Vikash Polytechnic, Bargarh

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Lecture Note
on
Introduction to IT System

Diploma 1st Year

BRANCH-CE, CSE, MECH, EE

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Senior Lecture

Computer Science & Engineering

UNIT - I Internet skills & computer basics -

Basic Internet skills

→ Internet is a popular tool for accessing digital information & services.

→ It uses digital devices like computers, mobiles etc to exchange info. & services.

→ Skills required to access various appl^n of the internet are called "Internet skills".

What is Internet ?

→ It is a collection of various interconnected network of heterogeneous types across the globe.

Application of the Internet

① communication :

↳ E-mails

↳ online messengers are popular for real time communication

↳ VoIP(voice over Internet protocol audio & video conversation takes place

② E-commerce (Electronic) :

↳ online market to buy & sell various product & Services.

③ Storage & File Transfer:

↳ The users can send & receive/store files of different types (cloude)

④ Live streaming & podcasts:

↳ Users can send their live video & audio to large group of people in a real-time manner.

⑤ News, Entertainment:

⑥ Collaborative tasks:

⑦ Research & Learning activities

⑧ Interactive Gaming

⑨ Social Networking

⑩ Job hunting

⑪ Navigation & tracking

Internet Basics

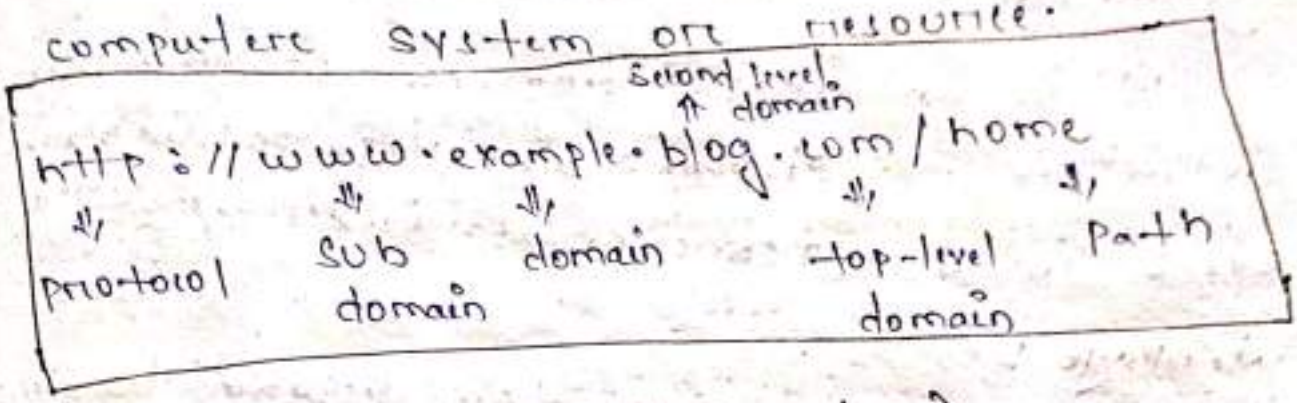
Few commonly used terms for the internet basics are

1) WWW (World wide web):

↳ It is an info. system where different kinds of files or resources are hosted via URL

2) Domain Name

It is an human understandable unique name on the internet to identify a computer system or resource.



3) URL (Uniform Resource Locator)

↳ It is known as web address

↳ It is a unique identifier of a web resource with a specification of how to access & from where to access.

4) HTTP (Hyper Text Transfer Protocol)

↳ It is a set of rules that define the way how data transfer over the web.

→ It is used to access website

5) FTP (File Transfer Protocol)

↳ It is a set of rules that define the way how data transfer over the internet.

6) Hyperlink :

It is a word, phrase, or image that

refers to another data, can be followed by the users by clicking or taping.

7) Browsers:

It is an appln program with a user interface to display & navigate webpages over www. → eg chrome, safari, opera, mozilla firefox etc

8) Webpage:

collection of documents designed to view on the web browsers.

9) Website:

collection of webpages i.e identified by a common domain name.

10) Search Engine

→ It is a web based complex site that provide info. searching service to its users.

→ eg - Google, Yahoo, Baidu, Naver etc.

11) ISP (Internet Service Provider)

↳ An ISP is a company that provides internet access to other companies or individuals.

12) E-mail (Electronic Mail)
It is a method of exchanging digital message from 1 electronic device to another device or to many recipients via a n/w.

13) podcast
It is a web resource available on the internet that contains audio info.

14) File type
Every info available on the internet have a certain format & type which is understood by there file type.
→ Fi information can be in form of documents, audio, video etc.

15) Download :
It is the process of copying data overe the internet from 1 device to anothere.

16) Upload
It is the process of transfering data from 1 device to anothere.

17) DNS (Domain Name System)
It translates human understandable domain (www.nic.gov.in) to machine readable

Ip address (203.129.202.69)

18) TCP/IP (Transmission control protocol / Internet protocol)

It is a set of rules that govern the linking of a computer system to the internet.

19) Modem (Modulator Demodulator)

↳ It is responsible to convert digital data of a computer system to an analog signal over telephone line & vice versa.

20) Network Equipment

These are networking H/w required for interconnection & comm^n in a computer n/w

→ eg Bridge, Repeater, Hub, Switch, router etc

21) cloud computing :

It provides computer resources over the internet as per the demand.

Understanding A Browser

↳ Internet follows client server model

→ In this model when a client machine seeks some service, it form a request message (HTTP request) & send it via client-side program to n/w towards the server.

→ On the other side when a request approaches the server, grants or denies the request in form of response message (HTTP response)

→ A browser is a client side program to search & retrieve info from www

a) Google chrome - 2008
b) Microsoft Edge - 2015, windows 10
c) mozilla Firefox - sept 2002
d) Opera - April 1995 (both mobile & computer)
e) Safari - developed by Apple Inc & is not complete open source browser.
→ January 2003 as a part of MAC OS.

Elements of a chrome Browser window

1) To be connected to the internet we have to start or launch web browser first. Just click on the icon available at your desktop or taskbar.

2) To access a website we have to input URL or web address into address bare.

3) When a webpage is loaded it may show the title.

4) A browser window has many controls on it for a better web experience & surfing. Forward button (right arrow) & backward button (left arrow) & provided to go back & forth bet^n the webpages. These are combindly known as Navigation button.

5) A webpage may comprise many parts & sections to present info. If any part is not loaded well then the Refresh button is provided to reload the webpage & update the info.

6) During a website search we may click on various hyperlinks to find more related info. (Hyperlink may be opened in the same window or new tab)

7) if we want to search or browse a new webpage then we may open a new tab window using the + control.

8) The browsers provides the facility of storing & managing frequently visiting webpages with the facility of book marking.

9) we can may customize it & add additional functionality by installing extension.

10) Every chrome browsers windows has 4 controls on the right upper corner namely Searchtabs, minimize, restore & close.

11) chrome browsers provide the capability to synchronize different user settings accross different machine. A users can store its bookmark & passwords.

12) Chrome browsers has browsers customize & control section via an ellipsis ":"

13) We can access many functionalities via right-clicking on the webpage.

Common Browsers Features

1. Bookmark:
   It is the process of storing URL for future retrieval. With this features users can stored & manage web address of frequently

2. Download Management:
   This is an inbuilt sw tool for browsers that allows the users to manage all downloaded file. It display files in chronological orders.

3. Password Management:
   Browsers provide facility to store usernames & passwords of websites that require authentication.

4. Tabbed Browsing
It allows users to browse different websites simultaneously on different tab windows.

5. Browser History
Browsers can store all webpages visited by its users with associated data like the page title, time, of visit etc.

6. Form Management
This feature is also known as auto-complete feature. It enables the user to auto-fill the webform entries of a user.

7. Spell checking

8. Privacy Mode
It allows user to surf the web without recording browsing history, cookies, This is known as "Incognito" in chrome & "inPrivateBrowsing" in ms Edge

9. Auto Update

10. Ad blocking

11. Incremental Search

12. Page Zooming

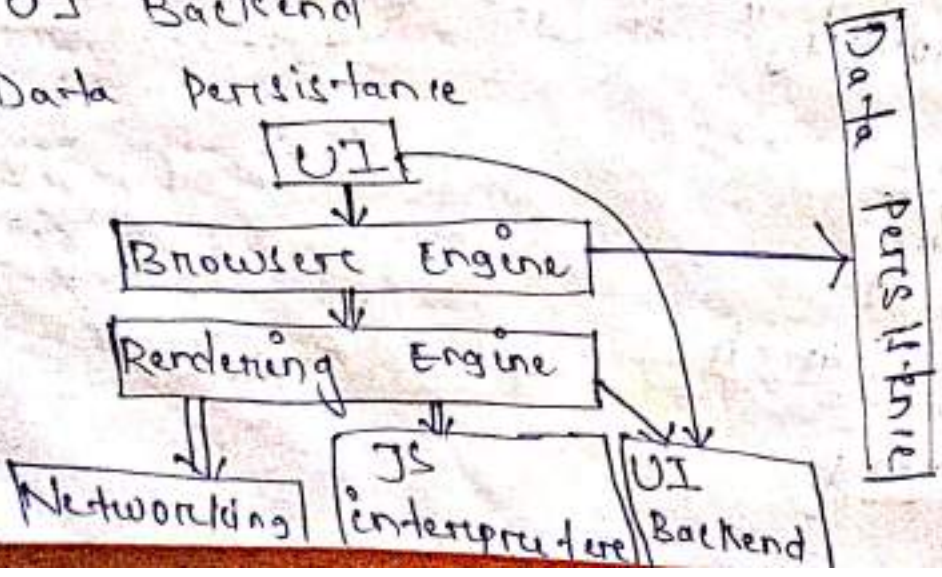
Constituent of a web browser
Component

→ A browser is constituted with a UI, browser engine, rendering engine & other components

→ Browsers are built of frontend & backend. while frontend ensures how the webpage appears on the browser, the backend handles the requests & is the carrier of info.

→ Each browser is made up of 7 different components

a) User Interface
b) Browser Engine
c) Rendering engine
d) Networking
e) Javascript Interpreters
f) UI Backend
g) Data persistance



a) User Interface

It allows end-users to interact with all visual elements available on the webpage. The visual elements include the addressbar, home buttom, next button etc

b) Browser Engine

It is a bridge bet" the UI & the rendering engine.

→ A fast & efficient browser engine can help webpages load quickly & smoothly, while

c) Rendering Engine

This component is responsible for rendering a specific webpage requested by the users on their screen.

→ It interprets HTML & XML document along with images that are styled on formatted using CSS.

d) Networking

This component is responsible for managing n/w calls standard protocols like HTTP or FTP.

e) Javascript interepreters

It is responsible for Parsing & executing the JS code.

f) UI Backend

This component uses the user interface method of underlying OS.

g) Data storage / Persistance

→ A web browsers needs to store various types of data locally.

eg cookies, webSQL, IndexedDB etc

Search Engine

It is a s/w system that provides hyperlink to webpages & other relevent info. on the web in response to a user's query.

→ The user i/p a query within a web browser or mobile app & search results are often list of hyperlinks, accompanied by textual summaries & image.

→ eg Google, Yahoo, Bing, Baidu, Yandex, Duckduckgo etc

Types of web searches

Web searches queries are classified into 3 types

1. Navigational : users may input some search keywords not for seeking direct info. about the entered text.

2. ~~Informational~~ :

→ A navigational search query indicates the user is looking to find a particular website or find particular company or brand.

→ The user will have a clear idea of what they are searching for but may not known how to get.

→ eg Youtube.

2. Informational :

→ It indicates the users is hoping to find info. on a particular topic.

→ eg How to bake bread.,

What is the capital of Brazil?

