook; a Workbook is collection of three *Worksheets* by default. You can create new spreadsheet according to your requirement.

स्प्रेडशीट एक कम्प्यूटर प्रोग्राम होता है वर्तमान समय में इस एप्लीकेशन का प्रयोग प्रायः काफी अधिक किया जाता है। यह एप्लीकेशन आपको एक साथ हजारों कैलकुलेशन करने की सुविधा प्रदान करता है। एक्सल फाइल को ओपन करने पर एक वर्कबुक प्रदर्शित होगा जिसमें तीन वर्कशीट बाई डिफाल्ट प्रदर्शित होते हैं। आप अपनी आवश्यकता के अनुसार नई वर्कशीट को ओपन कर उन्हें नाम दे सकते हैं। आगे हम इलेक्ट्रॉनिक स्प्रेडशीट को ओपन करने, सेल को ऐड्रेस करने, एक्टिव करने, प्रिंट करने, सेव करने एवं फार्मूला इत्यादि के विषय में चर्चा करेंगे।

Elements of Electronic Spreadsheet

There are number of elements in Microsoft Excel Application which facilitates a user a user friendly environment to fulfill the goal object, here are the elements *Workbook, Worksheet, Row, Column, Cell, Functions* and *Formulas*

माइक्रोसाफ्ट एक्सेल के कई एलिमेंट होते हैं जो स्प्रेडशीट सम्बन्धित कार्य को पूर्ण करने में सहायता प्रदान करते हैं जो निम्नवत् है।

Workbook: A Workbook is the collection of worksheets where the user works. A workbook can contain maximum 225 sheets to work in. Whenever a Workbook opens, it displayed three worksheets by default.

Worksheet: A Worksheet is the place where the user works and performs arithmetical and functional calculations. By default it is named as Sheet1, Sheet2, Sheet3....etc. A sheet can be renamed too.

Row: A Row is the horizontal block of the Worksheet or the Table which moves from left to right. A Row is named as the numbers 1, 2, 3..etc. There are 65,536 rows comes under Excel Application.

Column: A Column is the vertically situated in the worksheet or the table which flows from top to bottom. It is named as A, B, C... etc in Excel Application. There are 256 Columns in Excel Worksheet.

Cell: A Cell in the intersection of Row and Column. It is a place where the user work and perform the task. Whenever a user has to work in it, it has to be activated by clicking. The Collection of Cells is known as Gridlines.

Functions: Functions are the built in commands to perform a specific task. A function is system defined reserve words with specific arguments to

वर्कबुक-ये अनेक वर्कशीट का कलेक्शन है। जब आप एक्सल फाइल ओपन करते हैं तो स्क्रीन पर एक वर्कबुक प्रदर्शित होती है जिसमें बाई डिफाल्ट तीन वर्कशीट प्रदर्शित होते हैं। एक वर्कबुक में अधिकतम 225 वर्कशीट खोले जा सकते हैं। वर्कबुक में नेवीगेशन बटन के माध्यम से एक वर्कशीट से दूसरे वर्कशीट पर जा सकते हैं। वर्कबुक व्यवस्थित तरीके से आपको कार्य करने में सुविधा उपलब्ध कराता है।

वर्कशीट-ये रो और कॉलम को मिलाकर बनती है। यह एक ऑर्गनाइजेशन के फाइनेन्सियल वर्कशीट प्रोजेक्ट थिसिस इत्यादि की प्लानिंग के लिए प्रयोग की जाती है।

रो-ये सेल्स से बना हॉरीजॉन्टल ब्लॉक होता है जो वर्कशीट की पूरी चौड़ाई में बाए से दाए की ओर चलता है। रो में, वर्कशीट के बाएँ किनारे पर, ऊपर से नीचे की ओर नम्बर डाले जाते हैं। ऐरो-की एवं माउस के माध्यम से आप एक रो से दूसरे रो में आसानी से जा सकते हैं। वर्कशीट में अधिकतम 65536 रोज होते हैं।

कालम-ये सेल का एक वर्टिकल ब्लॉक होता है जो पूरी वर्कशीट में चलता है। एक कालम से दूसरे कालम में जाने हेतु ऐरो-की या माउस का प्रयोग किया जाता है। एक वर्कशीट में 256 कॉलम होते हैं।

सेल-ये रोज और कॉलम का इंटरसेक्शन होता है। सेल में किसी प्रकार का इंट्री करने से पूर्व सेल को एक्टिव करना आवश्यक है। सेल को ऐक्टिव करने के लिए सेल पर माउस से क्लिक करना होगा। क्लिक करने पर सेल सेलेक्ट हो जाता है तत्पश्चात् आप उक्त सेल में कार्य कर सकते हैं।

फंक्शन-फंक्शन पहले से निर्धारित फार्मूला होते हैं जिनकी

perform a certain task.

Formulas: Formulas are the tricks with specific procedures, yields the desired result. A formula is initiated with (=) Sign; it perform some operations like mathematical calculations and Logical operations and so on.

Formula Bar: It is the bar where we write formulas and functions according to our requirement. We can even edit formulas and functions in it.

Name Box: It is the box on the formula bar that gives the address of each cell.

Scroll Bar: By using this button we move and scroll the view of the sheet quickly.

Active Worksheet: The worksheet on which we are presently working.

Sheet Tab: Whenever we open a workbook, we find three worksheets by default, by using *Sheet tab* we can open any worksheet. Each worksheet is identified by label given as Sheet1, Sheet2, Sheet3...etc. You can rename the sheet name according to your requirement.

सहायता से आप जटिल से जटिल गणनायें कर सकते हैं। इसमें ऐसे सैकड़ों फंक्शन हैं जिनकी सहायता से आप इंजीनियरिंग गणनायें, सांख्यिकीय गणनायें, वित्तीय गणनायें और पाठ्य सम्बन्धी बहुत से कार्य कर सकते हैं।

फॉर्मूला—एक्सेल में फॉर्मूला हमेशा एक ईक्वल टू (=) चिन्ह से प्रारंभ होता है। आप एक्सेल में फॉर्मूला का प्रयोग हजारों, लाखों डाटा में एक साथ कर सकते हैं।

फॉर्मूला बार—फॉर्मूला बार एक कॉन्स्टेंट वैल्यू या फॉर्मूला, जो ऐक्टिव सेल में प्रयोग होता है, प्रदर्शित करता है। फॉर्मूला बार का प्रयोग, सेल कंटेंट्स को एडिट करने में भी होता है।

नेम बाक्स—नेम बाक्स, फॉर्मूला बार के बाएँ किनारे पर होता है। यह सिलेक्टेड सेल, चार्ट आइटम या ड्राइंग ऑब्जेक्ट की स्थिति को बताता है यदि B6 पर कोई इंट्री किया गया है तो उस सेल को ऐक्टिव करते ही नेम बाक्स में B6 प्रदर्शित होने लगेगा।

स्काल बार—स्काल बटन्स का प्रयोग शीट में शीघ्रता से मूव करने के लिए किया जाता है।

ऐक्टिव वर्कशीट—वर्तमान में हम जिस वर्कशीट पर काम रहे हैं वह वर्कशीट ऐक्टिव वर्कशीट कहलाता है।

शीट टैब्स—एक टैब, एक वर्क बुक विंडो के नीचे की ओर होता है जो एक वर्कशीट का नाम प्रदर्शित करता है। नेवीगेशन बटन का प्रयोग कर आप एक शीट से दूसरे शीट पर जा सकते हैं।

Microsoft Excel 2003

It is earlier version of Microsoft Excel package, in Excel 2003 version, the operational and functional commands are situated in *Menus* which that let the user to perform tasks on the Spreadsheet. It is displayed in Gridlines means its working area is the collection of Rows & Columns and that is formally known as Sheet. Microsoft Excel 2003 contains 9 menus of different kinds and moods like *File, Edit, View, Insert, Format, Tools, Data, Window* and *Help*. Here we discuss about the Menus and their operational commands in brief.

माइक्रोसाफ्ट एक्सेल 2003 एक स्प्रेडशीट एप्लिकेशन है जिसके कमांड मीनू आधारित होते हैं। यह माइक्रोसाफ्ट एक्सेल 2007 के पहले का वर्जन है। यह ग्रीडलाइन की तरह प्रदर्शित होता है जो रो और कालम के कम्बिनेशन से बनता है जिसे हम वर्कशीट कहते हैं। माइक्रोसाफ्ट एक्सेल 2003 में नौ मीनू होते हैं जो निम्नवत् हैं—*File, Edit, View, Insert, Format, Tools, Data, Window* एवं *Help*

Microsoft Excel 2007/2010

Microsoft Office Word 2007 helps you produce professional-looking documents by providing a comprehensive set of tools for creating and formatting your document in a new interface. Rich review, commenting, and comparison capabilities help you quickly gather and manage feedback from colleagues. Advanced data integration ensures that documents stay connected to important sources of business information

Microsoft Excel 2010 provides a rich library of functions and formulas which avail the user to work in a user friendly environment. It contains a comprehensive tools and features with rich contents to grasp the things faster. Unlike earlier version of Microsoft Excel 2003 & 2007, it has changed its integrated environment with better look and concise group of tools.

Presentation

Introduction to Presentation Package

PowerPoint a best presentation program of MicrosoftOffice and each page of presentation is called slide. It is used for creating animations. The objective of this chapter is to make understand the reader that how to create presentation using template, how to Open existing presentation slide, how to Run a Slide Show during presentation, how to create table, insert clip Art, Pictures etc.

