



Computer...

CHAPTER

1

Session

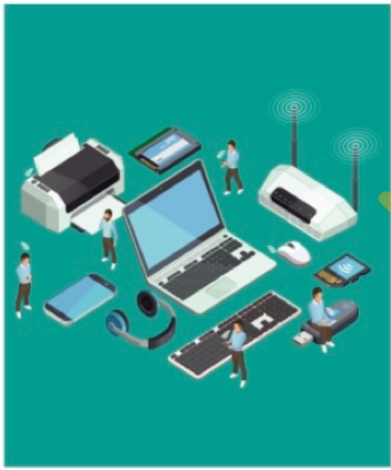
Introduction to Computing



List of Acronyms : كلمات مهمة

Computer	Electronic device جهاز الكتروني
Hardware	Physical Equipment's (ملموسه) معدات مادية
ICT	Information & Communication Technology تقنيات المعلومات والاتصالات
Applications	Different types Software Programs انواع مختلفة من البرامج

Introduction



Throughout history, technology has been the driving force of change. In present time of the 21st century, which is known as a digital era, Information & Communication Technology (ICT) plays a vital role and has been embraced and incorporated into our daily lives. This is the time where Computers are the primary means of communication in the world. Computers are ubiquitously available at office, homes etc. It becomes an easy and useful tool for communication that can provide various kinds of information.

The computing technologies have altered conceptions of time and distance. It has created a wealth of information that is available at the stroke of a key. Moreover, these computing technologies are being widely adopted and used in education sectors, such as universities and schools.

العصر الرقمي

اصبح الكمبيوتر هو طريقة الاتصال الاساسية في العالم

غيرت مفهوم الوقت و المسافة

يستخدم في القطاع التعليمي الجامعات والمدارس

What is a Computer?

بمعنى مشتقه من Computer → compute → calculate حساب

The word 'Computer' is basically derived from the word 'compute' which means to calculate. Typically, Computer means a device, which accepts the data from the input devices. It processes the input data to produce the required output and stores as required.



يقوم بأخذ البيانات من اجهزة الادخال ويقوم بمعالجتها وينتج المخرجات وتخزينها

First Generation (1940 to 1956)
Using Vacuum Tubes

Third Generation (1964 to 1971)
Using Integrated Circuits

Fifth Generation (2010 Onwards)
Using Artificial Intelligence



Second Generation (1956 to 1963)
Using Transistors

Fourth Generation (1971 to 2010)
Using Microprocessors

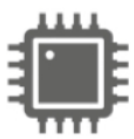
مثال على الاسئلة:

الجيل الاول وش استخدموا فيه ؟
اسم الجهاز مع الجيل



Features of Computer

The features of computers such as high speed of calculation, attentiveness, precision, consistency and a huge capacity to store the data, has made it an integral part of our life.



High Processor Speed
سرعة معالج عالية



Precision & Diligence
الدقة

Without any mistakes
بدون اي اغلاط



Huge Storage
مساحة تخزين عالية



Versatility & Reliability
الموثوقية والكفاءة



اختياري



كيف يعمل؟

How Computer Works



الكمبيوتر يتضمن hardware و software

The computer is integration of hardware and software with different types of peripherals. Computer works with the support of hardware devices and software programs. Detailed study of the same is covered in approaching sessions and chapters. Hardware devices consist of input and output devices referred as the physical components of a computer. Software applications referred as the background process consists of programs coded with different programming languages to interact graphically with the computer machine.

“The working of a computer involves the processing of data received from input devices and providing the output using output devices.”

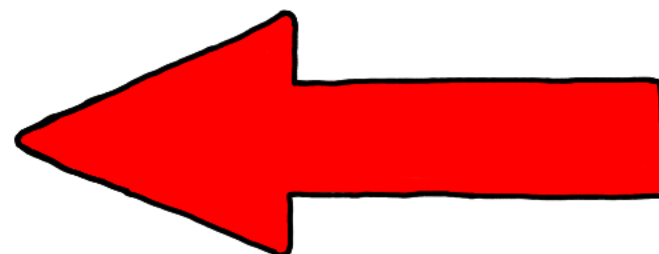
استقبال البيانات ومعالجتها واخراجها

Hardware :

مكونات مادية يمكن لمسها

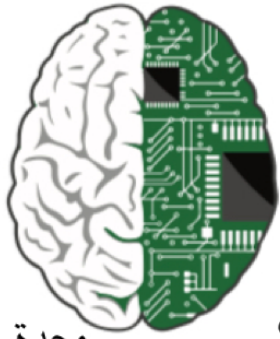
Software :

