

Introduction to Computing (SE-101)

Ali Ameer Gondal

Assistant Professor

Software Engineering Department

University Of Engineering & Technology

Taxila, Pakistan

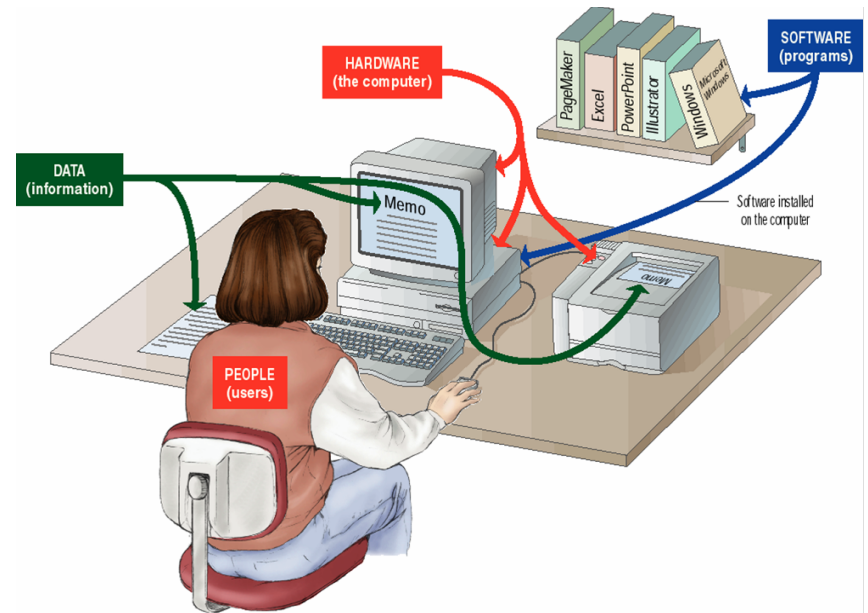
ali.ameer@uettaxila.edu.pk

Introducing Computer Systems (Contd.)