माइक्रोसॉफ्ट पॉवरपॉइंट में, जैसाकि अधिकांश अन्य प्रेजेंटेशन सॉफ्टवेयर में होता है, टेक्स्ट, ग्राफिक्स, मूवीज और अन्य ऑब्जेक्ट्स को अलग-अलग पेजेस या स्लाइड्स पर रखी जाती हैं। एक प्रेजेंटेशन की ओवरऑल डिजाइन को एक मास्टर स्लाइड से कंट्रोल किया जा सकता है। प्रेजेंटेशन को कई प्रकार के फाइल फॉर्मेट में सेव और रन किया जा सकता है।

Basics of Microsoft PowerPoint

There are few terms of Microsoft PowerPoint we will mention and discuss; here they are as follows...

Presentation

A PowerPoint presentation is a presentation created using Microsoft PowerPoint software. The presentation is a collection of individual slides that contain information on a topic. PowerPoint presentations are commonly used in business meetings and for training and educational purposes.

प्रेजेंटेशन डाटा को व्यवस्थित तरीके से प्रदर्शित करने का एक सुलभ तरीका है जिसके माध्यम से आप किसी विषय विशेष के सुचना की प्रदर्शनी बनाकर प्रस्तुत कर सकते हैं। एक प्रेजेंटेशन ढेर सारे स्लाइड का समूह होता है जहाँ हम प्रेजेंटेशन के विषय से सम्बंधित सुचना को इमेज, टेक्स्ट, ऑडियो एवं विडियो के माध्यम से प्रदर्शित करते हैं।

Slides

Slide is a content page of the PowerPoint Presentation which completes a page to be printed along with notes pages. It is the place using where you can type or insert the content about a presentation; color it, assign a theme and style etc to make the presentation attractive

स्लाइड किसी प्रेजेंटेशन में एक पेज की तरह है जहाँ हम प्रेजेंटेशन के विषय से सम्बंधित सुचना प्रदर्शित करते हैं। स्लाइड में कोई भी टेक्स्ट प्लेस होल्डर के माध्यम से इन्सर्ट करते हैं। और कलर एवं थीम का इस्तेमाल कर प्रेजेंटेशन को आकर्षक बनाते हैं।

Layout

Layout refers to the way things are arranged on a slide. A layout contains placeholders, which in turn hold text such as titles and bulleted lists and slide content such as tables, charts, pictures, shapes, and clip art.

लेआउट किसी भी प्रेजेंटेशन में कंटेंट या स्लाइड के व्यवस्थापन के विषय वस्तु को बोलते हैं। प्रेजेंटेशन में स्लाइड के लेआउट में प्लेस होल्डर होते हैं जहाँ हम टेक्स्ट और वैल्यू इन्सर्ट करते हैं। स्लाइड के लेआउट में हम पिक्चर, टेबल, चार्ट,

टेक्स्ट, ऑटो शेप इत्यादी इन्सर्ट कर सकते हैं। प्रेजेंटेशन में स्लाइड कई लेआउट होते हैं जिन्हें हम अपने जरूरत के हिसाब से चुन सकते हैं।

View

Microsoft PowerPoint provides several views in the presentation you can use and view and demonstrate that as well. We have Normal view, Slide Sorter view, Notes Pages view, Slide Show view, Slide Master View, Handouts Master, Notes Master view etc

माइक्रोसॉफ्ट ऑफिस पॉवरपॉइंट प्रेजेंटेशन तैयार करने या उसे देखने और प्रदर्शित करने के लिए कई तरह के व्यू प्रोवाइड करती है जैसे नार्मल व्यू, स्लाइड सॉर्टर व्यू, नोट्स पेजेज व्यू, हैंडआउट मास्टर व्यू, नोट्स मास्टर व्यू इत्यादि।

SlideShow

The continuous display of images, text or shapes with a certain transition or animation either sequentially or at random. Slide shows are created by stand-alone applications or a slide show function within a photo editor. The interval between images is also selected by the user as well as an audio file to provide background music.

स्लाइड शो प्रेजेंटेशन का एक व्यू होता है जो किसी भी प्रेजेंटेशन के रन मोड (प्रिव्यू मोड) को दर्शाता है। इस व्यू के अंतर्गत प्रेजेंटेशन के अंतर्गत रचित सभी एलिमेंट को उनके सेटिंग एवं निर्देशन के हिसाब से प्रदर्शित करता है।

Placeholder

In Microsoft PowerPoint, a placeholder is a box with a dotted outline, designed for the placement of content on the slide. This placeholder is most commonly used for text. You will see a prompt within the placeholder such as "Click to add text".

प्लेस होल्डर स्लाइड ले लेआउट पर स्थित एक एलिमेंट होता है जो स्लाइड पर किसी प्रकार का टेक्स्ट इनपुट करने या इन्सर्ट करने के लिए उपयोग में आता है। एक प्लेस होल्डर में यदि आप कंटेंट या टेक्स्ट उसके लिमिट क बाहर इन्सर्ट करते हैं तब प्लेस होल्डर टेक्स्ट को सकुचित कर (फॉन्ट साइजछोटा कर) उन्हें उसी प्लेस होल्डर के अंतर्गत सिमित रखता है।

Design Template

A design template acts like a designer and decorator for the slides. You use a number of theme templates, and colors and controls to do it possible. It is created so that even though different slide types can have different layouts and graphics, the whole presentation goes together as an attractive package.

प्रेजेंटेशन में कई तरह के टेम्पलेट उपलब्ध हैं जिन्हें आप इस्तेमाल कर एक निश्चित तथा नियत कलर थीम का इस्तेमाल कर आप टेम्पलेट इस्तेमाल कर सकते हैं एवं डिजाइन कर सकते हैं। आप प्रेजेंटेशन के स्लाइड में अलग-अलग तरह के कलर एवं डिजाइन सेट कर सकते हैं।

Microsoft PowerPoint 2003

Microsoft PowerPoint 2003 is used to create Presentations typically have the file extension .ppt; however, you can also save PowerPoint presentations as Adobe Acrobat documents with the file extension .pdf. Finally, you can save your presentation as a web page, with the file extension .html or .htm. The operational commands of MS PowerPoint 2003 reside in menus and sub-menus where we can get those and execute them.

माइक्रोसॉफ्ट पॉवरपॉइंट 2003 जो एक प्रेजेंटेशन सॉफ्टवेयर है, प्रेजेंटेशन बनाने के लिए इस्तेमाल होती है। इसका एक्सटेंशन .ppt होता है। इस प्रेजेंटेशन को आप एडब एक्रोबेट डॉक्यूमेंट में कन्वर्ट कर सकते हैं और इसे वेब पेज फाइल में भी सेव कर सकते हैं। माइक्रोसॉफ्ट पॉवरपॉइंट के ऑपरेशनल कमांड्स मीनू एवं सब-मीनू में रहते हैं।



Internet

Introduction

It is a global system to interconnect computer network. You can connect your computer to any computer anywhere either in India or abroad. Internet is wide area network which allows a user to access the data or information stored on web and it provide number of facilities like email, web portals, chat, social networking, blogging, online transactions and so on.

इन्टरनेट एक नेटवर्क जाल होता है जो ग्लोबल स्तर पर सभी कंप्यूटरको इंटरकनेक्ट करता है। इन्टरनेट एक वाइड एरिया नेटवर्क होता है जो किसी इन्टरनेट यूजर को वेब पर स्टोर्ड (स्थित) किसी भी डाटा या इनफार्मेशन को एक्सेस करने की सुविधा देता है। इसके द्वारा प्रदत्त कई तरह की सर्विसेज हैं जैसे ईमेल, वेब पोर्टल्स, चैट, सोशल नेटवर्किंग, ब्लॉगिंग, ऑनलाइन ट्रांजेक्सन इत्यादि।

विश्व में प्रतिदिन एक करोड़ से भी अधिक लोगों द्वारा उपयोग होने वाला, हजारों तकनीकों और दर्जनों सर्विसेज का एक बहुत ही कॉम्प्लेक्स कॉम्बिनेशन है। इंटरनेट केबल या टेलीफोन लाइन से जुड़े कम्प्यूटरों की एक ऐसी विश्वव्यापी अन्तर्सम्बन्धित शृंखला है जिसके माध्यम से कहीं भी आंकड़ों व कार्यक्रमों को तत्काल प्राप्त या प्रेषित किया जा सकता है।

History of Internet

It began in 1970's and 1980's. The Internet as we know it today began as the ARPANET (Advanced Research Projects Agency Network) built by a division of the Department of Defense. Many local area networks connected to the ARPANET with TCP/IP. *TCP-Transmission Control Protocol/IP-Internet Protocol* was developed in 1974. The ARPANET was shut down in 1990 due to newer network technology and the need for greater bandwidth on the backbone. In the late '70's the NSFNET, the National Science Foundation Network was developed. This network relied on super computers in San Diego; Boulder; Champaign; Pittsburgh; Ithaca; and Princeton. Each of these six super computers had a microcomputer tied to it which spoke TCP/IP.

Further developments in networking lead to the design of the ANSNET -- Advanced Networks and Services Network. ANSNET was a joint effort by MCI, Merit and IBM specifically for commercial purposes. This large network was sold to AOL in 1995. The National Science Foundation then awarded contracts to four major network access providers: Pacific Bell in San Francisco, Ameritech in Chicago, MFS in Washington DC and Sprint in New York City. By the mid '80's the collection of networks began to be known as the "Internet" in university circles. TCP/IP remains the glue that holds it together. In January 1992 the Internet Society was formed – a misleading name since the Internet is really a place of anarchy. It is controlled by those who have the fastest lines and can give customers the greatest service today. The primary Internet-related applications used today include: Email, News retrieval, Remote Login, File Transfer and World Wide Web access and development.