3. Transactional:

It indicates the user is looking to complete a transaction & this will usually mean buying a product or paying for a service.

→ These searches can be quite specific such as "buy playstation 5".

How do SearchEngines work?

→ Search engine aims to provide the most relevant search results in minimal time to their users.

→ A search engine generally performs 3 functions

1. crawling: can the search engine find your site

It is the process used by search engine web crawlers (bots or spiders) to visit & download a page & extract its links in order to discover additional pages.

2. Indexing

It is the process by which search engine organize info before a search to enable super fast responses to queries

3. Ranking

The search engine ranking of a website, or URL, refers to its spot on the search engine results page

How to search the Web?

To perform a search we will need to navigate to a search engine in our web browser, type one or more keywords - also known as search terms then press enter on your keyword.

Google Search symbols, operators & commands

1. Quotation Marks (" ")

Use quotes to search for an exact word or set of words.

→ This is useful when searching for a specific phrase.

2. Minus Sign (-)

Exclude specific words from your search

→ eg dolphins - football

3. Site operator (site)

Restrict your search to a specific site or domain

→ eg site.com climate change

4. OR operator (OR)

Use OR to search for either one of several words.

→ eg renewable energy or solar or wind

5. Asterisk (*)

Use as a placeholder for any unknown or wildcard term.

→ eg largest * in the world

6. File type operator (filetype)

Restrict results to a specific file type

→ eg filetype renewable energy policy

7. Related operator (related)

Find sites related to a specified web page.

→ eg related.com

8. intitle operator (intitle)

Find pages with a specific word on words in the title

eg - intitle trails

9. inurl operator (inurl)

Find pages with a specific word or words in the URL

eg inurl Forecast

10. calculator

Use google search as a calculator for arithmetic operations

→ eg 235 * 18

11. Unit converter

convert units of measurement directly through google search

→ eg 50 pounds to kilograms

Google - Advanced Search

1. The users has to open a web browsers & navigate to the google search engine.
2. Type their search term in search box
3. Users can view survey results based on various provided categories like. news, images, books, videos, maps etc.
4. For each such category, some additional filters are associated.

& so on

"google.com/advanced-search"

Web Portal

→ A portal is a web-based platform that collects info. from different sources into a single UI & presents users with the most relevant info. for their context.

Awareness about Digital India Portals

The goverement of India has developed many portals & IT based infrastructure to empower its citizens.

→ Those portals in which services are presented & updated by the central goverement & whose aim is Nation wide are called National portals.

→ eg India.gov.in or mygov.in

What is digital India?

→ Digitial India is an initiative launched by the India government in 2015 aimed at transforming India into a digitally empowered society & Knowledge economy.

→ The program focuses on increasing internet connectivity, improving digital infrastructure, promoting digita literacy & providing online services to citizens.

Key version of Digital India

1. Digital infrastructure as a core utility to Every citizen
   i. Ensuring high speed internet access bore all citizens.
   ii) providing a unique digital identity i.e lifelong, online & authenticable to every

citizen.

iii) Enabling mobile & banking access

iv) Ensuring easy access to common service centers.

2. Governance & service on Demand

i) Making all government services available online.

ii) Seamlessly integrated services accross department & jurisdictions.

iii) Enabling electronic & cashless, financial transactions.

3. Digital Empowerment of citizens.

i) Universal digital literacy

ii) Easy access to digital resources.

iii) Making all documents & certificates available on the cloud.

iv) citizens not required to physically submit govt. documents / certificates.

Bill

pillars of Digital India Progr...

1. Broadband Highways :

Developing broadband infrastructure across rural & urban areas to ensure high speed internet access.

2. Universal Access to Mobile connectivity

→ Ensuring mobile connectivity in all uncovered area in the country to enhance communication & access to services

3. Public internet Access Programme

Establishing common service centres (CSCs) & post offices as multi-service centres for delivering digital services.

4. E-Governance - Reforming government through technology

Improving delivery of government services by making them available online & automating workflows.

5. E-Kranti - Electronic delivery of Services

Transforming the delivery of various govt. services electronically across sectors

such as health, education, agriculture & Justice.

6. Information for All

providing open access to government data & documents to promote transparency & citizen engagement.

7. Electronics Manufacturing

Promoting the manufacturing of electronics within India to reduce dependency on import & generate employment.

8. IT for Jobs

Creating training programme to develop IT skills & provide employment opportunities.

9. Early Harvest Programme

Implementing short-term projects that can deliver immediate benefits such as IT platform for messages, biometric attendance, public wi-fi etc.

1. Digital India Portals (Infrastructure ...)

a) AADHAR (uidai.gov.in)

b) COE-IT (coe-iot.in)

c) CERT-IN (cert-in.org.in) → computer emergency response Team

d) CSCS (csc.gov.in) → computer service centre

e) cyber swachhta kendra (cyberswachhtakendra.gov.in)

f) Digilocker (digilocker.gov.in)

g) DISHA (ndlm.in)

h) Digitize India Platform (digitizeindia.gov.in)

i) ESIGN (cca.gov.in)

j) ESCO- MEOLL (m.eoc.gov.in)

k) GOVT E-MARKET PLACE (gem.gov.in)

l) IRCTC (irctc.co.in)

m) JEEVAN PRAMAAN (jeevanpramaan.gov.in)

n) MEGHRAJ (cloud.gov.in)

2. Digital India Portals (Service Based)

a) SUGAMYA BHARAT ABHIYAAN (accessibleindia.gov.in)

b) BHIM (bhimupi.org.in)

c) Digital AIIMS (ehospital.nic.in)

d) E-PANCHAYAT (epanchayat.in)

e) E-HOSPITAL (ehospital.nic.in)

f) E-PATH

g) E-PATHSHALA (epathshala.nic.in)

h) E SAMPARK (Sampark.gov.in)

3. Digital india portals (Empowerment)

a) BPO SCHEMES (bpo.stpi.in)

b) MYGOV (mygov.in)

c) PMKVVY (pmkvyofficial.org)

State Portal

The state portal is a nodal source of info. about a particular state & its various department & their associated services accurately & comprehensively.

Features of state Portal

1. It provides single point info. access to schemes & services like health, agriculture, edn, employment, taxes, pension etc.
2. It transparently provides info & helps in reducing corruption.
3. These are part of e-governance & reduces paperwork.
4. It makes government depart...

How to Navigate state portal

1. Go to URL

https://knowindia.gov.in/state-uts/ or

www.india.gov.in/india-glance/states-india

College Portal

It is a web portal that provides info. related to different stakeholders of a college like its current students & their families, alumni network, faculties & staff personals of the college, new aspirants' candidate who wish to get addmission in the college & higher officials etc.

→ With the help of this internal college or educational institutes can manage record of their student in a systematic manner.

→ college portal plays an imp. role in providing up-to-date info. about college related work & activities like departmental notice info. about placements & exams, fees due date, etc curriculum details etc.

→ college portal can be categorize into static or dynamic portals.
static = non changing content
dynamic = changing information.

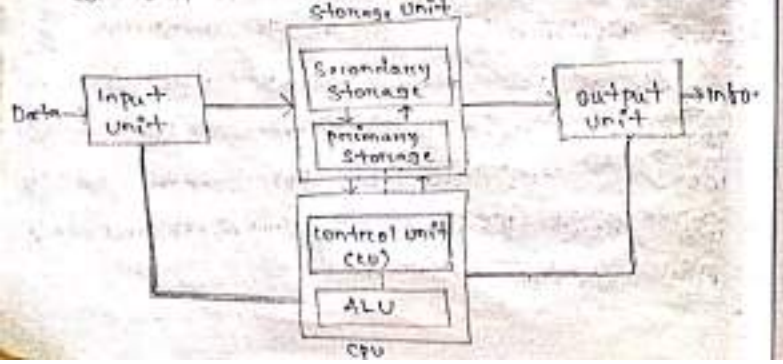
How to Navigate college portal

search
Orissa.vikash.com

Computers System

computers are not only used in commercial & business use but also used in various field like health, education, launching satellite etc.

→ computers are available in different sizes & have different capabilities of processing commonly known as configuration.



central processing unit (CPU)

→ CPU = ALU + CU + MU

ALU = Arithmetic & Logical unit
CU = control unit
MU = Memory unit

→ CPU is also known as brain of computer.
→ CPU is the place where actual processing of data takes place on the execution of the program.
→ CPU is responsible for:
i) processing data
ii) Turning i/p data to output data.

a) Microprocessor

It is a silicon chip with ALU, register, control unit.

→ The microprocessor is capable of carrying out a large no. of fun like receiving data, processing data & storing the results & outputting the required result.
→ It has responsibility to perform ALU operations & control the components connected to it like memory, I/p, I/o devices etc.

b) ALU (Arithmetic & logic unit)

→ It performs all the arithmetic & logical operations like the computers eg- Addition, subtraction, compare, complement, shift etc.

→ ALU is made up of 3 parts

i) Adder where actual calculations take place
ii) Registers which stored in to temporarily.
iii) Accumulators in which the intermittent results of the calculations are kept.

c) control unit (CU)

→ It controls all others units in the computer

→ The CU instruct the i/p unit where to store the data after receiving it from the user.

→ It controls the flow of data & instruction from storage unit to ALU.

→ It also control the flow of results from the ALU to storage unit.

→ CU is the central Nervous system of the computers.

d) ~~Storage unit~~ Memory unit

The instructions & data given to the computers & are stored in the memory or storage unit.

→ It is also used to store intermittent results & info.

→ The smallest unit of Memory is called a Bit. A bit can have the value 1 or 0 which is known as binary value.

→ Group of 8 bits form a Byte.

Unit	Symbol	Capacity
Bit	b	1 or 0 can be stored
Byte	B	8 bits
Kilobyte	KB	1024 Byte
Megabyte	MB	1024 KB
Gigabyte	GB	1024 MB
Terabyte	TB	1024 GB
Petabyte	PB	1024 TB
Exabyte	EB	1024 PB
Zettabyte	ZB	1024 EB
Yottabyte	YB	1024 ZB
Brontobyte	BB	1024 YB
Geop Byte	GB	1024 BB

Types of computers Memory

→ The storage unit of the computer holds data & instruction that are entered through i/p unit, before they are processed.

→ It preserves the intermediate & final before these are send to the output devices.
→ The storage devices are classified into 2 types

a) Primary Memory
→ It is also known as main memory or internal storage because it directly accessible by the CPU.
→ Due to its fast access rate & circuit complexity, it is expensive as compare to Secondary memory.
→ A computer can't work if there is no primary memory installed.
→ RAM, ROM & Cache Memory are the example of primary memory.

i) Random Access Memory (RAM) volatile
→ It is a HW that temporarily/ stores data program.
→ It is the fastest part of main memory which can directly accessed by the CPU.
→ It reads & writes programs until the computer is switched on.

SRAM
→ Static Random Access Memory.
→ It stores data as long as the power supply 'ON'

DRAM
→ Dynamic RAM.
→ It stores the data for a very short amount of time before losing the data even though power supply 'ON'

ii) ROM (Read only Memory)
→ The programs stored in ROM are permanent & are not lost when the current is switched off. So it is non-volatile memory.
→ ROM has following categories
• PROM (Programmable Read only Memory)
→ It can be modified only once by a user.
• EPROM (Erasable & PROM)
→ Data can be erased as well as programmed only once.
→ It can store data for a min of 10-20 years.
→ To erase & reprogram EPROM, the user needs to pass UV lights for 40 min

EEPROM(Electrically EPROM)

↳ allows data to be erased using high voltage electrical charge.

iii) Cache Memory

→ It is also called cache supplementary memory system that temporarily stores frequently used instructions & data for quicker processing by CPU.