Lecture # 2
30th Nov. 2011

Computers Consist of Four Parts

- Hardware
- Software
- Users
- Data

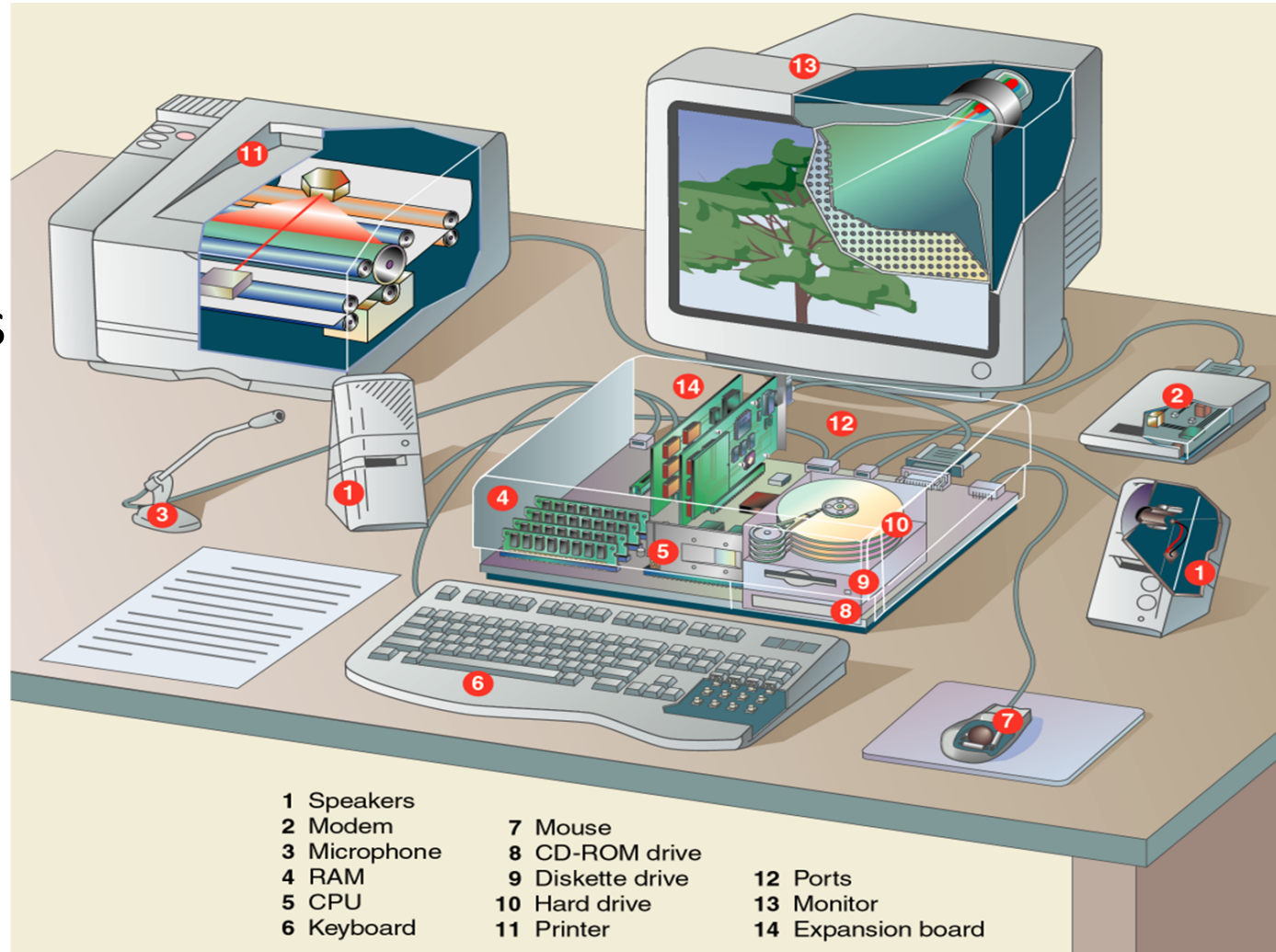


Hardware

- Mechanical devices that make up the computer

Examples of Hardware

- Processor
- Memory
- Input and output devices
- Storage



Processing

- The procedure that transforms raw data into useful information is called processing
- The processor and memory perform this transformation

Processor

- The computer's brain, which organizes and carries out instructions from either the user or the software

Motherboard

- Rigid rectangular card containing the circuitry that connects the processor to the other hardware

Circuit board

- Motherboard is an example of a circuit board
- Attached to the motherboard are many smaller circuit boards that house many internal devices

Central Processing Unit (CPU)

- Refers to a computer's processor

Memory

- When you launch a program, it is loaded into and run from memory

Random Access Memory (RAM)

- Determines a computer's speed and power

Memory Measurements

- Kilobyte (KB)
- Megabyte (MB)
- Gigabyte (GB)
- Terabyte (TB)

Input Devices

- Accept data and instructions from the user or from another computer system

Most Common Input Devices

- Keyboard
- Mouse

Output Devices

- Return processed data to the user or to another computer system

Most Common Output Devices

- Monitor
- Printer

Storage

- Holds data permanently

Storage Terms

- Magnetic disk
- Read/write heads
- Disk drive
- Hard disk or hard drive
- Diskette drive
- Diskettes or floppy disks

Storage Terms *Continued*

- CD-ROM drive
- Compact disks (CDs)
- Compact Disk-Read-Only Memory (CD-ROM)
- CD-Recordable (CD-R)
- CD-ReWritable (CD-RW)
- Digital Video Disk (DVD)
- Blu-ray Disk

Software

- A set of electronic instructions consisting of complex codes, or programs, that make the computer perform tasks