इंटरनेट की शुरुवात 1970 एवं 1980 के दशक में हुआ था। इन्टरनेट ARPANET (एडवांस रिसर्च प्रोजेक्ट्स एजेंसी नेटवर्क) के नाम से डिफेंस डिपार्टमेंट द्वारा शुरू किया गया था। 1974 में कई लोकल एरिया नेटवर्क ARPANET से TCP/IP की मदद से कनेक्ट किये जाते थे। सूचनाओं के आदान-प्रदान के लिए जिस नियम का प्रयोग किया जाता है उसे ट्रांसमिशन कन्ट्रोल प्रोटोकाल या इंटरनेट प्रोटोकाल कहते हैं। ट्रांसमिशन कन्ट्रोल प्रोटोकाल में डाटा कई छोटे-छोटे पैकेटों में विभाजित होता है जबकि इंटरनेट प्रोटोकाल का कार्य पैकेटों पर गन्तव्य पतों की सूचना डालना होता है। किसी भी कम्प्यूटर को इंटरनेट से जोड़ने के लिए टेलीफोन लाइन को इंटरनेट सर्विस प्रोवाइडर से जोड़ना पड़ता है। भारत में इंटरनेट सेवा का सर्वप्रथम उपयोग 15 अगस्त, 1995 को विदेश संचार निगम लिमिटेड द्वारा किया गया था तत्पश्चात् अन्य कम्पनियों द्वारा भी इंटरनेट का उपयोग मुख्य रूप से किया जाने लगा।



Web Programming

Web page is a document on internet written and constructed using HTML and are translated by your Web browser. Web pages can either be static or dynamic. Static pages show the same content each time they are viewed. Dynamic pages have content that can be changed while run time. A web page can be designed using several web page technologies like HTML, ASP, PHP, ASP.NET, Adobe Dreamweaver, Cold Fusion and many more. Here we will be discussing some of them.

वेबपेज एचटीएमएल (हाइपर टेक्स्ट मार्कअप लैंग्वेज) पर लिखा हुआ डाक्यूमेंट्स होता है जिसको ट्रांसलेट करने के लिए वेब ब्राउजर का प्रयोग होता है। वेब पेज दो प्रकार के होते हैं – स्टैटिक और डाइनेमिक। वेब पेज क्रिएट करने के संभावित तकनीक हैं – एचटीएमएल, एसपी, पीएचपी, एसपी.नेट, एडब ड्रीमवीवर, कोल्ड फ्यूजन इत्यादि। यहाँ हम कुछ वेब तकनीक के बारे में चर्चा करेंगे।

URL (Uniform Resource Locator)

Every Web page has a unique address called a URL which identifies where it is located on the Web. For example the URL for Google <http://www.google.co.in>. The basic parts of a URL often provide "clues" to where a web page originates and who might be responsible for the information at that page or site.

यूआरएल प्रत्येक पेज का अपना अलग यूनीक एड्रेस होता है जिसे यूआरएल (यूनिफार्म रिसोर्स लोकेटर) कहते हैं। यह वेब पर उस पेज के लोकेशन को आइडेंटिफाई करता है।



HTML (Hyper Text Markup Language)

HyperText Markup Language is a markup language that web browsers use to interpret and compose text, images and other material into visual or audible web pages. Default characteristics for every item of HTML markup are defined in the browser, and these characteristics can be altered or enhanced by the web page designer's additional use of CSS (Cascading Style Sheets).

The information on the web server is compiled in Hyper Text Markup Language. It has useful text and images linked to different documents. It deals with images, sounds and videos etc.

एचटीएमएल एक वेब पेज डिजाइनिंग लैंग्वेज है जो वेब पेज में प्रदर्शित डाटा को कम्पाइल या ट्रांसलेट करता है। इसमें टेक्स्ट एवं इमेजेज के माध्यम से दूसरे भिन्न डॉक्यूमेंट से लिंक करते हैं। HTML द्वारा निर्मित वेब पेज टेक्स्ट, इमेज, साउंड एवं विडियो को प्रदर्शित कर सकते हैं।

एचटीएमएल एक साधारण लैंग्वेज है जो वेब पेज क्रियेट करने में इस्तेमाल होती है। एचटीएमएल एक प्रकार के <tag> WebPageDesigning के लिए इस्तेमाल किया जाता है। HTML में ज्यादातर <tag>....</tag> इस तरह प्रयोग होता है। <tags> Web Page Document के Content को वर्णित करता है।

एचटीएमएल एक ओपेन Source Code होता है जिसकी Coding सामान्यतः Notepad में की जाती है जिसका File Extension .html होता है। ये फाईल स्वतः Web Page File में रूपान्तरित हो जाती है। जिसे हम अपने कम्प्यूटर सिस्टम के Default Web Browser में देख सकते हैं।

PHP

PHP (recursive acronym for "PHP: Hypertext Preprocessor") is a widely-used Open Source general-purposescripting language that is especially suited for Web development and can be embedded into HTML.

PHP is an HTML-embedded scripting language. Much of its syntax is borrowed from C, Java and Perl with a couple of unique PHP-specific features thrown in. The goal of the language is to allow web developers to write dynamically generated pages quickly."

This is generally a good definition of PHP. However, it does contain a lot of terms you may not be used to. Another way to think of PHP is a powerful, behind the scenes scripting language that your visitors won't see!

When someone visits your PHP webpage, your web server processes the PHP code. It then sees which parts it needs to show to visitors (content and pictures) and hides the other stuff (file operations, math calculations, etc.) then translates your PHP into HTML. After the translation into HTML, it sends the webpage to your visitor's web browser.

```
<html>
<head>
<title>My First PHP Page</title>
</head>
<body>
<?php
echo "Hello World!";
?>
</body>
</html>
```

Display:

Hello World!

If you save this file and place it on PHP enabled server and load it up in your web browser, then you should see "Hello World!" displayed. If not, please check that you followed our example correctly.

We used the PHP function echo to write "Hello World!" and we will be talking in greater depth about this PHP function and many others later on in this tutorial.

```
<html>
<head>
<title>My First PHP Page</title>
</head>
<body>
<?php
echo "Hello World! ";
echo "Hello World! ";
echo "Hello World! ";
echo "Hello World! ";
echo "Hello World! ";
?>
```

Dynamic HTML

The term Dynamic HTML, often abbreviated as DHTML, refers to the technique of making Web pages dynamic by client-side scripting to manipulate the document content and presentation. Web pages can be made more lively, dynamic, or interactive by DHTML techniques.

With DHTML you can prescribe actions triggered by browser events to make the page more lively and responsive. Such actions may alter the content and appearance of any parts of the page. The changes are fast and efficient because they are made by the browser without having to network with any servers. Typically the client-side scripting is written in Java script which is being standardized.

डायनामिक एचटीएमएल एक टर्म है जिसका प्रयोग डायनामिक वेब पेज बनाने में किया जाता है जिसमें क्लाइंट साइड से किसी विशेष प्रकार की स्क्रिप्टिंग कर वेब डॉक्यूमेंट को मैनिपुलेट किया जाता है। कोई वेब पेज डायनामिक एचटीएमएल की मदद से और भी ज्यादा डायनामिक एवं प्रभावी हो जाता है जो किसी भी प्रकार के इवेंट को रन टाइम में ही इम्प्लीमेंट करने की क्षमता रखता है।

Contrary to what the name may suggest, DHTML is not a markup language or a software tool. It is a technique to make dynamic Web pages via client-side programming. In the past, DHTML relies on browser/vendor specific features to work. Making such pages work for all browsers requires much effort, testing, and unnecessarily long programs.

डायनामिक एचटीएमएल कोई सॉफ्टवेयर या एप्लीकेशन नहीं है बल्कि एक तकनीक है जिसकी मदद से वेब पेज डिजाइन किये जाते हैं। एक डायनामिक वेब पेज बनाने के लिए आपको एचटीएमएल, स्क्रिप्ट (जावा या विजुअल बेसिक) एवं कैस्केडिंग स्टाइल शीट की आवश्यकता होती है जो प्लेटफॉर्म इंडिपेंडेंट हैं। इन्हें क्रिएट करने के लिए आपको किसी खास एप्लीकेशन या सॉफ्टवेयर की निर्भरता नहीं रहती।

Standardization efforts at W3C and elsewhere are making it possible to write standard based DHTML that work for all compliant browsers.

Standard-based DHTML involves three aspects:

- Java script for cross-browser scripting
- Cascading Style Sheets (CSS) for style and presentation control.
- Document Object Model (DOM) for a uniform programming interface to access and manipulate the Web page as a document.

When these three aspects are combined, you get the ability to program changes in Web pages in reaction to user or browser generated events, and therefore to make HTML pages more dynamic.

Popular with Web developers, supported by all major browsers, and standardized, Javascript provides the ability to program browser actions in response to events. To have true cross-platform DHTML, we still need a uniform way for Javascript to access and manipulate Web documents. This brings us to the DOM.

Advantages of DHTML

DHTML is merely a browser feature that provides your browser (Web page) to be dynamic. DHTML is not Java script although it relies on it, but Java script used in webpage relies heavily on the fourth generation browser features. So, in short although it is Java script and HTML but can't be called so because of its reliance on the browser features. Only those 4th generation browser allows over web page to be dynamic.