اكواد (coded) وبرامج
لا يمكن لمسها



الفرق

hardware, software

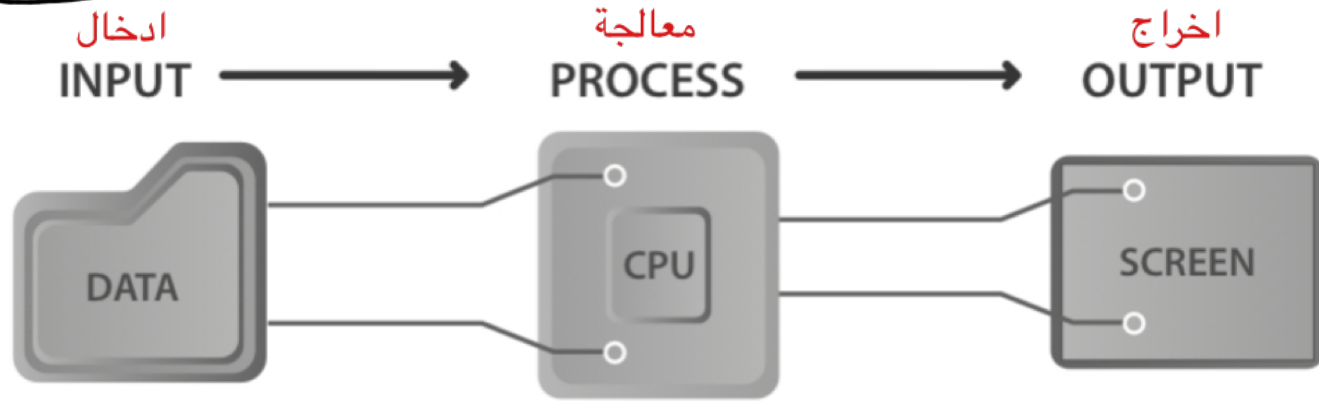


العقل

CPU is the "brain" of the computer.

سؤال !? ←

وحدة المعالجة المركزية



Here are some examples of applications of computers:

الشبكات والاتصالات
Networking & Communication

مفاهيم التصوير والوسائط المتعددة
Visualisation and Multimedia concepts

تطوير البرمجيات

Software Development

امن المعلومات
Information Security

Networking & Communication

الاتصال ادوات

التعريف :

Computer has become an easy and best tool for communication within a network. The network can be defined as connection and interaction between two or more computers using wired or wireless connections. e.g. Internet. These days the advancements of technology are touching the sky with different techniques such as the internet of things (IoT), cloud computing concepts and machine learning. Machines can communicate with humans and will be able to take decision in the near future. The details of data communication and computer networking will be studied in the Data Communication and Backup chapter.

اتصال او تفاعل بين جهازين او اكثر
(سلكي او لا سلكي)

Internet of things

مثل : المكيفات ، smart car



Visualization and Multimedia concepts

There are various visualization tools such as charts, graphs, maps etc. which provide visual summary of data and makes it easier to represent and understand the information. Visualization tools such as Photoshop, PowerPoint, Prezi etc. are used for image manipulations and presentations. Using multimedia advanced techniques, data can be presented in the combination of various forms such as audio, text, animations, pictures, video and scribed content to make interactive presentation. Multimedia is very useful to develop animated and interactive games. Moreover, the use of Augmented Reality (AR) and Virtual Reality (VR) provides a real-world environment with 3D and 7D technologies. The details of Visualization concepts will be studied in the Data visualization chapter.



Software Development

One of the application of computers is the development of system softwares and application programs using different programming languages. These include system software's like Mac OS, Windows, Android, IOS etc. and application software's like end user productivity tools (MS office, Adobe), games and social networking applications. Further details with practical skills are discussed in the Algorithm and Programming chapter.

النظام

تطبيقات
المستخدم



Information Security

In this trending digital technology era, the information is stored in computers, smart devices and cloud storage services such as One Drive, iCloud etc. Information must be protected to ensure its confidentiality, integrity and authenticity. To achieve information protection various security measures should be taken. You will learn about these security measures in the Information Security chapter.

