University of Bejaia

Faculty of Letters and Languages

Department of English

ONLINE COURSE

SEMESTER 2 - 2022/2023

Module: ICT (Information .Communication & Technology)

Lesson 2: Understanding the basic concepts of ICT

Level: Licence 2.

Group : 2+4.

Teacher: Idrici

E-mail: idricibelkacem16@gmail.com

Today's society is shaped by sudden growth and development of the information and communication technology resulting with its great dependency on the knowledge and competence of individuals from the ICT area.

ICT is an extensional term for information technology (IT) that stresses the role of unified communications and the integration of telecommunications (telephone lines and wireless signals) and computers, as well as necessary enterprise software, middleware, storage, and audio visual systems, that enable users to access, store, transmit, and manipulate information.

Let us explore various resources to have a clear understanding of this lesson. Let us unpack some concepts and terms related to technology for teaching and learning.

Here are terms and concepts that you need to understand

1- Computer

A **computer** is an electronic device that manipulates information, or data. It has the ability to store, retrieve, and process data. You may already know that you can use a computer to type documents, send email, play games, and browse the web. You can also use it to edit or create spread sheets, presentations, and even videos.

1-1- Evolution of computers / generation of computers

There are five generations of computer:

* **First generation** – 1946 – 1958
* **Second generation** – 1959 - 1964
* **Third generation** – 1965 – 1970
* **Fourth generation** – 1971 - today
* **Fifth generation** – Today to future

1-2- Parts of a Computer.

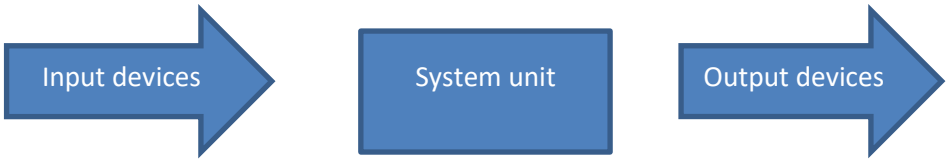
Units	Function
Input Units 	Any device that can feed information into the computer. Ex. Keyboard, Mouse, touch screen monitor, Microphone, Scanner, Web Cam.
Output Units 	Decode information Ex**.** Monitor, Printer, Speakers, Projector
Central Processing Unit (CPU) 	The "brain" of a computer, which reads programs and changes each program's instructions into actions.
Memory or Storage Units :  	**RAM-(Random Access Memory)** Remembers what you tell the computer to do while the computer is on. **ROM- (Read Only Memory)** Holds program instructions after power off Instruction set for startup
Integrated Circuit (IC) 	Is a tiny piece of silicon that contains thousands of electrical circuits . (A circuit is a path over which electric current or pulses flow.)

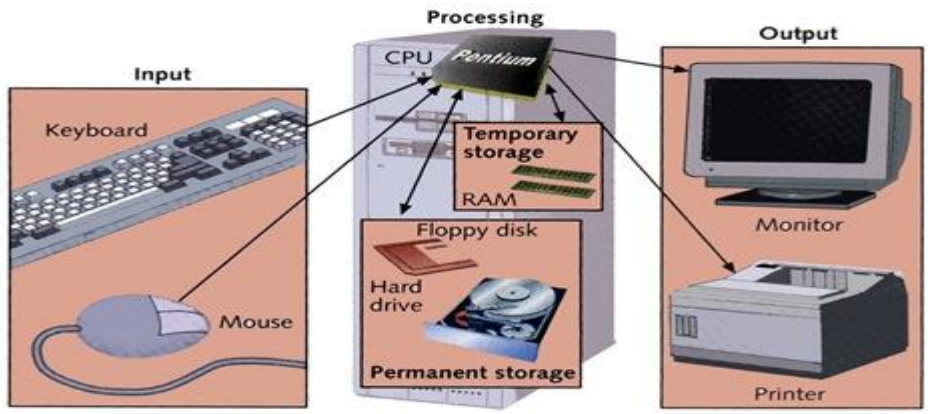
2- **Hardware**

The concept of hardware includes computer components, the **physical and tangible** parts of the computer, i.e., electrical, electronic and mechanical parts which comprise a computer.

2-1- Hardware basics

Computer working principle: data are entered into a computer via **input devices**, then are processed and stored in a **system unit**, and are finally displayed by the **output device**





Computer activity consists of input, processing, storage, and output

2-2- Basic types of storage devices

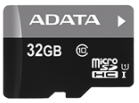
-ROM (Read Only Memory) is a type of permanent, internal memory that is used solely for reading. BIOS (Basic Input/Output System), a program which is located in a separate ROM on the motherboard, and defines, as the name suggests, basic input/output system, is a good example.

-RAM (Random Access Memory) is a working memory in which analyzed data and programs are stored, while computer runs. It allows reading and writing data, and is deleted/cleared when the computer shuts down.

-CD (Compact Disc) is an optical disc used for data storage. The standard capacity of a CD is 700MB. CD-R is used for reading and writing data one time-only, while CD-RW for reading and writing data multiple times.

- DVD (Digital Versatile Disc) is an optical disc which is, due to the larger capacity (about 4.7 GB), mostly used for video storage.