डायनामिक एचटीएमएल एक ब्राउजर फीचर है जो सामान्यतः चतुर्थ जनरेशन ब्राउजर द्वारा ही सपोर्ट किया जाता जाता है। डायनामिक एचटीएमएल को जावा स्क्रिप्ट नहीं कहा जा सकता बल्कि यह जावा स्क्रिप्ट पर निर्भर है। यह सामान्य एचटीएमएल एवं जावा स्क्रिप्ट का समिश्रण होता है लेकिन इन्हें यह पुकारा नहीं जाता। डायनामिक एचटीएमएल एक ब्राउजर फीचर होता है।

CSS(Cascading Style Sheets)

A CSS (cascading style sheet) file allows you to separate your web sites(X)HTML content from its style. As always you use your (X)HTML file to arrange the content, but all of the presentation (fonts, colors, background, borders, text formatting, link effects & so on...) are accomplished within a CSS. At this point you have some choices of how to use the CSS, either internally or externally.

कैस्केडिंग स्टाइल शीट या संक्षिप्त में सीएसएस एक प्रकार का डीएचटीएमएल कंपोनेंट होता है जो किसी वेब पेज में कंटेंट्स जैसे टेक्स्ट, इमेजेज, ग्राफिक्स, टेबल्स इत्यादि को फॉर्मेट एवं अलाइन (व्यवस्थापन) करने के काम में आती है। सीएसएस के भी अपने कुछ क्लासेज एवं एलेमेंट्स होते हैं जिन्हें प्रयोग कर हम किसी वेब पेज को डायनामिक बनाते हैं।

कैस्केडिंग स्टाइल शीट प्रायः दो तरीके के होते हैं – पहला इंटरनल स्टाइल शीट एवं दूसरा एक्सटर्नल स्टाइल शीट।

Internal Stylesheet

First we will explore the internal method. This way you are simply placing the CSS code within the <head></head> tags of each (X)HTML file you want to style with the CSS. The format for this is shown in the example below.

इंटरनल स्टाइल शीट वो स्टाइल शीट होती है जिसे वेब पेज के सोर्स कोड के साथ ही कोड किया जाता है जिसे एक स्टाइल टैग की मदद से प्रयोग कर लिया जाता है।

With this method each (X)HTML file contains the CSS code needed to style the page. Meaning that any changes you want to make to one page, will have to be made to all. This method can be good if you need to style only one page, or if you want different pages to have varying styles.

Here we see an example...

```
<html>
<head>
<title></title>
<style type="text/css">
CSS Content Goes Here...
</style>
</head>
<body> ..... </body>
</html>
```

External Stylesheet

Next we will explore the external method. An external CSS file can be created with any text or HTML editor such as "Notepad" or "Dreamweaver". A CSS file contains no (X) HTML, only CSS. You simply save it with the .css file extension. You can link to the file externally by placing one of the following links in the head section of every (X) HTML file you want to style with the CSS file.

एक्सटर्नल स्टाइल शीट वो स्टाइल शीट होते हैं जिन्हें कोड करने के लिए हम एक अलग से फाइल बना लेते हैं और उसे फाइल का एक्सटेंशन .सीएसएस सेट करते हैं और फिर उस सीएसएस फाइल को अपने एचटीएमएल के सोर्स फाइल से जोड़ देते हैं। ऐसा करने पर हम किसी सीएसएस फाइल को वेब पेज में लिंक करने के साथ साथ उसे प्रयोग भी कर सकते हैं।

Here we see the procedure to implement external kind of style sheets...

```
<html>
<head>
<title><title>
<link rel="stylesheet" type="text/css" href="style.css" />
```





Hosting Websites

To make your web site visible to the world, you'll have to store it on a web server. This very process is called hosting websites. In other words you have to make this visible by providing a space on web following with a unique name (domain name) to be accessed by the internet user. After finishing designing your web page, you have to find a web hosting provider which will provide you a schema for hosting your website then you will be come to this so far.

Hosting your own Web site

Hosting your web site on your own server is always an option. Here are some points to consider:

Hardware Expenses

To run a "real" web site, you will have to buy some powerful server hardware. Don't expect that a low cost PC will do the job. You will also need a permanent (24 hours a day) high-speed connection.

Software Expenses

Remember that server-licenses often are higher than client-licenses. Also note that server-licenses might have limits on number of users.

Labor Expenses

Don't expect low labor expenses. You have to install your own hardware and software. You also have to deal with bugs and viruses, and keep your server constantly running in an environment where "everything could happen".

Using an Internet Service Provider

Renting a server from an Internet Service Provider (ISP) is a common option. Most small companies store their web site on a server provided by an ISP. Here are some advantages:

Connection Speed

Most ISPs have very fast connections to the Internet.

Powerful Hardware

ISPs often have powerful web servers that can be shared by several companies. You can also expect them to have an effective load balancing, and necessary backup servers.

Security and Stability

ISPs are specialists on web hosting. Expect their servers to have more than 99% up time, the latest software patches, and the best virus protection.

Things to Consider with an ISP

Daily Backup

Make sure your ISP runs a daily backup routine, otherwise you may lose some valuable data.

Traffic Volume

Study the ISP's traffic volume restrictions. Make sure that you don't have to pay a fortune for unexpected high traffic if your web site becomes popular.

Bandwidth or Content Restrictions

Study the ISP's bandwidth and content restrictions. If you plan to publish pictures or broadcast video or sound, make sure that you can.

E-mail Capabilities

Make sure your ISP supports the e-mail capabilities you need.

Front Page Extensions

If you use FrontPage to develop your web site, make sure your ISP supports FrontPage server extensions.

Database Access

If you plan to use data from databases on your web site, make sure your ISP supports the database access you need.

Web Hosting Domain Names

A domain name is a unique name for your web site. Choosing a hosting solution should include domain name registration. Your domain name should be easy to remember and easy to type.

What is a Domain Name?

A domain name is a unique name for a web site, like w3schools.com. Domain names must be registered. When domain names are registered, they are added to a large domain name register. In addition, information about the web site, including the IP address, is stored on a DNS server. DNS stands for Domain Name System. A DNS server is responsible for informing all other computers on the Internet about the domain name and the web site address.

Registering a Domain

Domains can be registered from domain name registration companies. These companies provide interfaces to search for available domain names, and they offer a variety of domain name extensions that can be registered at the same time.

Choosing a Domain Name

Choosing a domain name is a major step for any individual or organization. New domain name extensions and creative thinking still offer thousands of excellent domain names! When choosing a name, it is important to consider the purpose of a domain name, which is to provide an easy way to reach your web site. The best domains have the following characteristics: Short - People don't like to type! A short domain name is easier to type, read, and remember. Meaningful - A short domain is nothing without meaning, 34i4nh.com is not easy to enter or to remember. Select a domain that relates to your site in a way that people will understand. Clear - Clarity is important when selecting a domain name. Avoid a name that is difficult to spell or pronounce.

Exposure - Names that are short and easy to remember are an asset. In addition to visitors, also consider search engines. Search engines index your site and rank it for relevance against terms people search for. In order to maximize your sites exposure, consider including a relevant search term in your domain. Of course, only consider this if it still maintains a short, clear and meaningful domain name.

Sub Domains

Most people are unaware that they use sub domains daily. The famous "www" of the World Wide Web is an example of a sub domain. Sub domains can be created on a DNS server, and they don't need to be registered with a domain name registrar, of course, the original domain name needs to be registered before a sub domain could be created. Examples of sub domains used on the internet are <http://store.apple.com> and <http://support.microsoft.com>. Sub domains can be requested from your web hosting provider.

Database Management System

Introduction

Information and data are different; information is understood by a person and the data are values stored on a passive medium like a computer disk. The purpose of a database management system (DBMS) is to bridge the gap between information and data - the data stored in memory or on disk must be converted to usable information. A database is set of information with relative fields is kindly known as database.

डेटाबेस ऑपरेशन का तात्पर्य डेटाबेस मैनेजमेंट से सम्बंधित कार्य को अंजाम देने से है। डेटाबेस के सन्दर्भ में इनफार्मेशन (सूचना) एवं डाटा में काफी फर्क होता है जबकि डाटा केवल एक वैल्यू होती है जिसे आप अपने कंप्यूटर सिस्टम के मेमोरी में स्टोर करते हैं जिनकी कड़ी से कड़ी मिलाकर सूचना बनायी जाती है। सूचना एवं डाटा के बीच की कड़ी के कड़ी को डेटाबेस मैनेजमेंट सिस्टम से जोड़ा जाता है। डेटाबेस किसी विषय विशेष तथा सम्बंधित फील्ड की सूचना का सेट होता है जिससे उस विषय विशेष की सूचना का आदान प्रदान किया जा सके, उसे डेटाबेस कहते हैं।

The basic processes that are supported by a DBMS are...

- Specification of data types, structures and constraints to be considered in an application
- Storing the data itself into persistent storage
- Manipulation of the database
- Querying the database to retrieve desired data
- Updating the content of the database

Database

A database is a model of a real world system. The contents (sometimes called the extension) of a database represent the state of what is being modeled. Changes in the database represent events occurring in the environment that change the state of what is being modeled. It is appropriate to structure a database to mirror what it is intended to model.