→ Cache holds a copy of only the most frequently used info. or program codes stored in the main memory.

b) Secondary Memory

→ It is a permanent type of memory in a computer that holds large amount of data.

→ This is an external memory that represent different storage media on which data & programs can be saved for long-term.

→ It is not directly accessible by CPU.

i) Hard Disc

ii) compact Disc

iii) pendrive

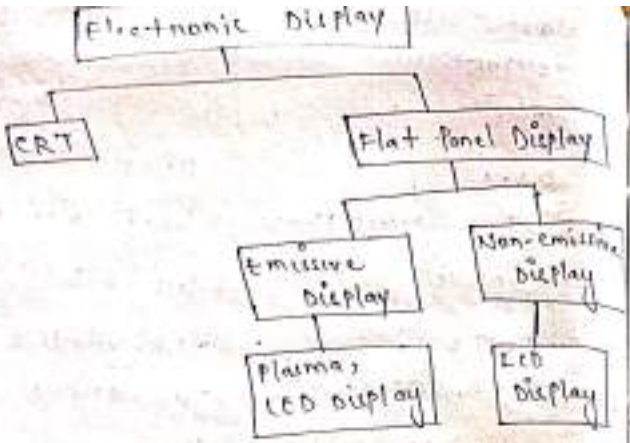
RAM	ROM
→ Random Access Memory	→ Read only Memory
→ Expensive	→ less Expensive
→ volatile	→ Non-volatile
→ High capacity	→ Low capacity
→ Read, Modify & delete	→ Read

Display

- A display is an o/p device to present info. in visual form.

→ It may be an external monitor or built-in screen with the digital device eg- computer, Mobile, ATM etc

→ A computer display is simply the screen that will give you, your video o/p from the computer.



(Types of Display)

1. CRT (Cathode Ray Tube)
→ It was used most commonly in the manufacturing of television screen.
→ A CRT is a vacuum tube containing an electron gun at one end & a fluorescent screen at another end.
2. LCD (Liquid crystal Display)
→ It referred to as flat screen display.
3. LED (Light Emitting Diode)
4. DLP (Digital Light processing)
5. Plasma Monitors
6. OLED (Organic LED)
7. Touch Screen Monitors

Keyboards
It is a primary input device used with the computers.
→ It is used to input data & instruction of a user in a computer.
→ It is composed of buttons used to create letters, no., symbols & perform function.

1. Function Keys
The topmost row of the keyword have fun keys. There are 12 keys. (F1 to F12)
2. Character Keys
A-Z, a-z, & 0-9, Tabs, caps.
→ These key are used to type letters, punctuation & other characters
3. Modifiers Keys
Ctrl, Alt, Shift, Alt-Gr
4. Navigation Keys
This is also termed cursor control key.

→ It is used to navigate cursors in any direction.

→ Eg: left (←), right (→), up (↑) & down (↓) Home, end.

5. Numeric Keypad
Numeric key of keypad 0-9, Numlock, -, +, /, * and Del key

6. System command key
i) PrtSc - Screenshot of entire screen
ii) Break/pause : terminate the program
iii) Esc : quit a dialogue box
iv) Enter : Terminate a paragraph & request for a new line
v) Shift
vi) Windows : start appl^n menu
vii) Space Bar : Space bet^n words during typing
viii) Backspace : Erase the text to the left of the cursor's position.

Mouse
It is a handheld i/p device that controls the pointer in a GUI.
→ It is the most widely used pointing device. It can move & select text, icons, files & folders.
→ Some basic operation of mouse are
1. Point : to a specific location on a screen.
2. Click : left mouse button
3. Right click
4. Double click
5. Drag & Drop
6. Scrolling

Hard Disk Drive
It is a nonvolatile Memory.
→ HDD stores os files, appl^n problems, media & other documents.
→ It uses a disk & magnets to write data on the disk permanently.
→ HDD can be used to store & retrieve digital info. using platter are rotating disk.
→ Data can be read in a random access manner.

component

1. Platters
   - A HDD consists circulare disk called platters sealed with containers which store data inside the hard disk in the form of 1s & 0s.
2. Spindle
   It is used to place the platters in position & rotate as it requires.
3. Read/write arm
   It is used to control read/write heads.
   → It is used to convert the magnetic simbals into electric current.
4. Actuators
   It is used to control read/write arms & transfer data to and from the platters.

HDD Size : Older hard drive had storage of several 100MB to several GB.
→ Newer hard drives have storage size of several 100 GB to several TBs.

Solid State Drive (SSDs)

Modern computers are now using SSD drives as the primary storage device.

→ HDD are very slow as compare to SSD

comparison bet HDD & SSD.

1. SSD & HDD are both Hard disk drive
2. SSD has high read/write performance bore random & sequential data retrieval as compared to HDD.
3. SSD is now more popular as compared to HDD in desktops & Laptops.
4. SSD uses the newest way to read/write data using stacking chips in a grid whereas HDD uses magnetic properties to read/write data.

Others peripheral Devices

→ A peripheral device also called an auxiliary device is any connected device that provide a computers with additional features.
→ Peripheral is commonly divided into 3 kinds input device, output device & storage device.

a) Input Device

These are used to send data or command to the computer system.

1. Scanners
2. Bar code Readers
3. Webcam
4. Microphone
5. Digital camera
6. Light pen
7. Joystick
8. Graphic Table
9. Stylus
10. Touch Screen

b) Output Devices

It provides processed data saved on the computers as O/P. to the User.

1. Projectors
2. printers
3. Speakers
4. Braille Reader
5. plotter
6. Graphics card
7. Sound card

c) Storage Devices

It stores data processed by the computers, HDD, FD, Pendrive, memorycard. CD/DVD

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Lecture Note on
Introduction to IT System

Diploma 1st Year

Branch-CIVIL,CSE,MECH,EE

Submitted By:- Ms. Monali

Patel

Senior Lecture
Computer Science & Engineering

UNIT - 2

OPERATING SYSTEM

Software

It is a set of program (set of instruction) that allows the users to perform a well defined function on some specified task.

→ It is responsible for directing all computers related devices & instructing them regarding what & how the task to be performed.

Types of software

a) System software / Low-level software

→ It acts as a middle man that checks & facilitates the operations flowing bet" the user & Hardware.

The further classification of system s/w are as follows.

1. Operating System (OS)

→ It acts as an intermediary bet" a users of a computer & the computers Hardware.

→ eg Windows OS, Open Source OS, Macintosh OS (-Apple)

2. Device Drivers

It operates or controls some specific hardware device linked to our system.

eg Printer, Sound cards, Harddisk, Keyboard, mouse etc (I/O device drivers, USB, Display drivers, Sound card drivers)

b) Application Software

Appl^n s/w are end user computers programs developed primarily to provide specific functionality to the users.

→ online research, completing notes, watching movies, playing games etc)

System s/w	Application s/w
→ It gives the path for appl^n s/w to run	→ It is built for specific task.
→ Without system s/w, the system stops & can't run.	→ It always run.

→ It runs when the system is turned on & stops when the system is turned off.

→ It operates the system in the background.

→ eg OS

→ It runs as per the user's request.

→ It runs in the front end.

→ eg photoshop, VLC etc

Overview of OS

→ OS can be defined as an interface between user & Hardware.

→ OS responsible for all the Process, Resource allocation, CPU management, file management etc.

→ Some of most used OS are MS-windows, ubuntu, Mac OS, fedora, cent OS, Debian, Android & Solaries.

→ Nowadays computing is done prominently by smartphone & tablets.

- The Android OS is most popular OS for Smartphone (developed by Nov 2007, commercially launched in Sept 2008)

• iOS is exclusive bom apple company

Linux OS installation

→ Linux OS is the most populare open-Source System.

→ It is termed open-source os because the Source code is not hidden.

→ one of the distribution of the linux os is ubuntu linux.

Installation of ubuntu: A clean install

System requirement

component	Specification
Processore	2GHz dual-core
RAM	4GB
Storage	25GB
VGA	1024 x 768 Screen Resolution
Internet Access	

Step 1: Download UBUNTU

We need to download ubuntu os from the official website

"http://www.ubuntu.com

Step-2 Create Bootable Media (Live USB)

Create a bootable USB using various tools like Rufus, Unetbootin etc.

Rufus

1. Download rufus from its official website.
2. Insert your pendrive
3. Run the s/w rufus by double click.
4. Select your pendrive & ISO image
5. Than click on Select option
6. Select your ubuntu image
7. click on 'START' click on 'OK'
8. Unplug your pendrive.

Step-3 Boot from the Bootable Media (Live USB)

1. Plug the prepare live ubuntu USB disk into your System.
2. Access to BIOS Setting by pressing keys F1 or F2 or F10(hp) or F12 (Dell). It will show BIOS Screen. Give a highere priority to your USB drive.

3. Save & exit BIOS Settings

Step-4 Install Ubuntu

1. The booting process will begin once boot media is detected.
2. Afterc a while, we will see ubuntu welcome page. Here we have to click the install ubuntu option.
3. Next, Select the language & click continue.
4. Thereafterc Select the keyboard layout & click continue.
5. Now we have to select the types of apps we want to begin with. We may choose any of the available options i.e Normal or minimal. go fore Normal installation.
6. We have to choose the actual installati type. We choose the option first i.e "Erase disk & install" for a fresh installation.

7. By clicking "install Now" option we will get a warning window. It alerts us about the disk formatting. As we took backup so just hit on the continue option.

8. We have to select the time zone i.e. 'Kolkata' then press continue.

9. Now we will be asked to create login credentials & name of the computer click on "continue" button after telling 'who are you'.

10. Now we wait for 5-10mins. Meanwhile we will be presented a slide show about the features of Ubuntu & basic tips for using os.

11. After completion of the installation process we will presented installation complete dialog box. Just hit 'Restart Now' option to complete the process.

12. Remove USB. Ubuntu will boot from the harddisk.

13. Login & password

14. Use Ubuntu

→ Google's self driving cars, Tesla, Netflix, UBER, Dropbox etc use ubuntu os.

WINDOWS OS INSTALLATION

MS-windows os have a long history of successful os.

→ The windows os family has various variants over time i.e windows xp, windows 7, windows where at the end of 2021, there is a new version is came i.e windows 11.

System Requirements

Component	Specification
Processore	1 GHz
RAM	1 GB for 32-bit or 2GB for 64 bit
Storage	32 GB of space or more
Graphics card	Direct X 9 comptaible or later
Display	800 X 600 resolution or greater
Internet	internet connection during setu

Installation of windows 10 : A clean install

Step 1 : Download windows 10

We need a license to install windows 10.

→ We must Prepare a bootable USB or DVD

→ Now when the System starts with bootable media (live media) it will show a message to press any key to boot from CD or DVD. Just press any key to begin the installation

Step 2 : Boot from the Bootable Media (DVD/ pendrive)

Now we need to restart the system so that booting the system with the help of any boot media.

Step-3 Install Windows 10

1. We will get the first screen. choose language Time & currency format & keyboard or i/p method provided drop down boxes. click Next.

2. In the next window click on "Install Now".

3. The next window will ask us for licensed product key that came with the purchase of window os. Type the product key in the given box to activate the windows

4. The next window will show the license terms read & accept terms by marking checkbox. click on 'Next'

5. The next screen will ask to choose the type of installation, select "custom install windows only" by clicking.

6. Now select the partition where we want to install the OS. Atleast 20GB of free storage is recommended.

7. Now the installation of windows proceeds automatically. PC may reboot several times during the process.

8. After completing the installation process, we have to select the region & then 'yes'

9. Now we have to select our keyboard layout then "Yes"

10. Now select "set up" for personal use & then yes.

11. Now sign in with the ms account & click 'Next'. If you don't have an account, here you may create new one.

12. Enter your password & click "Next".

13. Now we have to set up PIN that will be useful in logging in to the device, appl^n & services then 'OK'.

14. If we wish to save our files on one Drive we can specify it by clicking 'yes'

15. We can use microsoft personal assistant ie cortana by clicking 'yes'.

16. Now we have to choose our privacy settings by given toggle button click "Accept".

17. Now it may take few minutes to configure & finally, we will get the homescreen or desktop screen of windows os.

Unix Shell

A shell is a special program that acts as an intermediary bet^n the user & the Kernel

→ Kernel manages system resources.