-Memory card is a type of flash memory used to store data in digital cameras, cell phones, MP3 players etc.



-USB Stick is a data storage device. It features small dimensions, relatively high capacity, reliability and speed. It belongs to the type of flash memory that remembers data, even when not under voltage i.e. they do not need electric power to maintain data integrity

- **Keyboard** is used for data entry and issuing commands. They can also be wired or wireless.

- Scanner is used to load data (image, text, etc.) from the printed material into a computer. The result of scanning is an image, but with special programs, if we scan the text, we can get a text as a result. Software used to recognize text from image is called a text recognition tool.

- Microphone is a device that converts sound into an electrical signal, which can be stored on a computer. It is mainly used for recording sound, communication between players in online games, in combination with a web camera in video conferencing, for converting voice into text on a computer (speech-to-text processing (e.g., textual files or emails), etc.

-Webcam is a camera that stores video signal in a format appropriate for video transfer over the Internet in real time.

- Digital camera, unlike analog, stores photographs in digital format. It can be directly connected to a computer and photographs can be downloaded.

3- Software

Software is, unlike hardware, intangible part of the computer. It consists of a sequence of commands, written according to strict rules. Programs are written by programmers, in various programming languages.

3-1 -Common utility software are:

-Text processing software is used for creating and forming text documents and nowadays, they can contain images, charts and tables. Examples of such programs are **OpenOffice.org Writer (open source software) and Microsoft Word (proprietary software).**

- Spread sheet calculations software is used for performing various calculations and presentation of results in charts. Examples of such programs are **OpenOffice.org Calc Writer (open source software) and Microsoft Excel (proprietary software).**

-Software for presentations is used to create professional presentations that consist of slides with graphical and textual elements. Such a presentation can afterwards be displayed as a "slide show" by using a projector. Examples of such programs are **OpenOffice.org Impress (open source software) and Microsoft PowerPoint (proprietary software).**

- Software for creating and managing database helps to manage a collection of structured data. Examples of such programs are **OpenOffice.org Base (open source software) and Microsoft Access - (proprietary software).**

3-2-Common utility software installed on a computer:

- Antivirus programs : Avira, Sophos, Kaspersky, Antivir etc.

- Internet browser: Mozilla Firefox, Microsoft Internet Explorer, Opera, Safari

-Programs for image editing: Adobe Photoshop, Canvas, CorelDraw, Draw etc

4-Networks

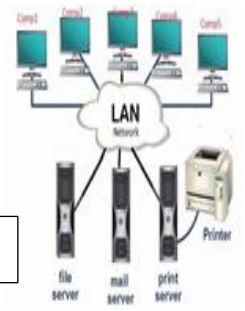
4-1-Computer network is comprised of at least two, connected, by wire or wireless, computers that can exchange data i.e. communicate. There are many reasons for connecting computers into a network, and some of them are:

-Exchange of data between users that have network access,

-Access to shared devices, such as network printers and network disks.

-Enables user communication and socializing.

4-2- Internet is the most famous and most widespread network with nearly 2 billion users and the number of users is still growing.



LAN

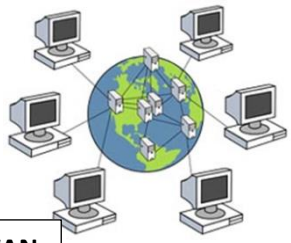
4-3-Types of networks

Types of networks according to their size:

- **LAN (Local Area Network)** - a network that covers a relatively small geographical area- it connects computers within a firm or household by wire,

WLAN

- **WLAN(Wireless Local Area Network)** - a network that covers a relatively small geographical area - it connects computers within a firm or household wirelessly,



WAN

- **WAN (Wide Area Network)**- a network that covers a relatively large geographical area - it connects a greater number of computers and local networks

5- Educational Technology : refers to the use of technology in and learning .Educational technology includes both the non-digital (flip charts, pictures, models, etc.). and digital (electronic tools: hardware, software and connections, etc.).

6- Digital Literacy : is the ability to find, evaluate, utilize, share and create contents using information technologies and internet

7-Digital learning : is any type of learning that is accompanied by technology or by instructional practice that makes effective use of technology.

8-Elearning consists of all forms of learning and/or knowledge transfer that are based on electronic technologies.

9-Email : Electronic mail, or 'email,' is a digital communication method that uses electronic devices to deliver messages.

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10-Google Apps : is a cloud-based teaching tool which is stored in the Google server and is available for students both at home and in school.

11-Web access is the ability of the learner to access the Internet at any point during the lesson in order to take advantage of the array of available education resources.

12-Online digital tools and Apps : use an Internet connection to access the information needed. A common example is Skype. It is a telecommunication application software product that specializes in providing a video chat and video calls between computers, tablets, mobile devices via Internet and to regular telephones.

13- Modem enables computers to communicate via telephone lines. They connect computers to the Internet.

14- Satellite -commonly used in parts of the world where there is no proper infrastructure and there is no other way of accessing the Internet.

15- Virtual community : The term "virtual community" encompasses a group of people who communicate via social networks, forums, IM service, blogs.

16- Social Networks: are free online services that provide users with various forms of presentation and communication. Some of the more popular social networks are: MySpace, Facebook, Twitter, Google+.