حفظ في الكمبيوتر

Confidentiality : سرية

Integrity : نزاهة

Authenticity : مثل المصادقة بخطوتين
لتجنب انتحال الهوية

Classification of Computers تصنيفات

Computer can be classified based on its **size** and **performance**. The computers are broadly categorized into four types.

الحجم الاداء

غالي جدا

قاعدة بيانات كبيرة جدا الرياضيات والهندسة

علاق

Supercomputer



A supercomputer is a computer that performs at or near the currently **highest operational rate** for computers. They are **very expensive** and have been used for **scientific and engineering** applications that must handle very **large databases** or do a **great amount of computation**. They are utilized for specialized applications that require immense amounts of **mathematical calculations**. For example, **weather forecasting**, **animated graphics**, **dynamic calculations**, **nuclear energy research**, and **petroleum exploration** etc.

- Shaheen II system has a total of 197,568 processor cores and 790TB of aggregate memory.
- Shaheen II was the seventh fastest supercomputer in the world.



Mainframe Computer
(Ministry of Interior NIC) Riyadh

ابشر ، الهوية

Mainframe Computers

الحاسبات المركزية

Mainframes are a type of computer that are generally **known for their large size**, amount of storage, processing power and **high level** of reliability. They are primarily used by large organizations for special applications requiring **high volumes of data processing**. Mainframe computer is capable of simultaneous data processing for hundreds or thousands of users.

الفرق

In comparison to supercomputer, **mainframe computer uses its power to execute many programs concurrently**, while **supercomputers can execute a single program much faster than a mainframe computer**.

برنامج واحد وهو اسرع



Server

Mini Computers

يشبه ال larg

A minicomputer is a type of computer that **possesses most of the features and capabilities of a large computer but is smaller in physical size**. It fills the space **between the mainframe and microcomputer**. They are mainly used as small or mid-range servers operating **business and scientific** applications. However, the use of the term minicomputer has diminished and has merged with servers which are capable of supporting from **4 to 200 users simultaneously**.

Micro Computers

حجمه مناسب للطاولة

شخصي

Desktop Computer: A **personal computer**, sufficient to fit on a desk and is designed for **regular use at a single location** due to its size and power requirements.

محمول

اندماج

Laptop Computer: A **portable computer** with an **integrated screen and keyboard**. It is generally **smaller in size than a desktop computer and larger than a notebook computer**.

Palmtop Computer/Digital Diary/Notebook/PDAs: A **hand sized** computer that have **no keyboard but the screen serves both as an input and output device**.

جوال ، ايباد



Computer Peripheral Devices

As a machine computer requires hardware devices which support the entire process of computing. Computer hardware comprises of some electromechanical components. These required components are classified into three parts:

1 Input/ Output Devices



The **Input and output devices** allow the computer system to **interact with end users**. **Input devices** like keyboard, mouse, scanner etc. are used to **bring data into the system**. Further this data is **processed by the system unit** and the required information is provided to end users through **output devices** such as **monitor(screen), printer, speaker etc.**

2 System Unit وحدة النظام



The System Unit, also known as System **Cabinet**, is a container that holds most of the electronic components such as Motherboard, **Central Processing Unit (CPU)**¹ and Memory unit. A motherboard is the main printed circuit board in system unit. It holds and allows communication between many electronic components of a system, such as the central processing unit and **memory**,² and provides connectors for other peripherals.

³**Motherboard is also known as the heart of the computer.**

CPU controls the instructions from the input and output devices and processes them accordingly. CPU is named as the brain of the computer.

وحدة المنطق الحسابي

وحدة التحكم

CPU consists of the Arithmetic Logic Unit (**ALU**) and the Control Unit (**CU**).

العمليات الحسابية والمنطقية
جمع وطرح ومقارنة

- **ALU** executes all the **arithmetic and logical operations** such as basic additions, subtractions and comparisons (+, -, *, /, <, >, =).

وحده تنفذ وتتحكم في بقية
العمليات في الكمبيوتر وتنسق مع
الاجهزة الاخرى

- **CU** is like an execution unit which **controls the rest of the computer instructions** and coordinates with other devices in the queues.

