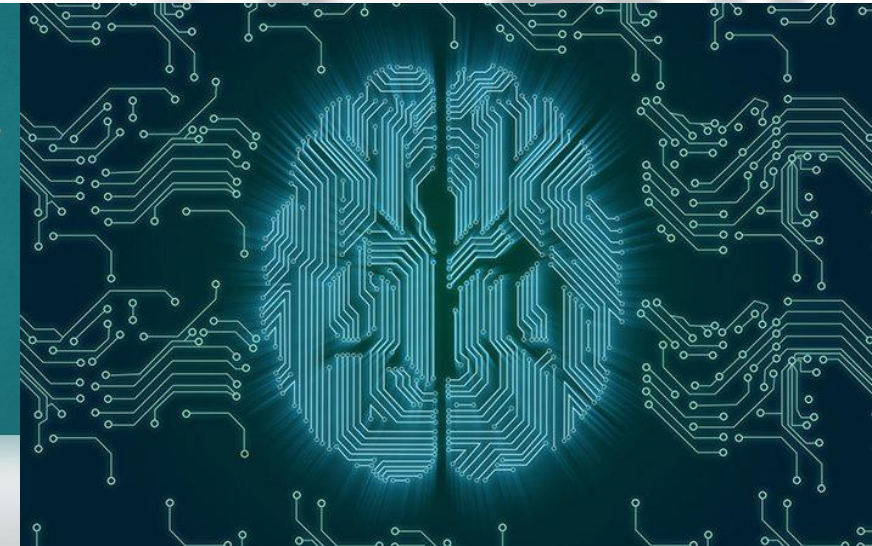


COMPUTER KNOWLEDGE

Special compilation for EPFO Exam



Course By – Dikshant Sharma

EPFO SUPER 100 Batch

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QUICK RECAP

- I. **LECTURE 1** – Brief History, Generations, Definition of Computers, Types of Computers, Components
- II. **LECTURE 2** – Hardware (Memory), Software (Computer Languages, System software, Application Software)
- III. **LECTURE 3** – Data Communication & Types (Simplex, Half Duplex, Full Duplex), Channels, Network, Types of Network, Topologies etc.

LECTURE 4 - Scope

I. What is INTERNET?

- i. TCP/IP & it's role in working of INTERNET
- ii. Who Governs INTERNET?
- iii. HARDWARE / SOFTWARE Requirements for INTERNET
- iv. DOMAIN NAME
- v. Web Browser

II. E-Mail – Definition & Structure

III. E-Commerce / E-Payments (BHIM / UPI)

IV. Hacking / Virus – Definition & Types (Malware, Adware, Spyware Etc.)

V. Important MCQs

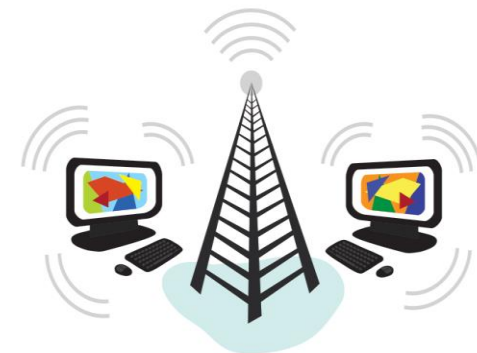
What is **INTERNET**?

- **INTERNET** is a global system of interconnected computer networks that use the standard Internet Protocol suite (TCP/IP) to serve millions of users worldwide. It is probably the largest LAN in the world
- The Department of Defence of USA created ARPANET in response to SOVIET UNIONS launching Sputnik in 1957

TCP/IP – Transmission Control Protocol & Internet Protocol

What is the role of TCP/IP?

- TCP divides the data into data packets for the purpose of sending and receiving data. The rules for reassembling data and damage-free delivery are also specified.
- IP's role is to put destination on such packet.
- IP Address – XXX.XXX.XXX.XXX – 8 Bits of information in each OCTET
- Total 32 bits of information in an IP Address



Who **GOVERNS** the Internet?