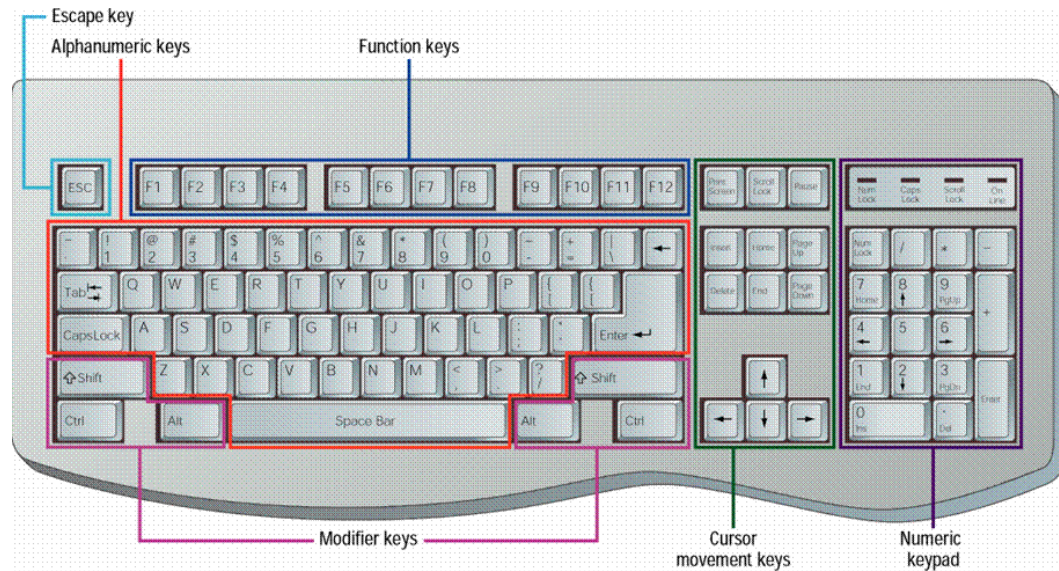
Examples of Software

- System software
- Application software

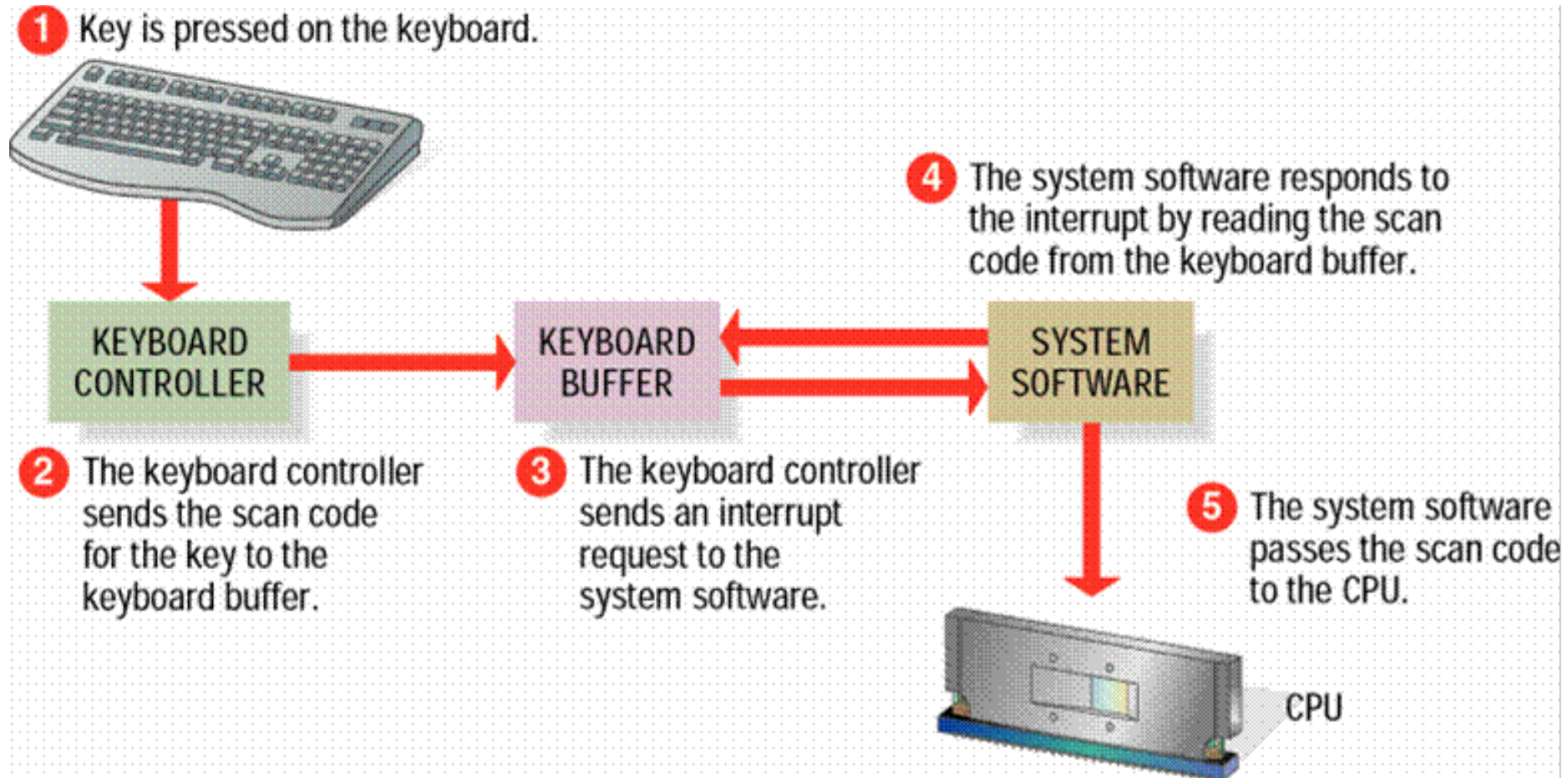
Input devices

Keyboard

- Alphanumeric keys
- Modifier keys
- Numeric keypad
- Function keys
- Cursor-movement keys
- Special-purpose keys



How the Computer Accepts Input from the Keyboard



The Mouse

- An input device that rolls around on a flat surface and controls the pointer

Examples of Mouse Maneuvers

- Pointing
- Clicking
- Double-clicking
- Dragging
- Right-clicking

Mouse Variants

- Trackball
- Trackpad
- Integrated pointing device



Input Devices for the Hand

- Pen, sometimes called a stylus
- Touch screen
- Game controller



Optical Input Devices

- Bar code reader
- Image scanner and optical character recognition (OCR)



Audiovisual Input Devices