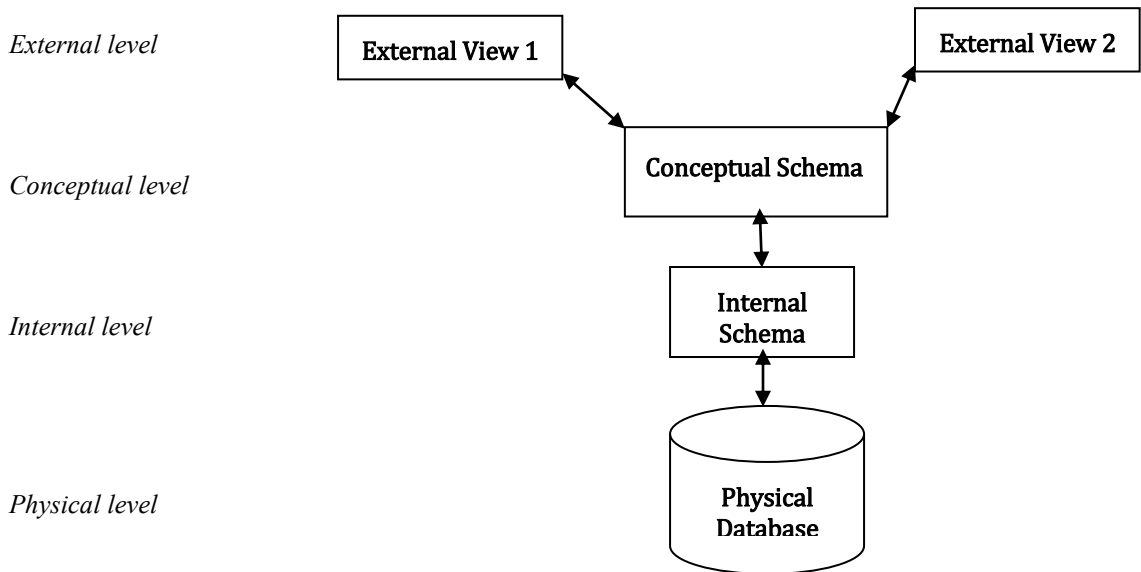
डेटाबेस किसी भी सूचना एवं विषय विशेष का मॉडल होता है। किसी भी डेटाबेस का कंटेंट यह प्रदर्शित करता है की डेटाबेस में क्या मॉडल किया जा रहा है मतलब डेटाबेस में किस प्रकार की वैल्यू मैनिपुलेट किया जा रहा है। डेटाबेस किसी विषय विशेष के सूचनाओं का संग्रह होता है जो उसके बारे में या सम्बंधित सभी सूचना को वर्गीकृत करके समूहवार तरीके से व्यवस्थित करते हैं। जैसे एकविषय लें – स्टूडेंट (छात्र) जिसे आप बतौर डेटाबेस टाइटल के तौर पर डेटाबेस क्रिएट कर सकते हैं जिसमे आप स्टूडेंट से सम्बंधित सभी सूचनाएं जैसे उसका रोल नं०, नाम, पिता का नाम, कक्षा इत्यादि सूचना जोड़ सकते हैं।

Database Management System

A database management system (DBMS) is a collection of programs that enables users to create and maintain a database. According to the ANSI/SPARC DBMS Report, a DBMS should be envisioned as a multi-layered system...

डेटाबेस मैनेजमेंट सिस्टम प्रोग्राम का कलेक्शन (समूह) होता है जो एक यूजर को डेटाबेस क्रिएट करने एवं मंटेन करने की अनुमति एवं सुविधा प्रदान करता है। डेटाबेस मैनेजमेंट सिस्टम के कई उदाहरण हैं जो डेटाबेस क्रिएट क्रिएट एवं मैनिपुलेट

करते हैं। यहाँ हम ANSI/SPARC के DBMS रिपोर्ट के विषय में चर्चा करेंगे जिसके अनुसार एक डेटाबेस मैनेजमेंट सिस्टम को मल्टी-लेयर सिस्टम में देखा जाता है।



- **External level** - It is the external(View) level of the database architecture where we can be able to view the data stored on the database.
- **Conceptual level** - It is the intermediary or mid-level process where all the definition and manipulation related to database is made.
- **Internal Level-** It is the internal level of the database management system where data control following with the internal schema is created and maintained.
- **Physical level** - It is the physical level of the database architecture where the data is stored physically in a table or network.

Schema

This illustrates overall structure of a database along with data records entered. As the name implies it shows the scheme of a database. It is the initial process where we define the data fields with appropriate data types is formally known as Schema.

स्कीमा किसी भी डेटाबेस के सम्पूर्ण स्ट्रक्चर को उनके वैल्यू के साथ प्रदर्शित करता है। जैसा की इसका नाम है यह किसी भी डेटाबेस की स्कीम को दर्शाता है। यह किसी नए डेटाबेस के क्रिएट करते वक्त का शुरुवाती प्रोसेस है जहाँ हम डेटाबेस के फील्ड्स को उनके एट्रिब्यूट के साथ क्रिएट करते हैं।

Sub Schema

It is derived from Schema depends upon the Application for the database management system being used for the logical view of the data. As the database contains many of the records in the form of table and a record among is treated as Subschema. A Schema can have many Subschema.

Microsoft Access

Microsoft Access is application software what is used to create and manipulate database. It is one of the application software in Microsoft Office Suite. Microsoft Access is a relational database management system what does create or manipulate a database in the form of tables and queries.

माइक्रोसॉफ्ट एक्सेस एक डाटाबेस मैनेजमेंट सॉफ्टवेयर पैकेज है जिसकी सहायता से डाटाबेस क्रियेट करते (Table, Forms, Query and Report)एवं मैनिपुलेट करते हैं।

Database

A database is a model of a real world system. The contents (sometimes called the extension) of a database represent the state of what is being modeled. Changes in the database represent events occurring in the environment that change the state of what is being modeled. It is appropriate to structure a database to mirror what it is intended to model.

किसी विषय—वस्तु के बारे में दर्शायी गयी पूरी सूचना के संग्रह को डेटाबेस कहते हैं। डाटाबेस मैनेजमेंट के प्रमुख उदाहरण निम्नलिखित हैं—MS Access, MySQL, SQL Server, Oracle etc.

DBMS (Database Management System)

A database management system (DBMS) is a collection of programs that enables users to create and maintain a database.

डेटाबेस मैनेजमेंट सिस्टम एक प्रकार का सॉफ्टवेयर पैकेज होता है जो डेटाबेस क्रियेट करने, मैनिपुलेट करने एवं अपडेट करने में प्रयोग होता है।

Microsoft Access 2003

Microsoft Access 2003 is an RDBMS application what comes in use for creating and manipulating databases. It overcame the previous version Access 2002 with new enhanced feature and durability. It yields better comprehensive look and feature for ease of access. It uses .mdb file extension for the databases it creates.

माइक्रोसॉफ्ट एक्सेस 2003 एक रिलेशनल डेटाबेस मैनेजमेंट सिस्टम एप्लीकेशन होता है जो एक डेटाबेस को क्रिएट करने एवं उसे मैनिपुलेट करने के उपयोग में आता है। इसने अपने पहले के वर्जन 2002 को ओवरटेक किया और कई नए फीचर एवं टूल्स के साथ ही साथ नए लुक का भी आगमन कराया जिसके बाद इसे इस्तेमाल करना काफी सरल एवं प्रभावी हो गया। माइक्रोसॉफ्ट एक्सेस 2003 खुद के द्वारा क्रिएट किये गए डेटाबेस के लिए .mdb (माउंटेड डेटाबेस) एक्सटेंशन इस्तेमाल करता है।

Microsoft Office Access 2007

Microsoft Office Access 2007 includes a suite of prebuilt tracking applications in the form of templates that you can use to get started quickly. Use them right out-of-the-box or enhance and refine them to track information your way. You can employ new views and layouts, enhanced sorting and filtering, rich text, multi valued fields, split forms, and a host of new features to create richer, better tracking applications and effectively share tracked information with others.

माइक्रोसॉफ्ट ऑफिस एक्सेस 2007 पहले से काफी तेज एवं पहले से निर्मित ट्रेकिंग एप्लीकेशन को बतौर टेम्पलेट की तरह इस्तेमाल करने की सुविधा देता है जिससे आप कोई भी डेटाबेस उद्देश्य बड़ी आसानी से हासिल कर सकते हैं। इस वर्जन में माइक्रोसॉफ्ट एक्सेस 2003 के मेनू सिस्टम को रिमूव कर टैब सिस्टम लाया गया है जिसका प्रयोग काफी आसान प्रद है। इस वर्जन में आपको फीचर बिल्कुल नए एवं प्रभावी तरीके जैसे डाटा वेलिडेशन, डाटा फिल्टरिंग, सॉर्टिंग, फॉर्म स्प्लिट इत्यादि की सुविधा उपलब्ध है जिससे आप किसी डेटाबेस को क्रिएट करने के साथ-साथ उसे शेयर करने, स्प्लिट करने, ट्रेक करने इत्यादि की अनुमति एवं सुविधा मिलती है।



Introduction to 'C' Programming

The Basic Model of Computation

The Basic model of Computation can be considered as a program executed step by step following with the instructions given by the user to solve a problem or program at end. We formally give a set instruction for a program to be executed and it made executed the program within a certain procedure. Consider a real time event or program i.e. cooking tea where you need all the prerequisites for making that possible like Tea leaves, sugar, milk or water; after boiling the tea leaves in the water or milk along with certain amount of sugar you can have tea to be served in the same way you need all the necessary things for a program like variable to store value, operators to perform operation following with instructions you can be able to solve a problem at end.

किसी भी प्रॉब्लम या प्रोग्राम को संपूर्णतः सुलझाने के लिए हमें स्टेप बाई स्टेप निर्देशों को क्रियान्वित करते रहना होगा तत्पश्चात ही हम किसी समस्या को सुलझा पाते हैं। हम किसी प्रोग्राम को सोल्व करने के लिए एक नियत निर्देश देते हैं। और उस नियत निर्देश के अनुसार ही उस प्रोग्राम को क्रमवार तरीके से सुलझाते हैं। जैसे की रियल टाइम इवेंट को ही उदहारण के तौर पर लें तो पाएंगे की उन सभी कार्य को क्रियान्वित करने के लिए हमें एक नियत निर्देश के अनुसार ही किसी कार्य को अंजाम देते हैं चाहे वो निर्देश स्वयं द्वारा ही प्रेषित क्यों न हो। यहाँ नीचे कंप्यूटर प्रोग्राम से सम्बंधित कुछ चीजें संदर्भित की गयी है –

We consider the following things while or before computing a program...