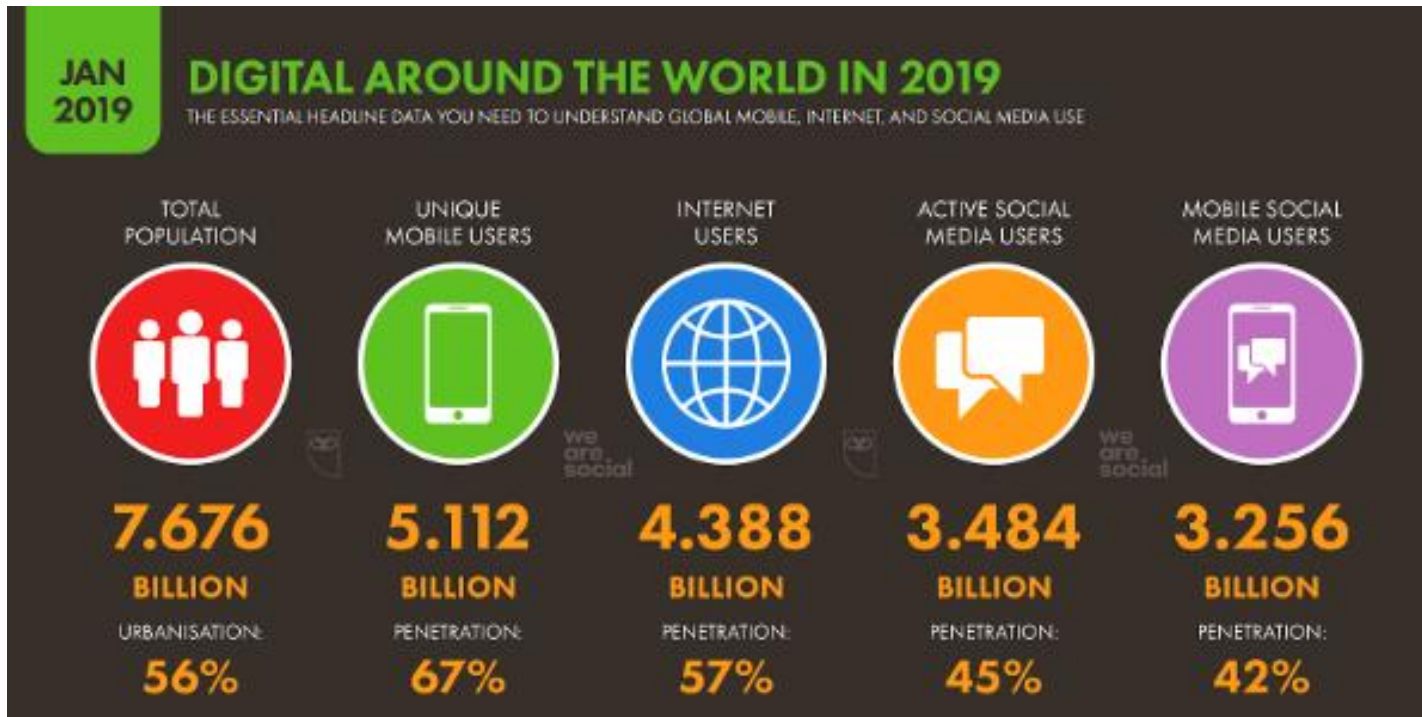
Internet has **NO** Chief Operating Officer & it is **governed by a number of authorities**

VOLUNTARY AUTHORITIES

- ❖ ISOC (Internet Society) – Objective to promote global exchange of information
- ❖ IAB (Internet Architecture Board) – Sets standard and provides internet addresses
- ❖ IETF (Internet Engineering Task Force) – Discusses the technical and operational problems
- ❖ ICANN (Internet Corporation for Assigned Names and Numbers)



How much INTERNET do we use?



HARDWARE for INTERNET

1. **MODEM** – To convert **analog to digital** and **digital to analog**.
2. **HUB** – Place of **convergence** where data arrives & is **forwarded**
3. **BRIDGE** – It is a network that **connects two or more networks**
4. **ROUTER** – Router determines the **next network point to which data packet should be forwarded**. Available at low prices these days and enable connection to more devices
5. **GATEWAY** – **Entrance to another network**