→ Unix shell provides a platform or environment by which any user can interact with the computer system.

→ In unix os there are 2 types of command inputs i.e

i) command line shells like sh-

ii) The Bourne shell bash-

Features of Shell

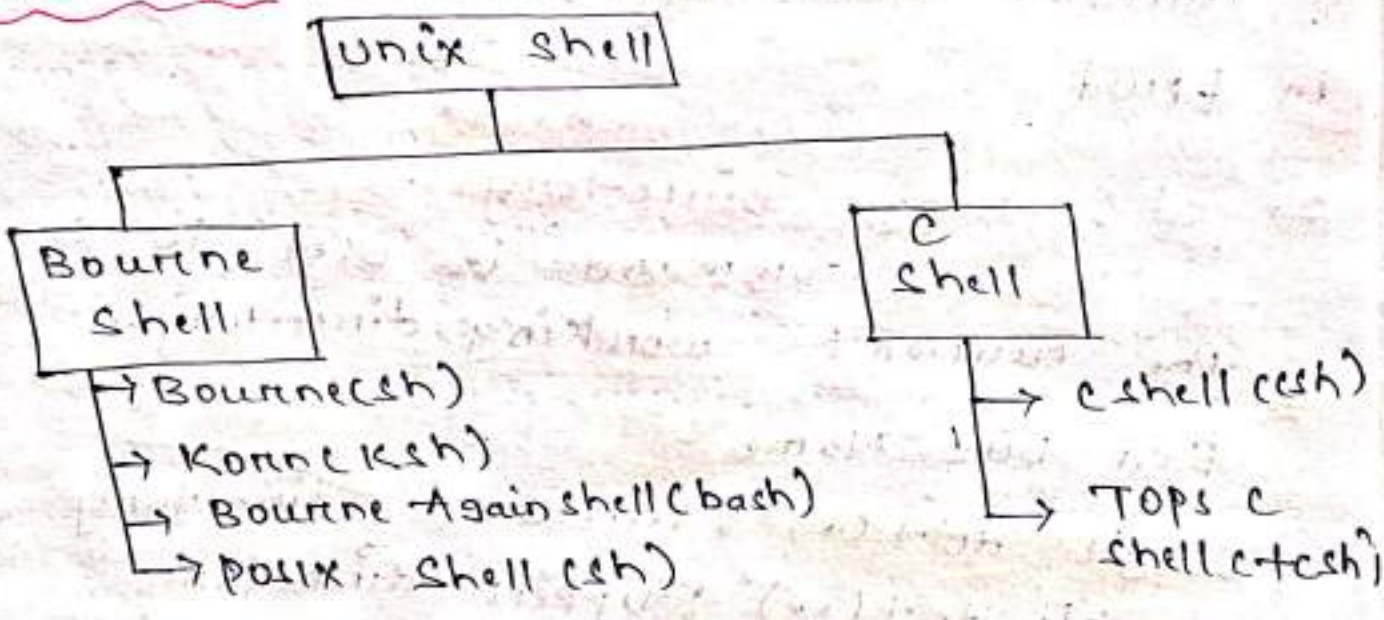
1. Prompt : shell display a characteres (# or $) when it is ready to accept a new command.

2. command interpretation : when a user enteres a command, it is the shell that determines which program to run

3. Multitasking : Run more than 1 command at a time. It can also repeats the previous one

4. Command History
5. Wildcards or Aliases : (*), (?) etc
6. Piping & I/O Redirection : The o/p of one program can directly be supplied to another program or file.

Shell Types



Shell commands

It consist of a single or more word separated by white space.

Structure

command <options> <arguments>

→ Shells also have some commands that are built into shells termed as built-in command or internal commands.

Directory & file Manipulation commands

1. pwd : print working directory

It prints the name of the current or present working directory

→ It prints the complete path of the current working directory

eg $pwd

2. cd : change Directory

The cd command is used to change the current working directory.

$cd Dirc Name

Single dot(.) : current directory

double dot(..) : upper directory

tilde(~) : Home directory.

3. ls : lists content of directory

The ls command lists files & subdirectories in a directory.

-L : list all files in long format

-a : list all hidden files

4. mkdir : create a new directory
$mkdir <name of directory>

5. rmdir : remove a directory if it empty
$rmdir <name of directory>

6. rm : remove files
$rm <filename>

7. mv : move
mv [options] <old-filepath> <new-filepath>

8. touch : create file
It creates a new empty file.
$touch <filename>

9. cat : view complete file content
It is used to create, view & concatenate files
$cat <filename> (to view file)
$cat <filename1> <filename2> (view multiple file)
$cat -n filename
$cat > [new filename] (to create a file)
& cat [source filename] > [destination filename]

10 cp : copy files
$cp [source-file] <destination-file>

Terminals, information & utility commands:

1. cleare : cleare the terminals
   $cleare
2. echo : write a string to standard opp device
   $echo <string>
   eg $echo I Love My India
3. repeat : repeats commands
   repeat <nombere> <command>
4. history
   -r displays the list in reverse
5. help
   $rem --help
6. wc : word count
   counts & displays the no. of lines, words & characters of a file
   wc [options] <Filename>
   wc -c
7. diff : display differences
   diff [options] <Filename1> <Filename2>
8. cmp : compare two files
   $cmp <Filename1> <Filename2>

9. Grep : globally Search fore regulare expression & print out

Grep [options] <regulare-expression> <filename>

VI EDITOR

→ VI is a default standard editor that is available in almost all the flavors of unix os.

→ VI is the short form of visual editor.

→ It can be used to edit an existing file or create new file. It can also be used to simply read a text file.

$vi <Filename>

command Mode

→ It is used to perform some commands.

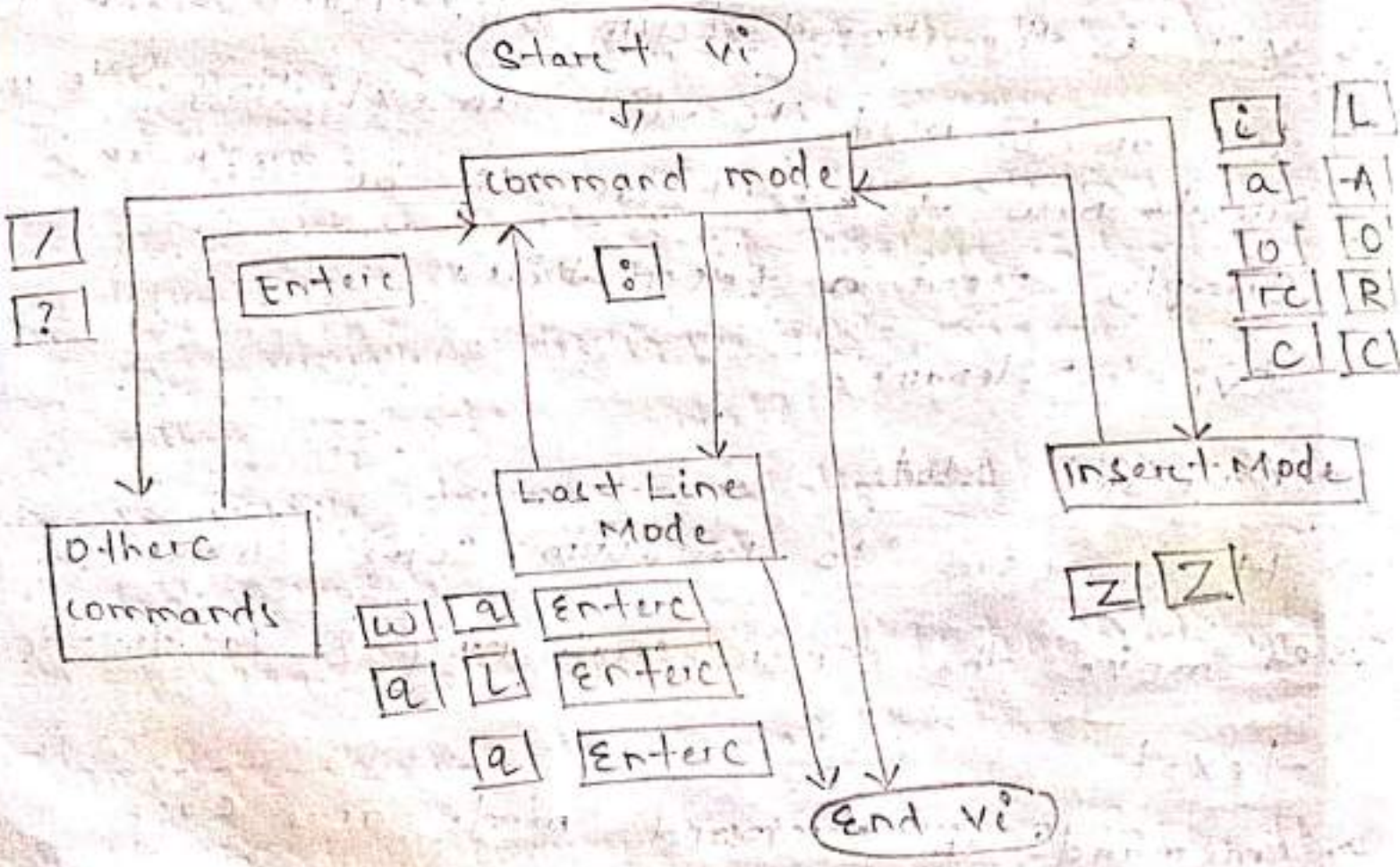
→ eg move the cursor, cut, opy & paste the text.

→ commands in command mode are case sensitive.

Insert Mode

This mode is used for inserting text into the file by vi editor.

→ By pressing "i" on the keyboard, we can switch from command mode to the insert mode. And press 'Esc' key to return to the command mode.



Key	Function
i	insert a cursor
a	write after cursor

A	write at the end of line
ESC	Terminate insert mode
u	Undo last change
U	Undo all changes to the entire line
o	open a new line
dd	Delete line
3dd	Delete 3 lines
D	Delete contents of line after cursor
C	Delete content of a line after the cursor & insert mode next
dw	Delete word
4dw	Delete 4 word
cw	change word
x	Delete characters at the cursore
rc	Replace characters
R	Overwrite characters from cursor onwards
s	Substitute 1 character
S	Substitute entire line
~	change case of individual character

Moving within a file

Key	Function
K	move cursor up
j	move cursor down
h	move cursor left
L	move cursor right

Saving & closing file

Key	Function
shift+ZZ	Save & quit
:w	Save but keep it open
:q	Quit without save
:wq	Save file & quit

UNIT - 3

HTML & CSS

HTML is a building tools useful for webpages & displaying them in a web browser.

→ In general HTML document comprises of 2 functionalities

1. Hypertext :
   It is a regular text having the capability within the text to connect or reference other documents (Hyperlinking)

2. Markup :
   It is a system for annotating a document such that it displays intended text in a visually distinguishable manner from other content.

→ An HTML document is formed with many tags.

→ A tag is a special word enclosed within angular brackets < >.