- Make sure the output of the program then define the prerequisites for that program
- Declare the variables for that program and import necessary resources
- Form proper syntax of the program as per the procedure
- Use necessary functions and methods to get the desired result at end

Program Concepts

While solving a problem, a certain procedure is followed as the phases for the program executing and debugging. There is number of levels involved what they play their role from starting to code a program to finish a program by executing.

प्रोग्राम कांसेप्ट का मतलब यह है की किसी प्रोग्राम को सोल्व करने के लिए नियत तरीके एवं प्रोसीजर की जरूरत पड़ती है। ऐसा करने पर हम किसी प्रोग्राम को आसानी से क्रियान्वित करने के साथ साथ उसे डिबग भी कर सकते हैं। प्रोग्राम कांसेप्ट के अंतर्गत कई चरण होते हैं जिनके अपने स्वयं के किरदार होते हैं जिनकी मदद से हम किसी प्रोग्राम को आसानी से क्रियान्वित करते हैं।

Understand the Problem

We need to first fetch the problem what you have to solve or make that execute. For solving a problem first you need to understand the things or problem that how and what manner it may be solved or executed then write an algorithm for that problem step by step that will make the things more clearly or make a diagram or flow chart of the problem that is considered more clear to form a program before coding it.

प्रोग्राम कांसेप्ट के तहत सबसे पहले हमें प्रोग्राम के उद्देश्य एवं सम्बंधित समस्या को समझना होगा। यह प्रोग्राम कांसेप्ट की सबसे पहली एवं अहम् कड़ी है। प्रोग्राम के उद्देश्य एवं सम्बंधित समस्या को पूर्ण्यता समझने के तत्पश्चात हम उस प्रोग्राम की रूप रेखा को एल्गोरिथम एवं फ्लो चार्ट की मदद से रेखांकित करते हैं।

Draw Algorithm/Flow Chart

Draw or prepare Algorithm or Flow chart or both to draw the architecture of the program so that it can be formed into program code easily and accurately. Algorithm is something what, is written or constructed step by step in a concise and clear way to solve a problem at end Whereas Flow chart is a graphical notation or representation with a certain definition demonstrate the program flow and control along with the given instructions.

यह प्रोग्राम कांसेप्ट की दूसरी कड़ी है जिसमें किसी प्रोग्राम के उद्देश्य एवं समस्या के तहत हम एक एल्गोरिथम या फ्लो चार्ट बनाते हैं। एल्गोरिथम एक प्राचीन प्रोग्रामिंग तकनीक है जिसमें हम किसी प्रोग्राम को क्रमवार तरीके से सुलझाते हैं जबकि फ्लो चार्ट एक ग्राफिकल रिप्रजेंटेशन है जिसके तहत हम किसी प्रोग्राम के एक्जीक्यूशन के फ्लो को नियत चित्रों के माध्यम से प्रस्तुत करते हैं।

Make Declarations

Declare the necessary variables or functions for that problem you understood at the first level. Declarations may be local or global within a scope you can use as per the requirement. Variable declaration is something what you assign a data type definition on that kind of value only it can perform. Variables are the containers what contains a certain kind of value and are used in an operation.

प्रोग्राम के उद्देश्य एवं समस्या को समझने और उसका एल्गोरिथम एवं फ्लो चार्ट को बनाने के पश्चात हमें अपने प्रोग्राम में जरूरी डिक्लेरेशन करने की आवश्यकता पड़ती है। जैसे की वैरिएबल डिक्लेअर करना, फंक्शन डिक्लेअर करना इत्यादि।

Program Coding

It is the section where we write the code as per the program objective and Algorithms/Flowchart drawn. It is set of some predefined code syntax along with set of instructions to execute the problem at end. Program coding is the major step of programming where we code the program as the output objective following with the predefined syntax and given instructions. A Program is always written in its program IDE where it is fully concerned and supported to be designed and developed. After coding the program we compile it and convert into object class so that you can be able to run it with no error to get the desired output.

इन सब के पश्चात हम प्रोग्राम के जरूरत एवं आउटपुट को ध्यान में रखते हुए प्रोग्राम की कोडिंग करते हैं। जैसा की हम जानते हैं की प्रोग्राम को कोड करने के लिए हमें जरूरी वैरिएबल एवं फंक्शन डिक्लेअर करने पड़ेंगे एवं उन्हें क्रमबद्ध तरीके से सुसज्जित करना पड़ेगा।

Testing and Debugging

It is the later process of program coding where things about the program objective is tested for what it is designed. It is process used to justify the program objective as well as to fix errors comes in the way of execution. Debugging is the step what fixes the errors found by the Testing. These both are the steps of finding the fixing the errors and making sure the objective of programs.

प्रोग्राम को कोड करने के पश्चात हमें इसके आउटपुट टेस्ट करना पड़ेगा की जिस उद्देश्य के लिए इसे बनाया गया है ये उसे पूर्ण कर रहा है या नहीं। और यदि नहीं तो इसे डिबग करना पड़ेगा। ये दोनों प्रोग्रामिंग का एक प्रोसेस है जिसके तहत हम किसी प्रोग्राम के आउटपुट को टेस्ट करते हैं एवं सही न होने की स्थिति में इसे सुधारते हैं।

Introduction to 'C' Language

C is a programming language based on high level language but with low level feature. It had been developed at AT & T's bell laboratory in 1972 by Dennis Ritchie. It had been developed on UNIX operating system but after it has become as able to develop the UNIX OS entirely. C programming language is derived from BCPL (Basic Combined Programming Language). C programming language is basically used for system programming and developing system utilities. C is a programmer's language. C is a computer language and a programming tool which has grown popular because programmers like it! It is a tricky language but a masterful one.

C एक प्रोग्रामिंग लैंग्वेज है जो हाई लेवल लैंग्वेज पर आधारित होता है लेकिन फीचर लो लेवल का होता है। इसका मतलब है इस प्रोग्रामिंग लैंग्वेज में प्रयुक्त भाषा हाई लेवल की होती है लेकिन इसकी विशेषता लो लेवल का होता है। इस प्रोग्रामिंग लैंग्वेज को एटी एंड टी बेल लैबोरेटरी में 1972 में डेनिस रिची द्वारा डेवलप किया गया था। इस प्रोग्रामिंग लैंग्वेज का निर्माण यूनिक्स ऑपरेटिंग सिस्टम पर एवं बीसीपीएल लैंग्वेज की मदद से किया गया था जो बाद में इतना लोकप्रिय एवं सबल साबित हुआ कि इसकी मदद से बाद में पुरे यूनिक्स ऑपरेटिंग सिस्टम का ही निर्माण कर दिया गया।

C is one of a large number of high level languages which can be used for general purpose programming, that is, anything from writing small programs for personal amusement to writing complex applications.

Basic ideas about C

Using a compiler language is not the same as using an interpreted language. It differs in a number of ways. A 'C' program has to be created in two stages...

- Firstly, the program is written in the form of a number of text files using a screen editor. This form of the program is called the source program. It is not possible to execute this file directly.
- Secondly, the completed source file is passed to a compiler; a program which generates a new file containing a machine code translation of the source text. This file is called an object file or executable file. The executable file is said to have been compiled from the source text.

Character set

Character set is something what is used and recognized by a language pattern where a group of characters are used representing a certain definition. There is number of character element in a character set like alphabet (lower case, upper case), special characters, digits and many more. In 'C' programming the character set is used and recognized as the characters what this used directly and some as escape sequences. For .e.g. \$, (,), <space> etc are characters used directly treated as Source Characters whereas some characters what that are executed by the 'C' compiler like \n, \t etc are treated as execution characters or escape sequences. \n creates a new line when executed; \t creates a tab space when executed.

करैक्टर सेट किसी प्रोग्रामिंग लैंग्वेज की भाषा पद्धति द्वारा पहचान कराया गया एक समूह होता है जहाँ कई करैक्टर होते हैं जिनके अपने अपने मायने एवं प्रयोग होते हैं। किसी प्रोग्रामिंग लैंग्वेज में करैक्टर सेट के कई एलिमेंट होते हैं जैसे अल्फाबेट (लोवर केस एवं अपर केस), विशेष करैक्टर, संख्याएँ और भी बहुत कुछ। प्रोग्रामिंग लैंग्वेज में कुछ ऐसे खास करैक्टर होते हैं जो करैक्टर के समिश्रण से बनते हैं जैसे एस्केप सीक्वेंस करैक्टर इत्यादि।

What characters as a program element are used in a program –treated as *Tokens*. A Token may be Keyword, Identifier, Literal, operators etc.