Public
Wi-Fi



Wireless
Bridge



Unmanaged
Switch



Router



Client 1



Client 2



Server

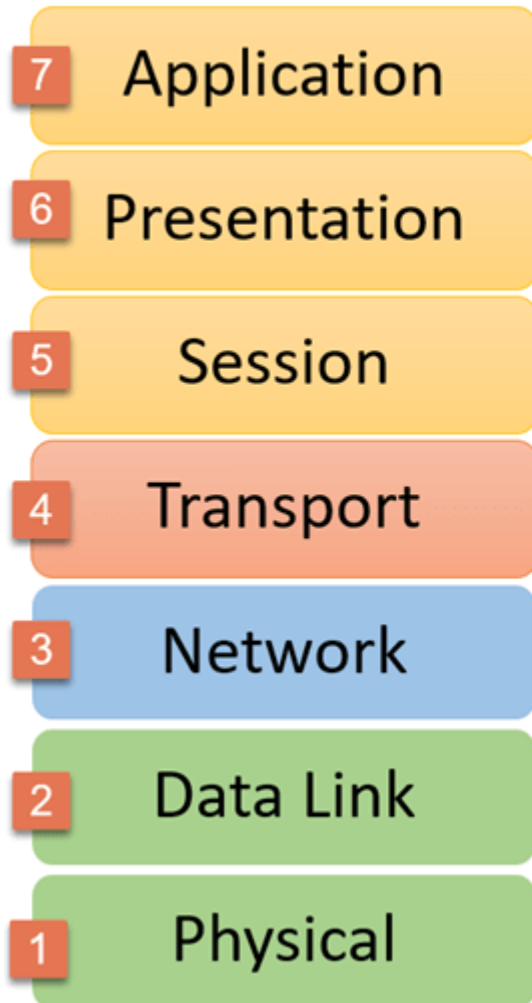
SOFTWARE for INTERNET

1. **HTTP – Hypertext Transfer Protocol**
 - Defines the **format for communication** between **web browsers and web servers**
2. **IMAP – Internet Message Access Protocol**
 - Defines **format for communication** between **E-mail servers and clients**
3. **SSL – Secure Sockets Layer**
 - Developed by NETSCAPE for transmitting **private documents**
4. **TCP/IP – Transfer Control Protocol / Internet Protocol**
 - Main protocol used in the INTERNET – It **manages all the information that moves across the internet**
5. **FTP – File Transfer Protocol**
 - Standards that establish the format in which **files can be transmitted** from one computer to another.
6. **TFTP – Trivial File Transfer Protocol**
7. **SMTP – Simple Mail Transfer Protocol**
8. **HTML – Hypertext Markup Language**
9. **SGML – Standard General Markup Language**
10. **URL – Uniform Resource Locator**

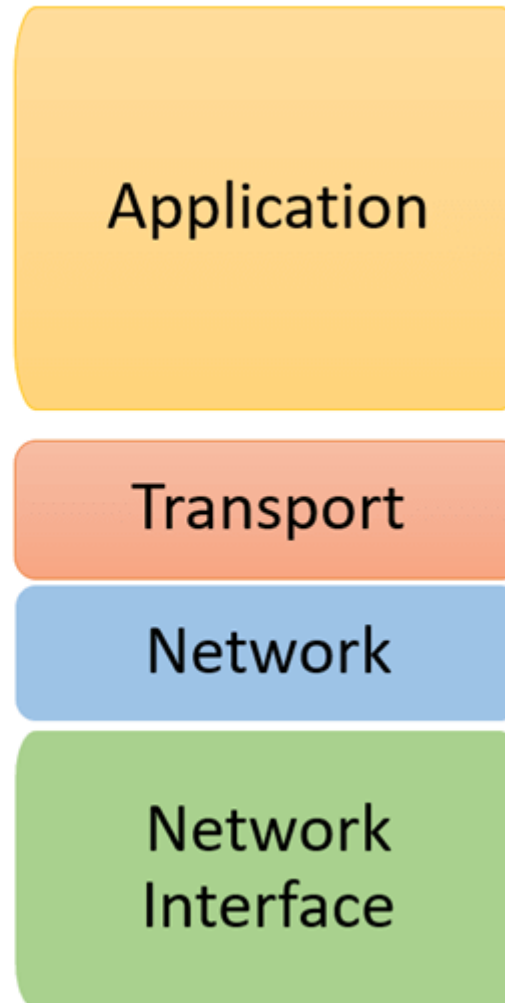


Network Models – OSI & TCP/IP

OSI Reference Model



TCP/IP Conceptual Layers



The concept of network layers is a framework that **helps to understand complex network interactions**.