→ If a tag conveys structuring info, then it is known as structural tag.
   like <html> <body> <head>

→ If it is informing web browser about the formatting of content then it is known as a formatting tag like <b>, <big>, <hr> <img>

→ In html there are 2 types of tag

1. Paired tag / container tag : The tag which are used with pairing

eg <html></html>, <body></body> etc

2. Single tag : It can be used without any pair tag

eg

Start tag

 I Love India

align → attribute name

right → value

I Love India → content

 → End tag

Structure of a HTML document

```
<html>
  <head>
    <title> Page title </title>
  </head>
  <body> Welcome to HTML. </body>
</html>
```

How to create a webpage

1. Open any text editor, & type the code.
2. After that save it with .html
3. Now opened in any browsers using double-click on the file.

Basic HTML tag

Tag	Description
1. ..	To center align any part of the text
2. ..	To start a paragraph with new line
3. 	Next line
4. ..	Bold any part of text
5. <u>...</u>	underline "
6. ...	Italic "
7. <blockquote>.. </blockquote>	To indent the text from both side
8. ..	specific font on the text
9. <hn>..</hn>	Format headings
10. ^{..}	Superscript $e=mc^2$
11. _{..}	Subscript H_2O

Tag	Attributes	value
<P>	align	Left, right, center, Justify
<font>	face	Any valid font name
	size	1 to 7
	colore	Red or #FF0000 etc

Page Setting Tags

These tags are used to set the title of the webpage, its background color & color of text etc.

Attribute	value
Background	used to display image in background
Bgcolore	RGB value
text	RGB value

HTML <font> Tag

It is used to create an attractive & readable web page.

→ The <font> is used to change the colors, size and style of a text.

Attributes

a) Font size
b) Font Type
c) Font colors

a) Font size

It is used to adjust the size of the text in the HTML document

→ The range of size is from 1 to 7 & default size is 3.

Syntax

<font size = "numbers">

eg

```
<html>
<body>
<font size = "1"> MONALI </font></b
<font size = "2"> MONALI </font> <br>
<font size = "3"> MONALI </font> <br>
<font size = "4"> MONALI </font>
</body>
</html>
```

b) Font Type

The font type can be set by using face attributes with font tag in HTML.

Syntax

<font face = "font-family">

eg

```
<html>
<body>
<font face = "Times New Roman" size = "6">
VIKASH POLYTECHNIC <br> </font>
<font face = "Verdana" size = "6">
VIKASH POLYTCHNIC </font>
</body>
</html>
```

c) Font color

The font color is used to set the text color using a font tag with the color attribute.

Syntax

<font color = "color-name | hex-number | rgb-number">

eg

```
<html>
<body>
<font color = "#009900"> VIKASH <br>
</font>
```

 VIKASH

</body>
</html>

HTML Special Tag

1.
2.   - Bold Tag
3.   - Italic Tag
4. <u> </u> - underline Tag
5. <strike> </strike> Monali
6.
 - New line
7. <mark> </mark> - Highlight Text
8.   - Paragraph
9. <del> </del> - delete
10. <ins> </ins> - insert
11. - Superscript $E = mc^2$
12. - Subscript H_2O
13. <marquee> </marquee> - Scrolling Text
14.
15. <h1> </h1> - Heading Tag
16. <cite> </cite>
17. <q> </q> - quotation. "Monali"
18. <blockquote> </blockquote> - Indentation

Listing tags

HTML provides 3 ways to specify a list of info.

1. Unordered List :

 . .

Each item lists starts with <li> &

2. Ordered List

 ...

→ Each list <li> ...

3. Definition tag

It is used to describe the listed items

→ The <dl> - description List

<dt> - term

<dd> - describe each items

Unordered List

- item
- item
- item

Ordered List

1. 1st item
2. 2nd item
3. 3rd item

eg

```
<html>
<body>
<h2> An unordered HTML list </h2>
<ul>
<li> coffee </li>
<li> Tea </li>
<li> Milk </li>
</ul>
</body> </html>
```

- coffee
- Tea
- Milk

2. <html>
<body>
<h2> An ordered List </h2>

 coffee
 Tea
 Milk

</body>
</html>

1. coffee
2. Tea
3. Milk

3. <html>
<body>
<h2> A Description List </h2>
<dl>
<dt> coffee </dt>
<dd> Black hot drink </dd>
<dt> Milk </dt>
<dd> white hot drink </dd>
</dl>
</body>
</html>

Adding Graphics to HTML

The facility to add graphics & images to a document · by using <img>

Attribute	values
Align	Top, Middle, Bottom, Left, center & right
Borderc	Border of an image
width	width of " " in % or Pixels
Height	Height " " "
Hspace	horizontal space
Vspace	vertical space
Alt	Alternative text
Src	image source

HTML tables

To display data in form of a 2D, in form of rows & columns <table> tag is used.

<table> consist of 3 tag

a) <tr> </tr> - table row

b) < th> </th> - table heading

c) <td> </td> - table data

```
<table>
<tr> <th> First_Name </th>
 <th> Last_Name </th>
 <th> Marks </th>
 </tr>
```

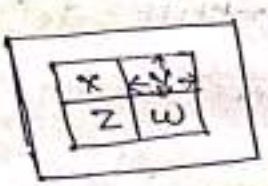
```
<tr>
  <td> Monali </td>
   <td> Patel </td>
    <td> 95 </td>
  </tr>

<tr>
  <td> Snigdha </td>
   <td> Priyambada </td>
    <td> 90 </td>
  </tr>
</table>
```

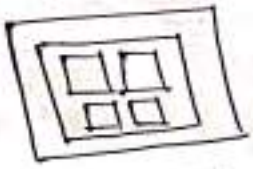
First-Name	Last-Name	Mark
Monali	Patel	95
Snigdha	Priyambada	90

Cellpadding

It is used to padded the content of the text



cell spacing



Rows span & colspan

Regd No.	Name	Mark		
		Sem-1	Sem-2	Sem-3

rowspan = 2
colspan = 3

Linking Webpages

Connecting 1 html document to others is the key reason for the development of www.

→ The capability of linking several web resources is known as hyperlinking.

→ The text or image having linking functionality is known as hypertext or hypermedia.

Note

→ Normally hyperlink occurs in blue in colore

→ The hypertext/hypermedia is underlined.

→ On moving the arrow cursore upon a hyperlink, our default arrow mouse cursore will turn into the shape of little hand.

→ The anchor tag <a>.. is used to create hyperlink

Syntax

 Link-text

Images as Hyperlink

Images can also be used for hyperlinks. We need to use <img> tag in bet^n <a>

 <img src = "img-name">

HTML Forms

HTML form is a method to interact with the users.

→ Such info. can be to take information from the users eg: registration form, feedback form etc.

→ The html <form> element is used to create an html form for user input

```
<form>
  form elements
</form>
```

The <input> Element

It is used to collect information from the users.

Type	Description
<input type = "text">	Single line text
<input type = "radio">	For selecting one of many choices
<input type = "checkbox">	Selecting 0 or more of many choices
<input type = "submit">	Submitting the form
< " = "button">	clickable button

Text fields

```
<form>
First name :<br>
<input type = "text" value = "John" name = "fname">
<br> Last name : <br>
<input type = "text" value = "Doe" name = "lname">
</form>
```

First name:
John
Last name:
Doe

Radio button

```
<h2> Radio Button </h2>
<input type = "radio" name = "favlang" value = "html">
HTML <br>
<input type = "radio" " value = "css">
CSS <br>
<input type = " " " value = "JS">
Javascript <br>
```

Radio Button

- HTML
- CSS
- Javascript

checkboxes

```
<input type = "checkbox" name = "vehicle"
value = "Bike"> I have a book <br>
<input type = "checkbox" . . > I have a car <br>
```

Submit

<input type="submit" value="Submit">

[Submit]

HTML Form elements

The <form> elements can contain one or more of following elements

a) <input>
b) <label>
c) <select>
d) <textarea>
e) <button>
f) <fieldset>
g) <datalist>
h) <output>
i) <option>
j) <optgroup>

a) <input> & <label>

<label> for = "fname" > First Name : </label>
<input type = "text" id = "fname" name = "fname">

b) <Select>

It defines a drop-down list

<label for = "cars" > Choose a car : </label>
<select id = "cars" name = "cars" >
<option value = "volvo" > Volvo </option>
<option value = "saab" > Saab </option>
<option value = "audi" > Audi </option>
</select>

9

```
<html>
<head>
<title> Web form & its components </title> </head>
<body>
<table border=3 width=50% align=left
 cellpadding=5 ><tr> <td>
<form action="local_servere" method="post"
 name="form1">
<h3> participation form for annual day </h3>
Youre Name : <input type="text" name="text1">
 <br> <br>
I am a <input type="radio" value="radio1">
 Girl
 <input type="radio" value="radio1">Boy<br>
Branch : <select name="select">
    <option> computere Sciene </option>
    <option> civil </option>
    <option> Mechanical </option>
    <option> Electrical </option> </select>
Year : <select name="select">
    <option> First </option>
    <option> Second </option>
    <option> Third </option>
    <option> fourth </option> </select>
```

</td> </tr> </table>
</body>
</html>

Cascaded Style Sheet (CSS)

→ It is used to style content of a webpage.

→ HTML created structures of our webpg. but, CSS turns our boring looking html webpages to good looking website.

→ CSS is optional it is impossible to create website without using HTML.

CSS code

```
<html>
 <head>
 <title>
```

Ways to Apply CSS

There are 3 ways to apply ;

1. Inline CSS

Using the style attribute in html elements.

```
<body>
<h1 style = "color : green" ;> Heading </h1>
```

2. Internal CSS

<Style> before body & after head

```
<head>
<title> ... </title>
<style>

h1
  {
    color : green;

  }
</style> </head>
< body> <h1> Heading </h1>
</body>
```

3) External css

By using .css file

→ Different code file for both css & html

style.css

```
h1
{
color : green;

}
```

we have to link css file to html for that.

we use <link> tag

```
<head>
<link  rel = "stylesheet"  href = "style.css">
<title> ... </title>
</head>
<body> <h1> Heading </h1>
```

Inline css

```
<html>
<head>
<body style = "background-
    colon : #00FF00" >
<p> The background is
 green </P>
 </body>
</html>
```

Internal css

```
<html>
<head>
<style type = "text/css" >
h3 {
background-colon : #0000FF ;
colon : #FFFFFF }
</style>
</head>
<body>
<h3> Background is blue
 </h3></body>
</html>
```

External css

external.css

```
<html>
<head>
<link rel="stylesheet"
 type = "text/css"
href = "mystyle.css" ></head>
<body>
<h1> Monali </h1>
 Never fear failure
<h3> Megha Patel </h3>
 </body></html>
```

mystyle.css

```
body
{
background-colore : # 808080
}
```

CSS Selectors

It is used to apply the same style to all elements belonging to a specific class.

→ Selectors are used to find the HTML elements that are to be styled.

→ There are 3 types of selectors,

i) class selectors
ii) Id selectors
iii) Element selectors

1. Element selectors

It is used to style all instances of a specific element in a web page

→ It is done by choosing an element by its tag name & then style is applied to that element.

classSelector.html

```
<html> <head>
<link rel = "stylesheet" type = "text/css"
href = "mystyle1.css" /> </head>
<body>
<h1 id = "sport" > Sports & Fitness </h1>
<p class = "fitness"> The word sport </p>
<h3 class = "fitness" > A sport </h3>
</body> </html>
```

mystyle1.css

.fitness {color: white; background-color: green}.