- Microphones and Speech Recognition Software
- Video Input
- Digital Cameras

Output devices

- Return processed data to the user or to another computer system
- Monitors
- Printers
- Speakers

Two Kinds of Monitors

- Cathode ray tube (CRT)
- Flat-panel display

Monitor Categories Based on Color Display

- **Monochrome:** One color on a black background
- **Grayscale:** Shades of gray on a white or off-white background
- **Color:** From 16 to 16 million unique colors

Pixel

- Pixel, short for picture element, is the smallest number of phosphor dots that the electron gun inside the monitor can focus on

Liquid Crystal Display (LCD) Monitor

- Most common flat-panel monitor

Viewing Angle

- The angle from which the display's image can be viewed clearly

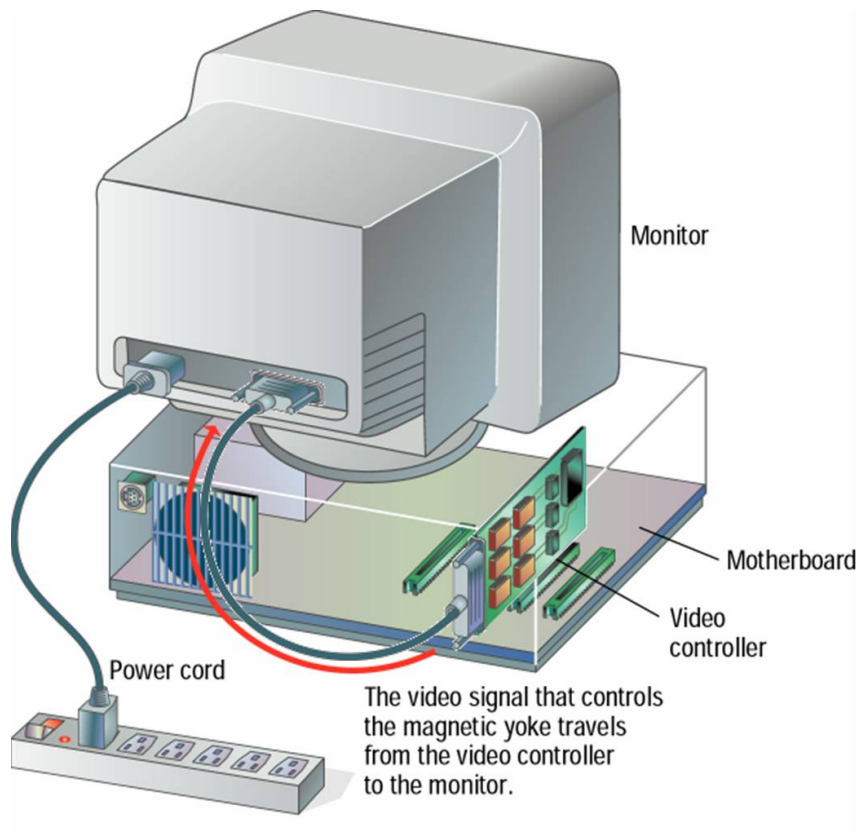
Two Categories of Liquid Crystal Displays