Conditional Statements and Loops

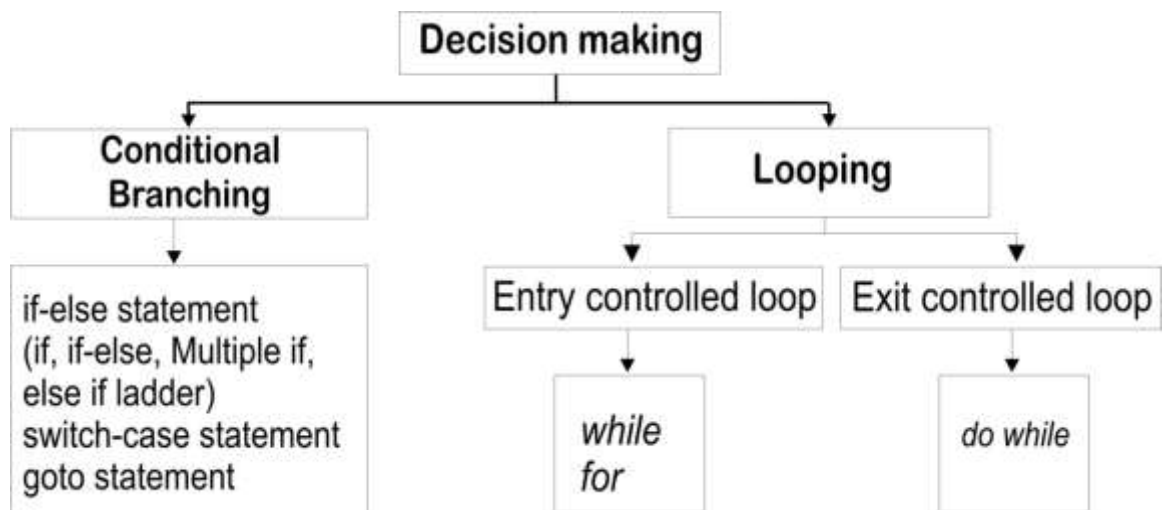
Introduction

Decision making is all about to let the statements to be executed as per the decision made to jump and branch to execute block of codes. Basically we need these kind of statements only to execute the block of code as per the condition, if the condition will be true then the block of code will be executed else not. The Decision making or control statements can be considered as Control statements which is directed by a control placed in the program.

डिसीजन मेकिंग का वजूद किसी भी प्रोग्रामिंग लैंग्वेज में जम्पिंग एवं ब्रांचिंग का होता है जिससे एक कंडीशन के अनुसार कण्ट्रोल को एक स्थान से दुसरे स्थान पर स्विच करते हैं। साधारणतः किसी कंडीशन (शर्त) के अनुसार यदि कंडीशन ट्रू होती है तो यह अन्यथा वह स्टेटमेंट एग्जीक्यूट होता है। डिसीजन मेकिंग के अंतर्गत आने वाले कंडीशनल स्टेटमेंट कुछ इस प्रकार हैं –

Decision making or the control structure can be considered as following...

- Conditional Branching
- Looping



Decision making falls into the following forms as per discussed in the diagram above. We see Decision making is considered into two stated forms – Conditional branching and Looping. The Conditional branching is the conditional statements which allows or facilitates to execute a certain block of code to be executed as per the condition, if the condition remains true then

जैसा की ऊपर के डायग्राम में प्रदर्शित है की डिसीजन मेकिंग दो तरह के होते हैं पहला कंडीशनल ब्रांचिंग एवं दूसरा लूपिंग। कंडीशनल ब्रांचिंग के अंतर्गत किसी स्टेटमेंट को एक या एक से अधिक कंडीशन के ट्रू (सही) या फाल्स(गलत) होने के किसी एक स्थिति में एग्जीक्यूट करना जबकि लूपिंग का मतलब किसी एक स्टेटमेंट को एक या एक से अधिक कंडीशन के हिसाब से बार बार एग्जीक्यूट करना होता है जब तक वह कंडीशन ट्रू (सही) होती है।

Decision making within a program

Decision making within a program is just like making decisions as per the condition. Sometimes we see there is a situation where action or decision has to be taken on the basis of a certain condition

Arrays

An array is a collective name given to a group of 'similar quantities'. An array is a collection of similar elements or data types. Whenever you need to collect and store more than one value of same data types in a bulk quantity then you go better declare an array instead of declaring a number of variables. It asks a name as the rest of the variables and a size in numeric placed in a subscript [].

ऐरे सी प्रोग्रामिंग में एक तरह का वेरिएबल होता है जो एक समय में एक से ज्यादा एक ही डाटा टाइप के वैल्यू को अलग अलग स्टोर कर सकता है या साधारण शब्दों में कहें तो ऐरे सिमिलर(एक समान) डाटा वैल्यू का एक समूह होता है जिसमें आप एक समय में एक से ज्यादा वैल्यू स्टोर कर सकते हैं एवं उन्हें किसी भी समय एक्सेस करने के साथ साथ उसे मैनिपुलेट भी कर सकते हैं। ऐरे को आप किसी एक डाटा टाइप से डिक्लेअर कर सकते हैं लेकिन इसे डिक्लेअर करने के लिए आपको इसका साइज भी उल्लेखित करना पड़ेगा जो यह तय करेगा की ऐरे उस डाटा टाइप की कितनी वैल्यू को स्टोर करेगा।

Declaring an array

Here we see the declaration of array...

नीचे किसी ऐरे को एक डाटा टाइप के तहत डिक्लेअर करने के बारे में उल्लेखित किया गया है।

Syntax: data_type array_name[size];

Declaration: int arr[10];

As we see that the size of that variable has been declared to 10 then it will store ten different integer values separately without losing anyone. An array index is always started with zero (0), thus it will be storing the value from 0 to 9.

Initializing array

Here we see the initializing an array variable as follows...

किसी ऐरे को डिक्लेअर करने के बाद इसे हम साधारण वेरिएबल की ही तरह इनिशियलाइज कर सकते हैं यानी डिक्लेअर होने के साथ-साथ इसे एक आरंभिक वैल्यू प्रदान कर सकते हैं। ऐसा करने का नीचे सिंटेक्स दिया गया है।

Syntax: data_type array_name[]={value1, value2, value3, value4, value5};

Declaration: int arr[]={10, 5, 90, 63, 0};

Array comes with the following kinds...

- One dimensional array
- Two dimensional array
- Multi dimensional array

One dimensional arrays

It is the type of the Array where an array declared according, implemented in one dimension only means it takes only one subscript with a size and stores the similar data.

वन डायमेंशनल ऐरे, ऐरे का एक प्रकार होता है जिसे नार्मल ऐरे भी कहते हैं जिसमें एक सबस्क्रिप्ट होता है जिसमें इसके साइज का उल्लेखन होता है। नीचे इसके प्रयोग से सम्बंधित उदाहरण दिया गया है।

Here we see...

Sample Program

```
#include<stdio.h>
#include<conio.h>
```


Functions

In this very chapter we will be learning the functioning of functions as well as creating and manipulating them. Functions are nothing but self contained block of code with certain definition. A function may be system defined or user defined. A system defined function is called library function where a user defined function is needed to be declared and defined with a prototype. A function makes programming easy because it yields the facility to split the program code in modules that can anytime separately defined, tested and manipulated and can be called number of times in the program code anytime without writing the program code again.

इस अध्याय के अंतर्गत हम फंक्शन के बारे में विस्तृत अध्ययन करेंगे। फंक्शन जैसा की हमने इसके बारे में संक्षिप्त जानकारी ली की यह एक अलग ब्लॉक ऑफ कोड होता है जो खुद को मेन फंक्शन से अलग होता है जिसे कॉल करने पर ही यह एग्जीक्यूट होता है एक नियत प्रतिफल लौटता है। फंक्शन दो तरह के होते हैं – पहला सिस्टम परिभाषित एवं दूसरा यूजर द्वारा परिभाषित। सिस्टम द्वारा परिभाषित फंक्शन को ही लाइब्रेरी फंक्शन कहते हैं जबकि यूजर डिफाइंड(परिभाषित) फंक्शन को प्रयोग करने से पहले इसे प्रोटोटाइप करना पड़ता है एवं इसकी डेफिनिशन को अलग कोड करना पड़ता है जिसे आप मेन फंक्शन में कॉल करके प्रयोग कर सकते हैं।

Top-down approach of problem solving

It is a process as well as technique to solve a problem at hand. As we do program in 'C', then we find certain approach to execute the task. We generally see Top-down approach and Bottom-up approach to be applied to execute the program code. In the top-down approach the program code is executed from the top to bottom whereas in the bottom-up approach the program code is started executing from the bottom to top.

हर प्रोग्राम का एक एप्रोच होता है की यह किस प्रकार एवं किस दिशा में एग्जीक्यूट होता है। साधारणतः एक प्रोग्राम को एग्जीक्यूट करने के दो एप्रोच होते हैं – पहला टॉप-टू-बॉटम एवं दूसरा बॉटम-अप। टॉप-टू-बॉटम एप्रोच का मतलब प्रोग्राम ऊपर से नीचे की तरफ एग्जीक्यूट होगा जबकि बॉटम-अप एप्रोच का मतलब प्रोग्राम नीचे से ऊपर की तरफ एग्जीक्यूट होगा। किसी फंक्शन का एग्जिक्युशन एप्रोच साधारतः टॉप-टू-बॉटम होता है।

Modular programming

It is the technique to split the program into the parts or modules in the form of functions, procedures and methods so that it can be better handled separately by an individual team and branch to solve it better comparatively.

It plays an important role in case when a block of code is in demand to be used repeatedly in the program then we can put the token of that module only instead of entire code again.

Modules are created so that testing and debugging can be held easily to find and detect the error and rectify them.

यह एक प्रोग्रामिंग तकनीक है जिसमें यह प्रोग्राम को अलग भाग में बाँट देता है जिससे जरूरत के पार्ट ही एग्जीक्यूट होते हैं। इसकी मदद से जिसकी भाग की आवश्यकता नहीं होती वह एग्जीक्यूट नहीं होता है। सी किसी भी प्रोग्रामिंग लैंग्वेज में एक अहम किरदार निभाता है क्योंकि यह प्रोग्रामर एवं सिस्टम दोनों का समय बचाता है साथ ही साथ प्रोसेसिंग लोड भी हल्का करता है।

Functions

A function is a self-contained block of statements that perform a consistent task of some kind. Every C program can be thought of as a collection of these functions. As we noted earlier, using a function is something like hiring a person to do a specific job for you. Sometimes the interaction with this person is very simple; sometimes it's complex.