2. class selector

It is used to apply the same style to all elements belonging to a specific class

3. Id Selector

It is used to apply the same style to specific all elements belonging to a specific in a document which can be selected by its id

id selector.html

```
<html>
<head>
<link rel = "stylesheet" type = "text/css"
href = "mystylesheet.css" /> </head>
<body>
<h4 id = "boxing"> people used to say that boxing is for men & not for women & I thought I will show them. one day.
</h4>
```

```
<br><br>
<h4 id = "shooting"> Practice is a talent
</h4>
</body>
</html>
```

mystyle2.css

```
#shooting { color : blue ; font-size : 18px } ;
```

CSS Properties

The use of css properties enables web browsers to render an aesthetically rich webpage in minimal time.

CSS Font Properties

property	Example
font-family	h1 { font-family : courier, prestige, monospace; }
font-size	h1 { font-size : 20px; }
font-style	h2 { font-family : times new roman font-style : italic ; }
font-variant	h1 { font-variant : small-caps; }
font-weight	h1 { font-weight : normal ; }

CSS Text Properties

Property	Example
letter-spacing	h1 { letter-spacing : 6px ; }
text-align	td { text-align : center ; }
text-decoration	h1 { text-decoration : underline ; }
text-indent	p { text-indent : 60px ; }
text-transform	li { text-transform : uppercase ; }

CSS Background Property

Property	Example
color	h1 { color : blue ; }
background-attachment	td { text-align : center ; }
background-color	p { background-color : blue ; }
background-image	h2 { background-image : url ("title.jpg") ; }
background-repeat	h2 { background-repeat : "repeat" ; }

unit - 4

open Office Tools

Installation of openoffice

The mission of openoffice developers is to create an office suite software community that will run on all major platforms.

→ The following steps describe the process to install Apache openoffice (AOO).

1. First of all, we need to download the current version from the openoffice website. i.e https://www.openoffice.org/download/index.html
2. On the above webpage, we have to choose appropriate options for OS, language & version of open office package to be downloaded.
   → click on 'download full installation' button.
   → A full installation file, size about 135 MB will be downloaded.
3. Start the installation with the download file an installation wizard will appear to guide the installation process. By clicking 'Next' we will be shown a window to choose the installation location. click on 'install' button.

The installation process will began & show some installating info. via intermediate screens.

4. Next a 'customer information' form will be presented to take complete customer information.

→ After filling the form click on Next & then another window will be presented to choose setup.

5. The window depicted will be shown. click on install button to begin the installation process.

→ After Sometimes the openoffice installation completed wizard appears then click on Finish.

6. Now we will have a start link on desktop. we can open the openoffice by double-clicking the link.

The Advantages

1. No Licencing Fees :-
   It's free software. Anyone can use & distribute, copy and modify it without any changes.
2. Cross-Platform :
   The s/w can be installed in several hardware architectures & under multiple OS.
3. Open Source :-
   Source code is openly available.
4. Extensive language Software :-
   Its UI is available in more than 110 languages including Hindi, Tamil etc.
5. Consistent interface :-
   provides users interface with a similare look & feel for better administration.
6. Integration :-
   Apache's components are integrated e.g. Spelling checkers is used consistently across the suite. Drawing tools, calc, impress & Draw is also available.
7. Granularity :-
   Apache options can be set at the component level or even document level.
8. File compatibility
9. No vendor lock-in
10. community support

Openoffice writers

It is a free alternative to windows MS word.

→ Using writers we can create documents, such as reports, letters, create complete books with contents, diagrams, indexes, agendas, are carrying out more complex tasks such as mail merge.

→ The writers provides these important features

i) Templates & styles
ii) Page-layout methods, including frames, columns & tables.
iii) Embedding or linking of graphics, spreadsheet & other objects.
iv) Built-in drawing tools.

v) Built-in drawing tools.
vi) Master documents
vii) Database integration.
viii) Export to pdf, including bookmark

Parts of writer Interface

A. Title Bare
It is situated at the top of the writer window & shows the file name of the current document.

B. Menu Bare
The menu bar is just below the title bare having various menu.
→ When a menu is clicked it dropdows & displays several commands. are with

1) File Menu
contains commands which apply to the entire documents such as open, close, Save as Digital signature, print, & export as pdf.

2) Edit menu
contains commands like undo, Repeat, Autotext Find & replace, cut, copy & Paste etc.

3. View Menu
contains commands which controls the display of documents such as print layout, web layout, full screen view, zoom control etc.

4. Insert Menu
contains commands for inserting elements into headers, footers & pictures in the documents.
→ It can also commands to insert manual break, special characters, Sections, hyperlinks, bookmarks, & cross references. Frame, objects, movies and sound can also be inserted with corresponding commands.

5. Format Menu
contains formatting layout commands for our documents using styles, borrowmatching, Paragraph, Bullet

6. Table Menu
Contains commands about manipulation of table structure eg- insert, delete, merge, split, Select
→ In addition it also contains content formatting

commands like -Autoformat, -Autofit, Sorting etc.

H. Tools Menu

Contains various utility fun^n like Spelling & Grammar, Mail Merge, Autocorrect, and options.

8. Window Menu

contains various commands to control the display of various opened writer windows.

→ The new window command opens another windows whereas the close command closes the current document.

9. Help Menu

contains link to open the AOO help file. update options check for any available update from the Inw

→ It also gives info. about the version & licence info. of the program.

C. Toolbars

→ As per mobility of toolbars, the writer supports several toolbars i.e docked, Floating, & tear-off toolbar.

→ A 'docked toolbar' is fixed by default but it can be moved to different locations.

→ 'Floating toolbar' are context-sensitive. It appears as per the current window & position on selection.

→ 'Tear-off toolbar can be opened via a triangle on toolbar icon

Right-click (context) Menu

Users can click on a paragraph, graphic are other object to open context menu. It is the fastest & easiest way to reach a fun^n of the right-click object.

Rulers

It is used to control & see page margins, paragraph indents & various alignment of written object.

D. Status bars

It is located at the bottom of the workspace.

→ It provides info. about the document & convenient way to quickly change some document

Features:

→ It contains page number, page style, language, written mode, file save format, digital signature, document view layout, page zoom control etc.

Starting a Document

There are many ways to open a fresh text document in AOO writer:

1. Via operating System Menu

We can open any AOO program by using the OS menu.

→ To do so, open the application by selecting Start → Programs → written on "impress, calc & Draw"

→ Alternatively, you may just hit the windows key / Search button & simply type "written"; on clicking the icon, we will have a new document opened.

2. via quickstarter

We can use this method to open a fresh document.

For the purpose we have to enable this feature on time by

Tools menu → options → open office → Memory → open office quickstarter.

3. via Start center

open start center by clicking on the openoffice icon (at on desktop). Now we can open a new document with the start center option "text document".

4. via File Menu

If a document is opened & we want another to open, then the option of the File menu → New → Text document.

Opening a Document

1. via Start center

open start center by clicking on the openoffice icon.

→ click on the open... icon

→ We can open from a list of recent documents

→ It can also open from the option File

(ctrl+o)

Saving a Document

- A newly created document can be saved in many ways

→ Select File → Save
→ Select File → Save as
→ Short cut key ctrl+s

Closing a Document

→ Select File → close
→ cross icon at right most of menu bar.

Printing a Document

1. Quick Printing
   This option can be utilized to quickly send a document to your default printer.

2. Controlled Printing
   It is a customized printing an option. We can set parameters before printing.

→ To execute this command, Select File → print or Keyboard Shortcut ctrl+p

Selection, cutting & Pasting in a Document

Selection, cut & paste operation in the Ado written application is same as in other applications of a computer system.

→ We can use mouse, keyboard, menu commands to perform the operations.

→ To cut or copy we can use:

a) Keyboard shortcuts: ctrl+x (cut) or ctrl+c (copy)

b) Menu selections: edit → cut or edit → copy

c) contextual menus: Right click text selection & choose cut or copy.

d) icon Sources: cut or copy

Pasting text Places, the cut or copied text in the document.

a) Keyboard shortcut: ctrl+v
b) Menu selection: edit → Paste
c) contextual menu: Right click & choose Paste
d) icon Sources: Paste

Charracters Formatting

We can apply many formats at the character level using the command buttons on the formatting toolbar.

1. Styles and Formatting window
2. Apply Style
3. Font Name
4. Font Size
5. Bold
6. Italic
7. underline
8. Superscript
9. Subscript
10. Increase Font
11. Reduce Font
12. Font colore
13. Highlighting
14. Background colore
15. character Format dialog

Paragraph Formatting

We can apply many formats to paragraph using the buttons on the Formatting toolbar.

1. Styles & Formatting windows
2. Apply style
3. Align left
4. centered
5. Align Right
6. Justified
7. Line spacing : 1
8. " : 1.5
9. " : 2
10. Numbering on/off
11. Bullets on/off
12. Decrease Indent
13. increase Indent
14. Paragraph Format dialog

Finding & Replacing on Text

The written program supports the facility to find a specific text & replace it with other text with its 'Find & Replace' dialog box.

→ The dialog box can be opened via the standard toolbar's binocular icon or ctrl+F

→ The Find & Replace dialog can be utilized for various search tasks as described below:

- → Find & replace words & phrases
- → Use wildcards & regulare expression to fine-tune a search.
- → Find & replace specific Formatting
- → Find & replace paragraph style.

→ The Find & Replace process is performed as

- → Type the text you want to find in the search box.

→ type the new text in the replace with box.

→ you can select various options such as matching the case, matching whole words only or doing a search for similar words.

→ when you have set up your search, click find. To replace text, click replace instead.

Spelling & Grammar checking

The writer provides a spelling & grammar checking facility, accessed via Tools → Spelling or F7 shortcut key

Autospellcheck

It checks each word as it is typed & displays a wavy red line under any misspelled words.

Spelling & Grammar dialog

To perform a separate spelling check on the document, click the Spelling & Grammar button.

Autocorrect

The writer's autocorrect function has a long list of common misspellings & typing errors.

→ which it corrects automatically. For example 'abotu' will be changed to 'about'

Openoffice calc

calc is the spreadsheet component of Apache openoffice. It contains most of the features found in spreadsheet.

→ Spreadsheets allow us to organise, analyse & store data in tabular form.

→ calc is similar to microsoft excel & capable of opening & saving various spreadsheet file formats, ~~each sheet of cells arranged in rows & columns.~~

- calc consists of several individual sheets, each sheet of cells arranged in rows & columns.
- Functions, which can be used to create

Formulae to perform complex calculation & data.

- Database functions to arrange, store & filter data.
- Dynamic charts : a wide range of 2D & 3D charts.
- Macros for recording & executing repetitive tasks.
- Ability to open, edit & save.
- Import & export of spreadsheets in multiple formats, including HTML, CSV, pdf etc

Introduction to spreadsheet, sheets & cells

In calc, we create file that are called spreadsheets consist of several separate sheets.

→ Each sheet containing cells arranged in rows & columns.

→ A specific cell is identified by its row no. & column letters.

→ In calc, each sheet can have a maximum of 1,048,576 rows & max^m of 1024 columns.

Parts of calc interface

→ The menu bar, title bar, formatting toolbar & standard toolbar have the same functionality

→ A new toolbar i.e. Formula bar.

Formula bar

It consists of various controls which are annotated with dark background colors.

→ The 'name box' holds the address of the currently selected cell.

→ The 'function wizard' is used to overview or insert available inbuilt functions. It also shows the parameter list and syntax of the function.

→ Clicking the 'sum button' inserts a formula into the current cell that totals the no. in the cells.

→ Clicking the Function button inserts an equal (=) sign into the selected cell & the input line.

Individual cells

The main section of the screen display the cells in the form of grid. with each cell being at the intersection of a column & a row.

→ The columns start at -A & go on to the right, and the rows start 1 & go down.

Sheet tabs

-At the bottom of the grid of cells are the sheet tabs.

→ These tabs enable access to each individual sheet, with the visible (active) sheet having a white tab.