There are two models that are widely referenced today:

1. **OSI - Open Systems Interconnection**
2. **TCP/IP**

The concepts are similar, but the layers themselves differ between the two models.

WEBSITE



- A **website** is a collection of **web pages** and related content that is identified by a common **domain name**
- Websites are the **most important element** of the internet.
- The central page of a website is called a **home page**.
- Home Page - is usually the first page you see when you call a website up and can also be called a 'start page' or 'index page'. From here onwards, the user delves into the site's subpages.

Types of Website:

1. **Static** – Having fixed and display the same content for every user, usually written exclusively in HTML.
2. **Dynamic** – They can display different content and provide user interaction, by making use of advanced programming and databases in addition to HTML.



DOMAIN NAME

- A **domain** name is your website name.
- A **domain** name is the address where Internet users can access your website.
- A **domain** name is used for finding and identifying computers on the Internet.

Categories :

1. **.com** – Commercial Institutions or organization
2. **.edu** – Educational Institutions
3. **.gov** – Government sites
4. **.mil** – Military Sites
5. **.net** – Gateways and administrative hosts
6. **.org** – Private Organizations

WHAT IS A DOMAIN NAME?

———— The Address of your Website ————

https://www.webhostinginsights.com

prefix

Sub-domain

name

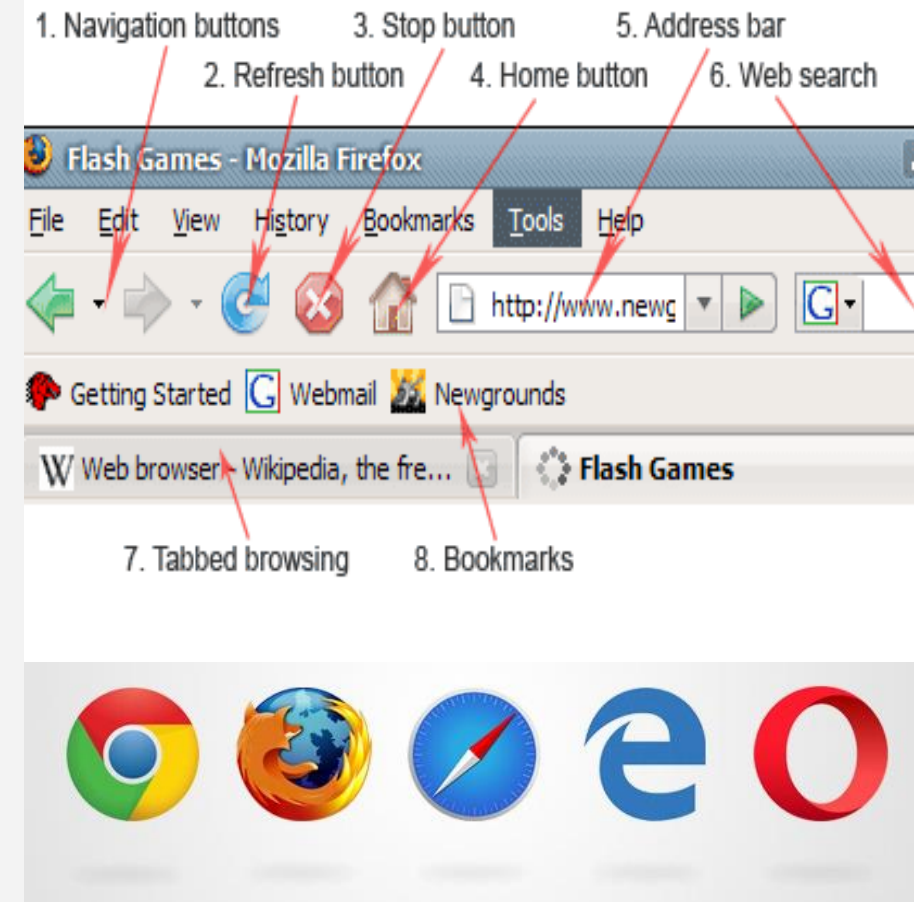
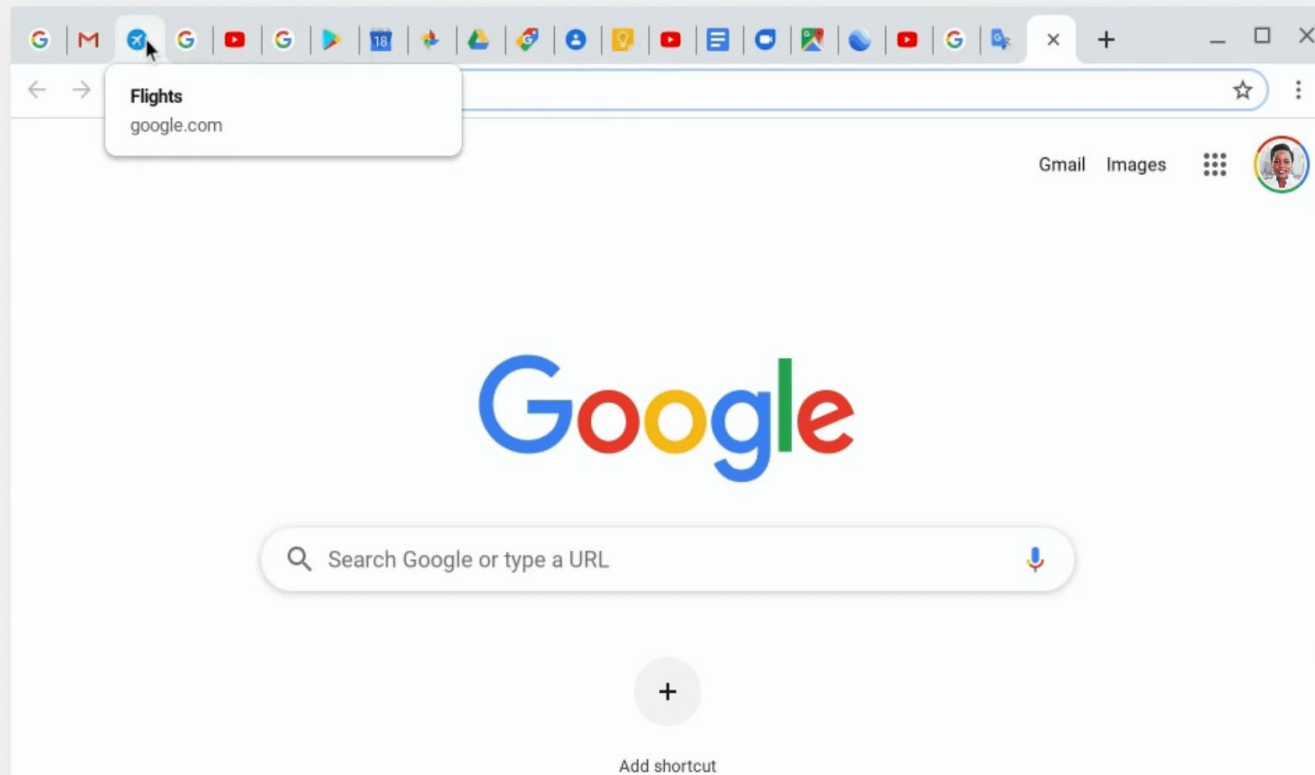
extension

domain name

WEB BROWSER



A **web browser** is a software application for accessing information on the World Wide Web.



E-MAIL

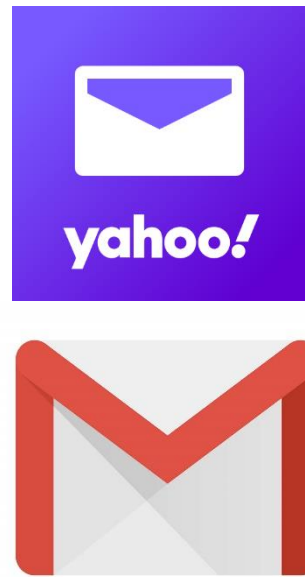


An email address is a unique address, which identifies a location to send and receive email. It contains username, followed by an “@” symbol and then domain name

EMAIL ID - **jsmith@example.com**

Structure of EMAIL :-

- 1) **From** – Contains Email ID and name of the sender optionally
- 2) **To** – To another email ID and optionally name of the receiver
- 3) **Subject** – Brief summary of the contents of the message
- 4) **Date** – Local time when the message was sent
- 5) **CC** – Carbon Copy
- 6) **BCC** – Blind Carbon Copy



E-COMMERCE / E-PAYMENTS



Ecommerce, also known as electronic commerce or internet commerce, refers to the buying and selling of goods or services using the internet, and the transfer of money and data to execute these transactions.