- Passive matrix LCD
- Active matrix LCD

Considerations When Monitor Shopping

- Size
- Resolution
- Refresh rate
- Dot pitch

Video Controller



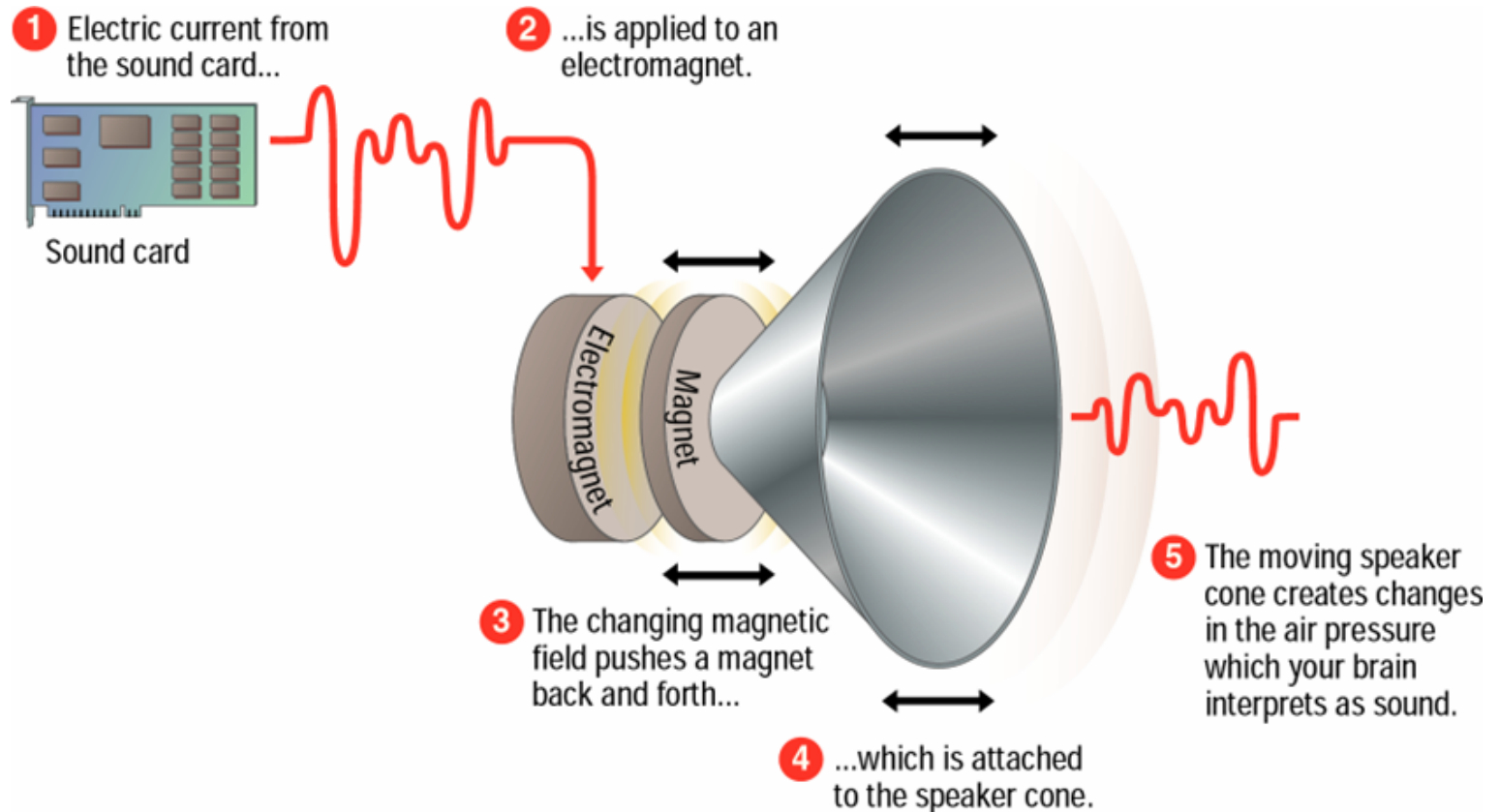
- Intermediary device between the CPU and the monitor
- Controls how things look on-screen