→ clicking on another sheet tab displays that sheet & it's tab turns white.

Starting, Opening, Saving & closing a Document

- Starting of CALC document can be via OS menu. via quick starters & via start center.

→ -An already created calc document can be opened via quick starters or via start center.

→ Similarly Saving & closing of a document also follows the -Ooo's standard procedure

Freezing / unFreezing Rows & columns

Freezing locks, several rows at the top of a spreadsheet or several columns on the left of spreadsheet or both.

Freezing rows & a columns

1. click into the cell i.e immediately below the row you want Frozen & immediately to the right of the column you want to be Frozen.
2. choose window → Freeze

Unfreezing

→ to unfreeze rows or columns choose window → Freeze. The checkmark by freeze will be removed.

Creating a chart

Calc supports a variety of charts & graphs to present numeric data efficiently conveniently.

→ Using calc, you can customize charts & graphs to a considerable extent.

Steps

1. Insert data into the CALC which is to be graphically presented.
2. Select the data to be included in chart/ Graph formation.
3. Either press the chart icon on standard toolbar or click click insert → chart
4. It will show a chart wizard with default formation of the chart as per the given data.

→ The chart wizard has 4 main parts:

1. choosing a chart type
2. Data range
3. Data series
4. chart element

Creating Formulas

In CALC the formula ~~to be treated as it it were text~~. in two ways, either directly into the cell itself or at the input line

→ Either way, we need to start a formula with one of the following symbols: =, + or - .

Formula	Description
=A1 + 10	Displays the content of cell A1 plus 10
=A1 * 16 %	16 % of the content A1
=A1 * A2	multiplication of A1 & A2
=Round(5+/-12)	

=Round(-A1 ; 1)

=Effective (5% ; 12)

=Sum(B8 ; Sum(B10 ; B14))

=Sum(B1 : B65536)

=Average (BloodSugare)

Openoffice Impress

Impress is AOO slideshow (presentation) program.

→ Impress creates presentation in the ODP format, which can be opened by other presentation s/w or can be exported in different element presentation format.

→ We can create slide that contains different elements, including text, bulleted, and no. lists, tables, charts, clip art & wide range of graphic objects.

→ Impress also includes a spelling checker, a thesaurus, prepackaged text style, & attractive background style.

Creating New Presentation

First start the impress in one of the following ways:

→ If no component of AOO is open, from the start center, click on the presentation icon.

→ From the system menu or the AOO quickstarter.

→ From any component of AOO: click the traingle to the right of the new icon on the menu toolbare & select presentation from the drop-down menu. or choose File → New → Presentation from the menu bar.

→ When you start Impress for the first time the presentation wizard is —

1. under Type, choose one of the options:
   - Empty presentation creates a black presentation.
   - From template uses a template design

already created at the halt. For a new presentation.

The wizard changes to show a list of available templates. Choose template you want.

- open existing presentation continues working on a previously created presentation

2. click next as it appears if you select empty presentation.
3. choose a design under Select a slide design. The slide design section gives you two main choices: Presentation background & Presentation.
4. Select how the presentation will be used under Select an o/p medium.
5. create click Next. Select the desired speed from transition bet^n the different slides
6. click create. A new presentation is created.

Parts of Impress Interface

The main impress window has 3 parts

i) The slides pane.
ii) workspace
iii) Task pane

i) Slides pane

It contains thumbnail pictures of the slides in your presentation.

→ clicking a slide in this pane selects it & places it in workspace.

→ Several additional operations can be performed on one or more slides simultaneously in the slides pane.

- Add new slides to the presentation
- Mark a slide as hidden, delete a slide from the presentation if its no longer needed.
- Rename a slide, duplicate a slide or move it to a different position in the presentation.

Tasks Pane

The tasks pane has several section to u with to use.

→ click on the right-pointing A to the left of the caption.

→ only one section at a time can be selected

1. Masters Pages
   Here we define the page style for youre presentation.

2. Layout
   The pre-packaged layouts are shown here. You can choose the one you want, use it as it is, or modify it to yours requirement.

3. Custom Animation
   A variety of animation for selected elements of a slide are listed.

4. Slide Transition
   We can select transition type, its speed, choose bet^n an automatic or manual transition & choose how long the selected slide will be shown.

Workspace
It has 5 tabs

1. Normal view :
   It is the main view for working with individual slides. use this view to format and design and to add text, graphics, and animation effects.

2. Outline view
   The outline view contains all the slides of the presentation in theire numbered sequence.

3. Notes view
   Use the notes view to add notes to a slide.
   a. click the notes tab in the workspace.
   b. Select the slide to which you want to add notes.
   c. In the text box below the slide, click on the words click to add notes, and begin typing

4. Handout view

The handout view is bore setting up the layout of your slide bore a printed handout.

→ click the handout tab in the workspace then choose layouts in the tasker pane.

→ we can choose to print 1, 2, 3, 4, 6 or 9 slides per page.

5. Slide sorter view

Slide sorter view contains all of the slide thumbnails.

→ use this view to work with a group of slides are with only one slide.

Toolbars

Many toolbars can be used during slide creation; they can be displayed or hidden by clicking view → Toolbars & selecting from the menu.

Status Bar

It located at the bottom of the Impress window.

contains info. that you may find useful when working on a presentation.

Navigator

It can displays all objects contained in a document.

→ It provides another convenient way to move around a document & find items in it.

→ To display the Navigator, click its icon on the standard toolbar, choose View → Navigator on the menu bar or press Ctrl + Shift + F5

Formatting a Presentation

→ A new presentation only contains one empty slide. In this section, we will start adding new slides & preparing them bore the intended contents.

Inserting slides

This can be done in a variety of ways-

- Insert → Slide
- Right-click on the present slide, & select slide → New slide from the pop-up menu.
- click the slide icon in the presentation toolbars.

Selecting a Layout

In the Tasks Pane, select the Layout drawwere to display the available layout. The layout differ in the no. of elements a slide will contain, From a blank slide with 6 content boxes & a title.

→ To select or change the layout, place the slide in the work area & select the desired layout From the layout drawwere.

Modifying the slide elements

Our slide contains elements as per our chosen layout slide. we may remove unneeded elements & add objects, as well as insert text. To add any pictures or objects to the slide, follow these steps:

1. To add pictures From graphics files to places other than the clipart.
   a. insert → Picture → From File.
   b. Browse to the graphic file. To see a preview of the picture, check preview at the bottom of the insert Pictures.
   c. Move the picture to its location.
   d. Resize the picture if necessary.
2. To add text to a slide that contains a text frame, click on click to add an outline in the text Frame & then type your text.
3. To remove any element on the slide i.e not required, click the element to Select it.

Applying an Animation Effect

To choose the animation to be applied when the object is placed on the screen, use an effect From the 'Entrance Page'.

→ Use 'Emphasis Page' to apply a basic effect, such as changing the font colour, or to add Special effect such as blinking text.

→ To choose the effect to be applied when the object is leaving the screen, use the 'Exit Page'.

→ If you want the object to move along a line or curve, Select an animat From the 'Motion paths page'.

Starting an Animation Effect

You have 3 choices for starting an animation effect.

a) on click - The animation does not start until you click the mouse.

b) With Previous - The animation runs at the same time as the previous animation.

c) After Previous - The animation runs as soon as the previous animat ends.

Running the slide show

To run the slide show, do one of the following

- click slide show → slide show on the main menu bar.
- click the slide show button on the presentation toolbar or slide sorter toolbar.
- press F5 or F9
- use the arrow key on the keyboard to go to the next slide or previous one.

Printing a Presentation

Impress provides many option for printing a presentation: with multiple slide on one page, with single slide per page, with notes, as an outline with date & time, with page no., name or more.

→ For more control over printing a presentation, choose File → Print to display the print dialog as shown.

→ The 'General tab' is used to select the printer & its related properties.

- A openoffice impress tab is used to include slide-specific contents (slide name, date & time etc), colors, size of the printing.

UNIT-5

Information Security Best Practices

Introduction to Information Security

Information

When any kind of meaningful data is processed in a meaningful form, it is termed Information.

→ Different kinds of data, face photo, name, address, Aadhaar details, bank details, mobile no., email address, location, biometric details. Some goverment sectore secret data etc are processed in a combined form & it becomes information of particulare person or organization.

→ IT Act 2000 defines info. in a more precise way as "it includes data, text, image, audio, codes, computere programs, s/w, video etc.

Information Security

It is defined as the processes & methodologies to protect the print, electronic

or any other form of confidential, private & sensitive info. or data from unauthorized access, use, misuse, disclosure, destruction, modification or disruption.

→ It is also termed InfoSec in short.

Information Security Goals

There are 3 main goals protected by infoSecurity known as CIA triade

1. Confidentiality :

It indicates that authorized users should be allowed to access data or computer system.

2. Integrity :

In the InfoSec integrity principle explain data should not be modified without authorization.

→ It ensures the authenticity & accuracy of info.

3. Availability

It ensures that info. should be available, whenever required.

→ Authenticity ensures that only legitimate users can have access to the system resources to them. (Username, password, email, biometric etc).

→ Non-repudiation principle ensures that the sender of data is provided with proof of delivery & the recipient is provided with proof of the sender's identity so neither party can deny sending, receiving or accessing the data.

Threats to Information Security

1. Malware

These are s/w created to fulfill malicious intentions. Some malware is as under:

a) Ransomware :

It prevents the users to access their or any certain appl^n or any data by encrypting their data.

→ Hackers demand money from victim to decrypt their file. (Monetary)

→ eg: cryptolocker, conti, Wannacry, etc

b) Trojan

It creates backdoors entry into the target computer.

eg Flame, Banker, Downloader, Zeus, & Beast

c) Worm

It works on the law of exponential growth thus it infects many more computers in a very short period.

→ eg ILOVEYOU, code Red, ExplorerZip, Love Bug, W32.Nimda & W32.stuxnet

d) Spyware

A malware is designed that spy the user's info. with the aim to harm them.

→ eg cookies, on webpages & Keyloggers.

e) Adware

It is designed to create revenue for its developers.

→ It also termed advertising supported s/w.

→ It tracks user's behaviours & sell out that info. to interested 3rd Parties.

f) Keyloggers

It is designed for stealing the data via recording the keystroke.

→ eg computerspy, kidlogger, sypreX

g) Virus

It is a computer program that replicates & attaches itself to another legitimate computer program to infect the computer system.

→ Viruses disrupt the working cpu, personal files, computer system etc

→ eg ILOVEYOU, Slammer, Stuxnet & some Scariest viruses.

h) Swipers

These are programs to wipe out data from the targeted machine.

i) Backdoor

If malicious users gain access to the system, they can install a Program used to create another way

2. Social Engineering Attack

The people can be tricked or psychologically manipulated with help of technology to take some action or divulge confidential info.

a) phishing

The hackers typically sends an email or text to the target, seeking info. that might help with a more significant crime.

→ A hackers might send email that appear to come from a source trusted by victim.

b) vishing

→ It is the voice version of phishing. V stands for voice, but otherwise the scam attempt is the same.

→ The hackers use the phone to trick a victim into handing over valuable info.

c) Smishing

It is the text version of phishing. which is acronym for sms phishing.

d) Baiting

In a such scam a usb drive or other electronic media is preloaded with malware & supplied to users.

e) Quid pro quo scam

It involves an exchange of I give you this, and you give me that.

→ Hackers make the victim believes as a fair exchange, but that's far from the case, as the cheat always comes out on top.

3. Network Threats

a) Sniffers

Sniffers are programs to monitors n/w traffic via tracing n/w packet. These can be used to gathers info. which will be helpful in the attack.

b) Botnet

→ A infected device is termed as the compromised device. When a group of such zombies are undere the control of some malicious user then the users can use this

c) Pharming

It is a process of illegal installation of malwares on a computers or a n/w.

d) Man-in-the-middle attack

It happens due to insecure comm^n.