Ecommerce is often used to refer to the sale of physical products online, but it can also describe any kind of commercial transaction that is facilitated through the internet.

E- PAYMENTS

BHIM – Bharat Interface for Money –

Initiative to enable fast, secure, reliable cashless payments through your mobile phone

UPI – Unified Payments Interface – Instant real-time payment system developed by National Payments Corporation of India facilitating inter-bank transactions

Top 7 E-commerce Websites in India





COMPUTER HACKING / VIRUS

HACKING – Is an attempt to exploit a computer system or a private network inside a computer. It is the unauthorized access to control over computer network security systems for some illicit purposes.

Viruses, Trojan Horse, Password Cracking are all types of Computer Hacking!

VIRUS - A virus is a parasitic program that infects another legitimate program, which is sometimes called the host. To infect the host program, the virus modifies the host so that it contains a copy of the virus.

“ILOVEYOU” Virus – The most dangerous virus world has seen

- Managed to wreck PCs all across the world.
- Infecting almost 10% of the world's PCs connected to the Internet, the virus caused a total damage of around \$10 billion.



COMPUTER HACKING / VIRUS



Types of virus –

1. **Malware** - is short for **malicious software**. Malware is designed to cause damage to a stand alone computer or a networked pc. So wherever a malware term is used it means a program which is designed to damage your computer.
2. **Adware** - Generically adware is a software application in which **advertising banners** are displayed while any program is running. Adware can **automatically get downloaded** to your system while browsing any website and can be viewed through pop-up windows or through a bar that appears on a computer screen automatically. Adware's are used by companies for marketing purpose.
3. **Spyware** - Spyware is a type of program that is installed with or without your permission on your personal computers to collect information about users, their computer or browsing habits tracks each and everything that you do without your knowledge and send it to remote user. It also can download other malicious programs from internet and install it on the computer.
4. **Cluster Virus** - If any program is run from the infected disk, the program causes the virus also to run . This technique creates the illusion that the virus has infected every program on the disk.
5. **Worms** - A worm is a program whose purpose is to duplicate itself.
6. **Trojan Horses** - A Trojan horse, or Trojan, is a type of malicious code or software that looks legitimate but can take control of your computer. A Trojan is designed to damage, disrupt, steal, or in general inflict some other harmful action on your data or network.

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V. Important MCQs



PREVIOUS YEAR QUESTIONS

1. The process of transferring files from the Internet to your computer is called

- A. Uploading
- B. Forwarding
- C. FTP
- D. Downloading

2. Which one of these is not a Search Engine?

- A. Bing
- B. Google
- C. Yahoo
- D. Windows

3. A computer on internet are identified by :

- A. E-Mail Address
- B. Street Address
- C. IP Address
- D. None of the Above



PREVIOUS YEAR QUESTIONS

4. Which of the following is a type of program that either pretends to have, or is described as having, a set of useful or desirable features but actually contains damaging code.

- A. Trojans
- B. Viruses
- C. Worm
- D. Adware

5. Which of the following is the type of software that has self-replicating software that causes damage to files and system?

- A. Viruses
- B. Trojan Horse
- C. Bots
- D. Worms

6. What is the software called which when get downloaded on computer scans your hard drive for personal information and your internet browsing habits?

- A. Key-Logger
- B. Malware
- C. Antiware
- D. Spyware



PREVIOUS YEAR QUESTIONS

7. Which of the following is a correct format of an EMAIL Address?

- A. name@website@info
- B. name@website.info
- C. www.nameofwebsite.com
- D. name.website.com

8. Which of the following TCP/IP protocol is used for transferring electronic mail messages from one machine to another

- A. FTP
- B. SNMP
- C. SMTP
- D. RPC

9. SMTP Stands for _____

- A. Simple Mail Transfer Protocol
- B. Standard Mail Transfer Protocol
- C. Simple Mail Transfer Procedure
- D. None of these