



PONY

ICT



By

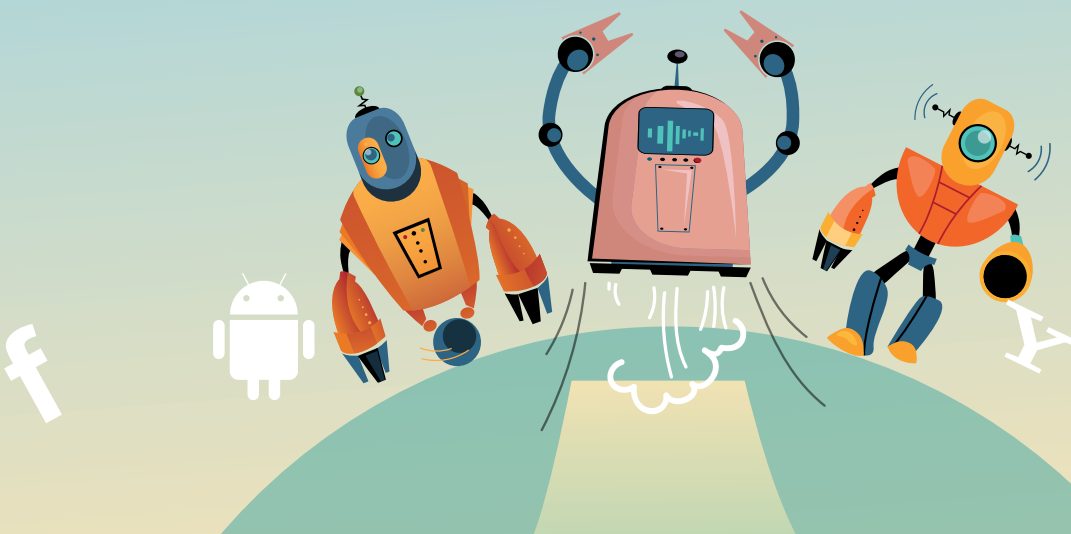
Eng. Osama Youssef



First Term



October Revision



Lesson 2

» **Networks:** They are groups of devices or things that are connected to each other for a common purpose.

» **Types of networks:**

1. **Wired networks:** They use cables that are plugged into ports.
2. **Wireless networks:** They connect devices without wiring using Wi-Fi.

» **Network devices:**

1. MODEM:

- a. Connects a local area network (LAN) to the internet.
- b. Converts (transforms) the signal from the ISP into a digital signal.
- c. Connects users to the internet

2. SWITCHES:

- They send data to a specific device over a network, so it makes connections easier and faster.
- Switches are intelligent devices.



» **Artificial Intelligence (AI):**

- A comprehensive term for computer applications that perform complex tasks that simulate the thinking and performance of the human element.
- AI also works to imitate sounds when provided with the tone of voice of an actual human being.

» **Examples:**

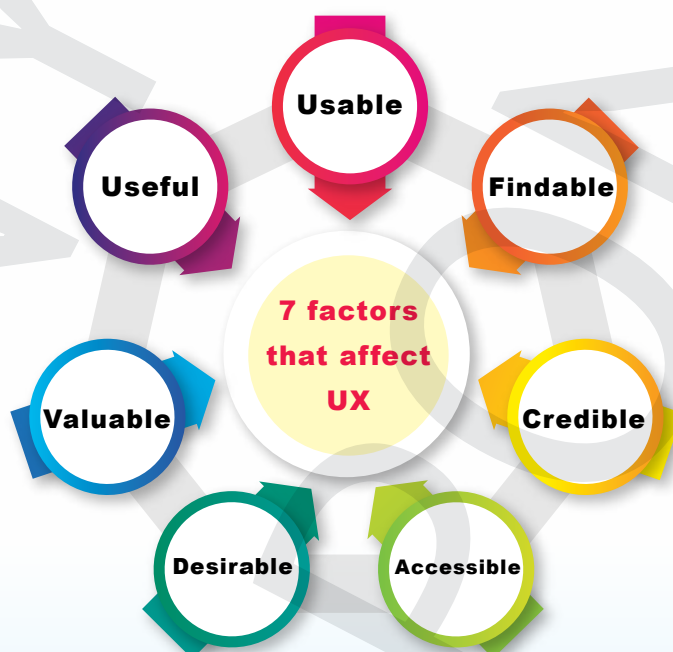
- Writing an article on a topic.
- Inquiring about historical events and their sequence.