Digital Light Projector

- Connects to a computer and is used to project images on a large screen

Sound Card

- Translates digital sounds into the electric current that is sent to the speakers



Introduction to the Internet

Seeds of the Internet planted in 1969

- Advanced Research Projects Agency (ARPA) of the U.S. Department of Defense created an experimental network – ARPANET – as a test-bed for emerging networking technologies
- ARPANET originally connected 4 universities & enabled scientists to share info & resources across long distances
- ARPANET continued to expand throughout the 70's and 80's

Internet

- The Internet is a global network of networks.
- People and organizations connect to the Internet so they can access its massive store of shared information.
- The Internet is an inherently participative medium. Anybody can publish information or create new services.
- The Internet is a cooperative endeavor -- no organization is in charge of the net.

Reference works found on the Internet

- Encyclopedias
- Dictionaries
- Thesauri
- Specialty references

Tools & Services Available on the Internet

- Electronic mail (Email)
- Instant messaging
- Remote login
- File transfer
- WWW
- Forums, multimedia delivery, etc.

World Wide Web (“the Web”)

- Enables users to view specially formatted documents, called Web pages, on the Internet
- The Web was invented in 1991 by Tim Berners-Lee, while consulting at CERN (European Organization for Nuclear Research) in Switzerland.

Web pages

- Contain text, graphics, and multimedia objects such as video, audio, or animations
- Display navigational tools

Web browser

- Software program that enables you to access the Web
- In 1993-1994 - Web browsers Mosaic & Netscape Navigator were introduced
- Their GUI makes WWW & Internet more appealing to the general public

Popular Web browsers

- Internet Explorer
- Firefox
- Safari
- Chrome

Navigating the Web

- Moving from one Web page to another or from one Web site to another

Hypertext Markup Language (HTML)

Web page format

Uniform resource locator, or URL
(pronounced as spelled: U-R-L)

Web page address

Ways to Access a URL

- Type the URL in a browser's address box
- Click a hyperlink that is linked to that URL
- Choose a URL stored in your browser's Favorites or Bookmarks list

Navigation tools

Hyperlinked pictures or graphical buttons

Bookmark

Frequently visited Web page saved in a browser

Most-used Web-based search tools

- Directories
- Search Engines

Keyword search

Searching for information by typing one or more words

Boolean operators

Special words used in search engines to modify search criteria.

Three basic Boolean operators

AND, OR, and NOT

Advanced tools

Provided by search engines to overcome the problems of duplicate and irrelevant results

Metasearch engine

Uses multiple search engines simultaneously to look up sites that match your keywords, phrase, or question

Site-specific search tools

Let you look for information on the current Web site

Questions?

If you have any query please feel free to ask

Phone: +92-51-9047-590

Email: ali.ameer@uettaxila.edu.pk

University Of Engineering & Technology, Taxila Pakistan