Storage Classes

Storage classes are the pattern of memory allocating to the variables whether in the memory or in the CPU registers. To fully define a variable one needs to mention not only its 'type' but also its 'storage class'. In other words, not only do all variables have a data type, they also have a 'storage class'. If we don't specify the storage class of a variable in its declaration, the compiler will assume a storage class depending on the context in which the variable is used. Thus, variables have certain default storage classes.

स्टोरेज क्लास एक प्रकार का मेमोरी लोकेशन है जो साधारण मेमोरी लोकेशन में न होकर के बल्कि सीपीयू रजिस्टर में पाया जाता है। किसी वेरिएबल को पूरी तरह से डिफाइन करने के लिए आपको स्टोरेज क्लास डाटा टाइप का प्रयोग करना पड़ता है। आप अपने प्रोग्राम में जब भी किसी वेरिएबल को डिक्लेअर करते हैं तो आप उसका डाटा टाइप उसी समय निर्धारित कर देते हैं जहाँ पर उस वेरिएबल का स्टोरेज क्लास भी डिफाइन कर सकते हैं यद्यपि आप किसी वेरिएबल का स्टोरेज क्लास उस वक्त नहीं भी इंगित करते हैं तब भी उस वेरिएबल के वैल्यू स्टोर करने के प्रकृति के हिसाब से उसको एक स्टोरेज क्लास स्वतः प्रदान कर दिया जाता है।

From C compiler's point of view, a variable name identifies some physical location within the computer where the string of bits representing the variable's value is stored. There are basically two kinds of locations in a computer where such a value may be kept—Memory and CPU registers. It is the variable's storage class that determines in which of these two locations the value is stored.

सी कम्पाइलर के दृष्टिकोण से किस भी वेरिएबल का एक कंप्यूटर सिस्टम में एक भौतिक स्थान होता है जहाँ पर उस वेरिएबल के वैल्यू बिट के श्रृंखलाओं के रूप में स्टोर होती है। इसे अनुसार किसी सिस्टम में वैल्यू स्टोर करने के लिए दो स्थान होते हैं पहला मेमोरी एवं दूसरा सीपीयू रजिस्टर. एवं स्टोरेज क्लास के अंतर्गत वेरिएबल डिक्लेअर करने की स्थिति में वो वेरिएबल सीपीयू रजिस्टर में स्टोर हो जाता है।

Moreover, a variable's storage class tells us:

- ⇒ Where the variable would be stored.
- ⇒ What will be the initial value of the variable, if initial value is not specifically assigned. (i.e. the default initial value).
- ⇒ What is the scope of the variable; i.e. in which functions the value of the variable would be available.
- ⇒ What is the life of the variable; i.e. how long would the variable exist.

Scope and extent

The scope of storage classes are some times local and for some storage class it is global. For e.g. we see extern storage class which defines a variable global and accessible to all the functions and modules retaining its original value.

किसी स्टोरेज क्लास का स्कोप इसे एक्सेस करने एवं एक्सेस होने की हद को कहते हैं। कुछ वेरिएबल को हम लोकल डिक्लेअर करते हैं एवं कुछ को ग्लोबल परिणाम स्वरूप वो ग्लोबल वेरिएबल हर जगह मतलब हर फंक्शन में एक्सेस किया जा सकता है लेकिन वो लोकल वेरिएबल केवल वही तक सिमित होता है जहाँ वह डिक्लेअर किया गया होता है।

Generally Scopes of the programming entities are as follows...

- ⇒ Program Scope
- ⇒ File Scope
- ⇒ Function Scope
- ⇒ Block Scope

Program Scope

This is one of the scope type for the programming entities where an entity remains originated with its value. Variables under this scope are accessible throughout the program even in any of the function declared in the program.

Structures and Unions

As we have studied that array is the collection of similar data types, in the same way structure is the collection of different data types. It wouldn't have been so popular had it been able to handle only all **ints**, or all **floats** or all **chars** at a time. In fact when we handle real world data, we don't usually deal with little atoms of information by themselves—things like integers, characters and such. Instead we deal with entities that are collections of things, each thing having its own attributes, just as the entity we call a 'book' is a collection of things such as title, author, call number, publisher, number of pages, date of publication, etc. As you can see all this data is dissimilar, for example author is a string, whereas number of pages is an integer.

अभी तक हमने देखा की एक ऐसे एक प्रकार के डाटा टाइप के वैल्यू का समूह होता है जबकि स्ट्रक्चर कई अलग अलग तरह के डाटा टाइप के वैल्यू का कलेक्शन होता है जो मेमोरी में एक जगह बनाता है जहाँ पर सभी डाटा टाइप के अलग अलग वैल्यू जो की एक यूजर से इनपुट लिए गए हैं को स्टोर करता है। किसी एक प्रकार के वैल्यू को इनपुट लेकर उसे मैनिपुलेट करना एवं प्रिंट करना तो हमने कई बार देखा एवं प्रयोग किया अब हम वास्तविक तथ्यों के अनुसार सूचनाओं को स्टोर करने का प्रयास करेंगे जो एक स्ट्रक्चर द्वारा संभव हैं जैसे एक पुस्तक का सम्पूर्ण विवरण हो अगर संग्रहित करना है तो इसके संभावित गुण धर्म हो सकते हैं — इसका नाम, इसका मूल्य, इसकी पृष्ठ संख्या तथा लेखक का नाम इत्यादि। सी प्रोग्रामिंग के डाटा टाइप के अनुसार पुस्तक के नाम को करैक्टर ऐरे या करैक्टर पॉइंटर के मदद से स्टोर कर सकते हैं अबकी मूल्य को फ्लोट डाटा टाइप से, पृष्ठ संख्या को इन्टिजर डाटा टाइप से एवं लेखक का नाम पुनः करैक्टर ऐरे से या करैक्टर पॉइंटर से।

For dealing with such collections, C provides a data type called 'structure'. A structure gathers together, different atoms of information that comprise a given entity. And structure is the topic of this chapter. We declare the structure using `struct` keyword.

A structure contains a number of data types grouped together. These data types may or may not be of the same type. The following example illustrates the use of this data type. Here we see...

```
#include<stdio.h>
void main()
{
    struct book
    {
        char name ;
        float price ;
        int pages ;
    } ;
    struct book b1, b2, b3 ;
    printf ( "\nEnter names, prices & no. of pages of 3 books\n" ) ;
    scanf ( "%c %f %d", &b1.name, &b1.price, &b1.pages ) ;
    scanf ( "%c %f %d", &b2.name, &b2.price, &b2.pages ) ;
    scanf ( "%c %f %d", &b3.name, &b3.price, &b3.pages ) ;
    printf ( "\nAnd this is what you entered" ) ;
    printf ( "\n%c %f %d", b1.name, b1.price, b1.pages ) ;
    printf ( "\n%c %f %d", b2.name, b2.price, b2.pages ) ;
    printf ( "\n%c %f %d", b3.name, b3.price, b3.pages ) ;
}
```

Output

```
Enter names, prices and no. of pages of 3 books
C 140.00 180
```

File handling

Introduction

File handling means storing a kind of data permanent in a file rather than taking input again and again. The data you enter while running a program get lost when program terminates but when you will be using files creating and manipulating then the data you entered or manipulated will be permanently saved to the computer disk. Often it is not enough to just display the data on the screen. This is because if the data is large, only a limited amount of it can be stored in memory and only a limited amount of it can be displayed on the screen. It would be inappropriate to store this data in memory for one more reason. Memory is volatile and its contents would be lost once the program is terminated. So if we need the same data again it would have to be either entered through the keyboard again or would have to be regenerated programmatically.

फाइल हैंडलिंग का मतलब सी प्रोग्रामिंग की मदद से कोई फाइल क्रिएट करना जिसमें आप कोई डाटा लिख सके, उसका डाटा पढ़ सके इत्यादि। चुकी अब तक के इनपुट एवं आउटपुट प्रदर्शित करने के स्टैंडर्ड एंड कंसोल फंक्शन का प्रयोग किया जाता था जो केवल प्रोग्राम के चलते रहने तक ही वैल्यू मेमोरी में रहती है और प्रोग्राम के टर्मिनेट होते ही वैल्यू भी मेमोरी से गायब हो जाती है क्योंकि यह परमानेंट नहीं होता है। किसी भी इनपुट एवं आउटपुट वैल्यू को परमानेंट कंप्यूटर डिस्क में स्टोर करने के लिए हमें फाइल हैंडलिंग का प्रयोग करना पड़ता है।

File Operations

There are different operations that can be carried out on a file.

किसी फाइल हैंडलिंग से संदर्भित संभावित फाइल ऑपरेशन हैं –

These are:

- ⇒ Creation of a new file
- ⇒ Opening an existing file
- ⇒ Reading from a file
- ⇒ Writing to a file
- ⇒ Moving to a specific location in a file (seeking)
- ⇒ Closing a file

Let us now write a program to read a file and display its contents on the screen. We will first list the program and show what it does, and then dissect it line by line. Here we come with a sample program displaying just content of a file...

```
/* Display contents of a file on screen. */
#include "stdio.h"
void main( )
{
    FILE *fp;
    char ch;
    fp = fopen ( "Hello.txt", "r" );
    while (1)
    {
        ch = fgetc ( fp ) ;
        if ( ch == EOF )
            break ;
        printf ( "%c", ch ) ;
    }
    fclose ( fp ) ;
}
```