Lesson 3

- » **Virtual reality:** It is a virtual 3-D environment that allows users to explore and interact with the surroundings, as if it were reality.
- » To experience VR, users wear a **VR headset** that blocks out the real world and immerse the user in another world.
- » **Examples on VR:**
 1. It can take you to a museum thousands of miles away or to a historical site.
 2. In classrooms, VR allows close study of enlarged insects and atoms.
- » **Augmented reality (AR):** It combines **the real world** with **a virtual world** by adding images using computers.
 - It shows a 3-D model of what the real world looks like.
 - AR helps students become active participants in learning and makes learning more memorable.
- » **Examples on AR:**
 1. In math class, students can project 3-D images like cubes or cylinders onto a flat surface using their smartphones
 2. Visually impaired people can use AR to see their family members up close.
- » **Artificial intelligence (AI):** It is the ability of a computer, to think, learn, and deduce.
 - Computer learns by analyzing the available examples.
- » **Example on AI:**
 - It predicts the word you will write from words you have written previously.
 - AI is used to unlock your phone with **facial recognition**.
 - Disabled individuals can use **virtual assistants** powered by AI to accomplish everyday tasks, such as making phone calls and navigating their computer.

Lesson 4

- » **Cutting-edge technology:** Is the latest and most advanced version of a service or product.
 - AI, AR, and VR are Cutting-edge technologies.
- » **Assistive technology** helps people of determination.
- » **Examples of Assistive technology:**
 1. Screen magnification software.
 2. Hearing aids
 3. Programs that turns speech-to-text and text-to-speech.
- » **Smartgloves:** They empower deaf people to translate their signs in real time to spoken or text output.
- » **User experiences:** It is how to use the product, interact with it, and evaluate their experiences.
 - It can be positive or negative.
- » **User experience** is interlinked with the development of products and services.
- » The goal of cutting-edge assistive technology is to improve someone's independence and to be included in society.



Lesson 5

- » Copy, paste, and cut are some of the most commonly used word processing commands
- » **Search engines** help people search Internet websites based on the **keywords** and **phrases**.
- » They are **user-friendly**, **very fast**, and often **give many results**.
- » **Databases**: They are **collections of information** which are typically stored in a computer system and can be accessed for **free** through a school.
- » **A database** is a good place to search for information from **journals**, **newspapers**, and **reference books**.
- » **EKB** is an example of a general database, the results will be credible and accurate.
- » **Library catalog**: It is a **database** which includes all the items owned by a library. **such as**, the catalog of the Library of Alexandria.
- » When you search any database:
 - 1 Use a **keyword** search.
 - 2 Review the results.
 - 3 You can limit a search by using fields like author, journal title and dates.

Lesson 7

- » **Operating system (OS)**: It is the software that manages a computer's functions, such as **memory**, **drives**, **printers**, and **other devices**.
- » OS manages **accessible devices**, such as screen readers and magnifiers.
- » OS runs a computer's **software** and **hardware**.
- » OS acts as a **translator**; it translates user communication to computer languages.
- » Most computers come pre-loaded with an operating system.

» Computer operating systems:

| Microsoft Windows | MacOS |
|---|--|
| <ul style="list-style-type: none"> On most computers worldwide. | <ul style="list-style-type: none"> It runs on Apple computers. |

» Mobile operating systems:

| Android | Apple iOS |
|--|--|
| <ul style="list-style-type: none"> Used on open-source software. | <ul style="list-style-type: none"> Used on the iPhone and iPad. Closed-source operating system. |

» **Open-source software:** means a person can change and read the programming code.

» **Closed-source software:** it can't be seen or changed by the public.

» Both Android and iOS perform the same basic functions, such as messaging, web access, video chat and touch function

» Cutting-edge operating systems:

1 The Robot Operating System (ROS): is an **open-source** software for building robot applications.

2 Operating systems powering self-driving cars

» **Programming languages:** Instructions to a computer are given in **codes**.

» Programming languages have evolved from **simple machine language** (binary) to **high-level** human-like languages.

» Programming languages are usually **open-source**.

» HTML is used to create website.

» HTML is easy to learn, to make change and **compatible** with all the major web browsers.