In such a cyberattack, an attackers relay or possibly alter the ongoing comm^n bet^n Senders & receivers without their knowledge.

i) IP spoofing

It is creation of IP packets that have a modified source address to either hide the identity of the Sender, impersonate another computers system or both.

ii) Session hijacking

→ A session bet^n the user & the Servers can be hijacked by the hijackers.

Combating information Security Threats

It is the info. Security technologies to protect user info. from fraudulent users.

→ It is considered that "Security is an art, not science". It is a continuous process.

a) Firewall

→ A firewall is a dedicated device, that monitors the traffic passing through it & allow packets to be rejected or approved based on rules.

→ It acts as a gateway that ensures that nothing private & malicious things can go out, is not coming in.

b) Data backup

→ It is the process of creating copies or duplicating the data.

→ Data backup strategy is very common & useful incase of loss, deletion, or corruption of our data.

→ Backup can be taken in 3 ways:

i) Incremental backup.

ii) Differential Backup -

iii) Full backup

c) Virtual Private Network

It is a n/w i.e constructed by using internet to connect to a private network.

→ These system use encryption & other security mechanism to ensure that only authorized users can access the n/w & that the data can not be intercepted.

d) Encryption

Plain data can be converted into a non readable format.

→ Encryption is a technique that disguises plain text to hide the actual data for the sake of achieving security.

e) Antivirus Software

It not only protect & clean users from malware infection but it provide safety from criminal attacks & keep info safe.

→ It provide the following features

- Antivirus features
- Anti-Trojan "
- Antispyware "
- Anti worm "
- Anti phishing "
- Anti Rootkit "
- Scan email
- Scan compressed files
- Automatically detect USB
- Quarantine infected files
- Automatically clean infected file

eg Symantec Norton, Mac-free, Kaspersky, Bitdefender, AVG antivirus, Quick Heal etc

f) Intrusion Detection System (IDS)

IDS alerts the users in case of any fraudulent traffic

g) IPS (Intrusion Protection System)

It not only detect fraudulent traffic but prevent user system from these attack by blocking request or ending user session.

Information Security Best Practices

→ We have to keep ourselves aware & updated about Infosec Safety tools & techniques.

→ Technology should be our assistant (on the) not our master, hence we must adhere to some good habits to use technology in an effective way.

→ Ministry of Home Affairs (MHA), Govt. of India has issued Infosec guidelines for the benifit of Govt. officials / citizens.

a) General computer usage

1. All classified work should be strictly carried out only on a standalone computer.
2. Create strong password for login by using combination of letters, no. & special characters.
3. Computerse should be protected from viruses / worms using antivirus s/w.
4. Ensure your system is up-to-date
5. Don't leave the computer unattended with sensitive info. on screen.
6. Always lock your computer before leaving.
7. Use password protected screen saver with timeout period.
8. Be careful of what you plug into your computer.
9. Transfer sensitive data very carefully.
10. Back up your imporet files.
11. Remove unnecessary programs or service.
12. Do not give remote access, file & print sharing option to other computers.
13. Avoid entering sensitive info on a public computer.
14. Do not use file sharing s/w
15. Remove files on data you no longer needed
16. Ensure to use UPS
17. Do not plug the computer directly into the wall outlet as power surges may damage your computer.
18. Placed the system in a room (i.e dust free & has a good ventilation.
19. Don't eat food or drink near the pc

b) General Internet Browsing

1. -Always be careful when clicking on links on downloading.
2. Do not download any type of file from any sources.
3. Use a web browsers i.e permitted by your org^n.
4. -Always use updated web browsers.
5. Do not store / share any sensitive info. on any device i.e connected to internet
6. The "Save Password" option prompted should not be selected.
7. Make a habit of clearing history.
8. When on tours, avoid using service that requires location info., unless it is necessary for the discharge of official duties.
9. -Avoid clicking pop-ups
10. -Avoid using public computers & public wi-fi.

c) Password Management

1. create a strong password with a min^m length of ideally 10 characters & comprising of a mix of alphabet, no. & characters.
2. -All password should be changed at least once every 3 months.
3. Don't reuse old password
4. Passwords should not be stored in readable form
5. Treat passwords as sensitive info. & do not share it with anyone.
6. -Always use different password for every log-in account you have.
7. -Always decline the use of the 'Remember password" feature.
8. Remember weak password have following
   - contains less than 10 characters.
   - word found in a dictionary
   - common usage words e.g. name, pet name friends, colleagues, movies/ novel etc)

• Birthday & other personal info. Such as phone no. & address.

• words or no. patterns like 12345, aaaa, qwerty, asdfg, name@year etc.

9. Some Suggested ways to construct a strong passwords are as bellows.

• A Secure password not only consists of letters, must also use no., special character & caps.

• one Suggested way to replace letters which with no. & special characters, 'i' will become '!', an "o" become '0'. & 'S' is written as '$' so on.

• Password length matters, the longer the password the harder it is to crack.

• Select 1st letters of each word in a rhyme.

10. Do not reveal Passwords to others.

11.

Removable Information Storage Media:

1. Auto run / Auto play features must be disabled for all removable media.

2. The classified data should be encrypted before copying.

3. The computers should be enabled with "Show hidden files & folders" option. to view hidden files.

4. It is advisable to scan all removable media with anti-virus S/w before use.

5. Removable media like USB's, CDs etc must not be left unattended.

6. Removable media should not be taken out of office unless permitted by the competent authority.

7. All storage media must be stored in an appropriately secure & safe environment

8. The contents of removable media (erase) after the official purpose has been served.
9. -Avoid Baiting
10. Scan all electronic media for Malware before use.

E-mail communication

1. -Avoid downloading email attachments or clicking on suspicious link.
2. classified info to be not communicated via emails.
3. -Avoid accessing official email accounts from public wi-fi connection
4. -Auto Save of password for email account should not be enabled.
5. Logout from mail accounts after your work is done.
6. Users should type the complete URL in the browsers instead of clicking links.
7. Do not open / forward / reply to any suspicious email.
8. Be cautious on tiny or shortened URL.
9. Do not open attachments having extension such as EXE, dll, vbs, chs, pif, scr etc
10. Enable multifactore authentication before login into your email client.
11. Email IDs should have a strong password
12. once in every 30 days, email password should be changed.
13. Do not keep mails in inbox, Sent box, draft etc, which are no longer required
14. Make habit of cleaning history from browsers after each logout session.

Home Wifi Network

1. Turn on WPA2 or higher encryption features.
2. change the default n/w device name
3. change the n/w device default password.
4. consider using MAC.
5. Turn off your wireless router when not needed.

6. Disable remote management features.
7. Info./data on the wifi n/w should always be in encrypted form.
8. Do not connect the access point directly
9. Do not auto connect to open wifi n/w
10. Disable web & Telnet services
11. Turn off the n/w during extended period of non-use.

-Avoid Social Engineering -Attacks

1. Be careful to unsolicited phone calls, visits or email messages from individuals asking about personal or other govt. information.
2. To protect yourself from phishing do not reveal personal, sensitive or financial info.
3. Don't reveal any sensitive info. over phone calls to protect against vishing.
4. Don't reveal any sensitive info. over sms to protect against smishing.
5. Avoid online conversation to strangers
6. Be cautious of the URL.
7. Hackers wants you to act fast so that later. If the msg conveys a sense of urgency or uses high pressure sales tactics be skeptical.
8. Immediately change any password you might revealed to anyone.
9. Be suspicious of unsolicited phone calls, visits or email messages from individual asking about employee or other internal info.
10. Do not provide personal info. or info. about your organization.
11. Install & maintain anti-virus s/w

Smart Devices (Smart phone, Tabs etc)

1. Smart device must not be used bore sensitive telephonic conversation. The wi-fi & blue-tooth should be kept in turnoff.
2. Internet connection in the smart device will normally be kept in OFF-mode

3. No free app should be loaded in the smart device

4. During repaire, don't leave the device unattended to protect it from malware installation

5. Relevent anti-virus sfw should be installed

6. Free wifi should not be used at public places.

7. A compromised smart device should not be connected to a computere even to charge.

8. Turn off the appl^n which are not needed.

9. When a device is idle, it should get locked & require a password ppin or pattern.

10. Don't jail-break your device

11. Watch for unauthenized topup / data

12. check the memory frequently if any unusal data is stored.

13. Think before you click or download.

14. Understand the term of use.

checklist for Secure Android device

1. Implementing basic Security

2. SIM PIN

3. Encryption

4. Passwords

5. Multiple user accounts

6. Device Administration

7. Mobile Security Suite

8. Device Backup

9. Mobiledevice Management

10. Application Permission

11. Application Locks

12. Transaction Password

13. Rooting device

14. Digital Wellbeing & parental control

15. Note the IMEI code

16. Don't make your mobile phone a source of your personal data.

Social Networking

1. Do not store any info. you want to protect.
2. Always use high security setting on social networking sites.
3. Use anti-virus & firewall software.
4. change your password periodically.
5. Do not post anything that might embrace you latter.
6. Do not automatically download or respond to content on a website.
7. only install applications on sites that come from trusted sites.
8. Avoid accessing your personal accounts from public computers or through public wi-fi spots.
9. Disable Gps encoding
10. Beware of unsolicited contacts from individuals in person
11. Monitor your bank statements, balances & credit reports.
12. Do not share username, password, credit cards, bank info, Salaries etc.
13. Do not provide info. about yourself
14. Be thoughtful & limit the personal info
15. Do not click advertisement.

Registering an Account

1. Use a strong password
2. Never provide a work associated email to social nws.
3. Do not use your real name
4. provide only info. that is necessary.

Instant Messaging (IM)

1. careful when creating a screen name.
2. Never provide sensitive personal information
3. created barrier against unwanted IM.
4. only communicate with people who are on your contact lists.
5. Never open pictures, download file or click link in message from people you don't know.
6. Do not send personal or private IM at work.

Online Transaction / ATM

1. Before you buy, check out the reputation of store & seller.
2. Be aware of what details legitimate site ask for before entering into a transaction
3. Be wary of unsolicited mail.
4. Learn to distinguish bogus email that claims to be from banks, auction site & other financial institution
5. Review financial & credit card statement for unknown expenses.
6. Cancel unused debit/ credit cards.
7. Check your credit card statements & immediately report unauthorized purchase
8. Never write down PINs & passwords memorize them.
9. Always use phishing filter in your browser.
10. Delete all cookies & history
11. Be cautious while providing bank details online
12. Always use virtual keyword while ... online banking.
13. Register your mobile no. & email with banking transactions for timely sms & email alerts.
14. While you receive money, you will never ask to provide credentials.
15. Be cautious while scanning QR code

Automated Tellers Machine (ATM)

1. Always protect your PIN, Don't give the no. to anyone.
2. Cover the keypad while you are entering the PIN.
3. Do not operate ATM in lonely places / unguarded ATMs
4. Be wary of anything about the ATM that looks out of the ordinary.
5. Look for a "no tampering" sign.
6. Regularly check bank accounts to make sure that no unusual or unauthorized

transactions.

public computers

1. If you store or download any personal info on a Desktop in a cybercafe make sure you delete all the documents.
2. Always check browser's security aspects.
3. Beaware of keyloggers
4. Be aware of sharing personal info. should be deleted.
5. Ensure that cybercafe has up to date anti virus & Anti spam s/w.
6. Do not leave computers unattended with sensitive information
7. Do not enter sensitive info. in to a public computers
8. Always make sure to log out properly when you leave cybercafe.