3 Memory Devices



مؤقتة

دائمة

Memory devices are used to store data and programs on a **temporary** or **permanent** basis. Memory is categorized as **primary** and **secondary** storage. The **primary** memory is the **storage space in computer** where data and instructions to be processed by CPU are stored. Primary memory is also known as main memory and consists of RAM and ROM. **Secondary storage is used to store data and information permanently. These include the storage devices like HDD, DVD, Flash Drives, Memory Cards etc.**

من المصنع

ثانوية ، تخزينها بشكل دائم

تشمل اجهزة التخزين مثل HDD , DVD
ومحركات الاقراص وفلاش وبطاقات
الذاكرة

انا احفظ فيه

ذاكرة أساسية تتم معالجة البيانات وحفظها
في مساحة التخزين الموجودة

Activity 1

Fill in the blanks:

- Software , network , Computer , Hardware , Software , Minicomputer**
- 1 - Computer is a device ^{جهاز} which accepts the data from the input devices. It processes the input data to produce the required output and stores as required.
- 2 - The computer is the integration of Hardware and Software with different types of peripherals.
- 3 - Software applications referred as the background process consists of programs coded with different programming languages to interact graphically with the computer machine.
- 4 -The Network can be defined ^{دمج} as connection and interaction between two or more computers using wired or wireless connections.
- 5 - A Minicomputer is a type of computer that possesses most of the features and capabilities of a large computer but is smaller in physical size.

Activity 2

Choose the correct option for the following statement:

- 1 - _____ is also known as the heart ^{قلب} of the computer.
- 2 - _____ is named as the brain ^{عقل} of the computer.
- 3 - _____ executes all the arithmetic and logical ^{حسابية ومنطقية} operations such as basic additions, subtractions and comparisons ^(+, -, <, >, ==).
- 4 - _____ is like an execution unit which controls the rest of the computer ^{يتحكم في باقي عمليات الكمبيوتر} instructions and coordinates with other devices in the queues.
- 5 - _____ storage is used to store data and information ^{حفظ البيانات بشكل دائم} permanently.
- A) CPU
B) Motherboard
C) Screen
D) Mouse
- A) CPU
B) Motherboard
C) Keyboard
D) Printer
- A) CD
B) CU
C) ALU
D) DVD
- A) ALU
B) DVD
C) CD
D) CU
- A) Primary
B) Secondary
C) Input
D) Output

مثل : الفلاش

CHAPTER

1

Session

2

Computer Applications



List of Acronyms

Software	Set of programs مجموعة من البرامج
Open Source Software	It is a freeware software can be used without licenses مجاني بدون تراخيص
OS	Operating System نظام التشغيل
GUI	Graphical User Interface واجهة المستخدم الرسومية
CLI	Command Line Interface واجهة خط الاوامر

Introduction



دمج
It is well-known that computer is the combination of hardware and software. In the previous session, you have learned about the basic concepts and working process of the computer. Computer is a machine which requires both hardware and software. The necessity of software is to convert the data into user understandable information so that the end user can interact easily with the computer.

تعريف الكمبيوتر:
جهاز لكي يعمل يحتاج لكل من Hardware و software

Software:

تحويل البيانات الى معلومات قابلة للفهم من قبل المستخدم حتى يستطيع التفاعل مع الكمبيوتر بشكل سهل

Software is a set of programs. A program is a set of instructions that a computer can execute. Program instructions are basically commands given by humans to run the machine. These programs convert the data into understandable information with the help of computer hardware.

Software:

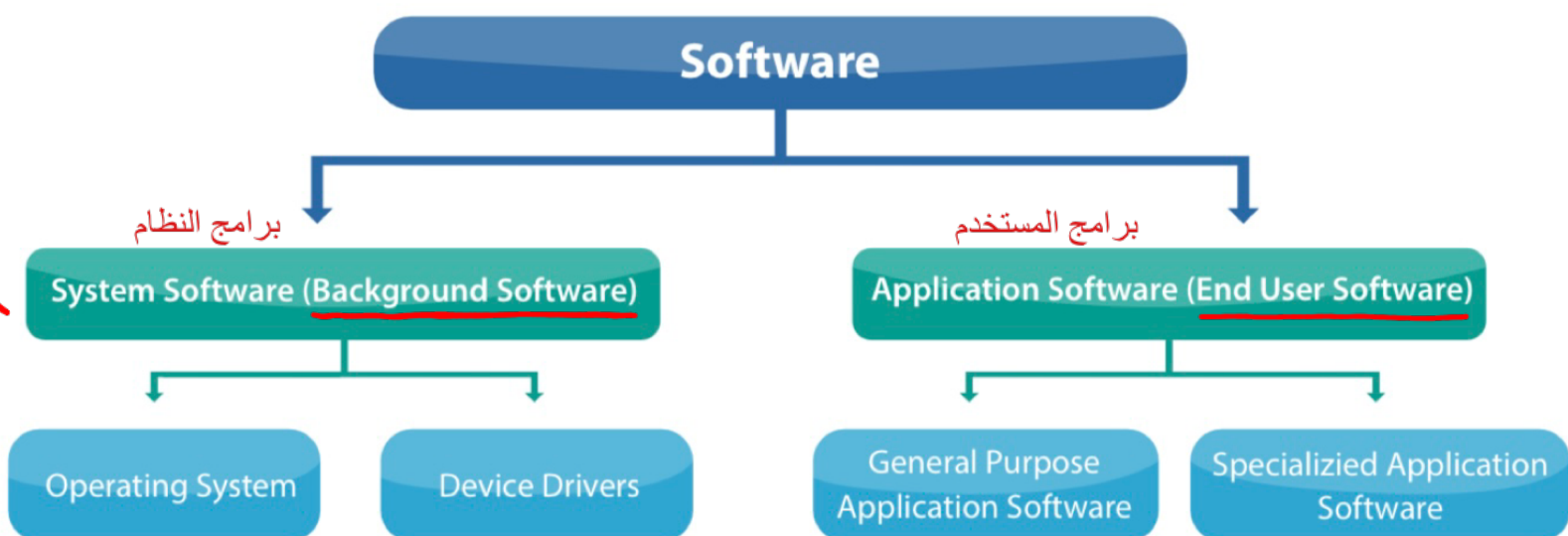
مجموعة من البرامج ، البرنامج الواحد عبارة عن مجموعة من التعليمات ، التعليمات هي اوامر معطاه من الانسان لتشغيل البرامج

Software → set of program → set of instructions

Classification of Software

تصنيفات

Generally, the software can be classified into two types:



System Software



System software is designed to provide **interface**, which comprises **operating systems**. It **controls and manages the hardware devices and other end user applications**. It manages all the **utility functions**, such as **booting** up the computer and it is programmed to complete the **loading, executing, retrieval of files** from the computer and **storing** the data in the secondary storage devices. It mainly works in the background and requires little or no user interference.

يعمل بشكل اساسي في الخلفية ويتطلب القليل من تدخل المستخدم او لا يتطلب ابداً

Function : booting , loading , executing , retrieval of files , storing

الوظائف التهيئة التحميل التنفيذ استرجاع الملفات تخزين

مصممة لوجود واجهات خاصة بكل نظام تشغيل تقوم بعملية تحكم وادارة لل hardware والتطبيقات في الجهاز

Operating System نظام التشغيل



نظام التشغيل هو اكثر برامج النظام شيوعاً

Operating System is the most common System Software. An Operating System is the **backbone of a computer system**. It controls and manages the entire operations of a computer. All computers, tablets and smartphones need an Operating System to function properly.

هو العمود الفقري لنظام الكمبيوتر يتحكم و يدير العمليات الكاملة للكمبيوتر ، تحتاج جميع اجهزة الكمبيوتر و الهواتف الذكية الى نظام التشغيل لتعمل بشكل صحيح



Example of Operating Systems

Device Driver برامج تشغيل الجهاز

التعريف : يتحكم بالعمليات لجهاز محدد

Another example of system software is a Device Driver software, which controls the operation of a particular **device**. An example of device driver is **Printer Driver** software.



Types of Operating Systems:

Operating Systems are classified as **User based**, **Interface based** and **Processing Method** based which are briefly discussed below;

User-Based Operating Systems

عدد المستخدمين

مستخدم واحد

1 - Single-User Operating Systems:

This type of OS is designed to manage the computer so that **one user can** effectively **do one task at a time**. **مستخدم واحد يقوم بمهمة واحدة**

Example

MS-DOS (Single User Single Task)

مستخدم يقوم بمهام متعددة

You will also find a **single user multitasking system** on a personal computer. **It is designed to deal with many applications running at the same time by single user**. **مصمم لفتح اكثر من مهمة في نفس الوقت لمستخدم واحد**

Example

WIN95, IOS and Android.

متعدد المستخدمين

2 - Multi-User Operating Systems:

This type of OS **allows multiple users to work at the same time on a computer**. **اكثر من مستخدم يشتغلون على نظام تشغيل واحد**

Example

Linux, UNIX, macOS and Windows Server

User Interface Operating Systems

واجهة المستخدم

سطر الاوامر

1 - Command Line Interface:

اسم ثاني :

This type of OS is also called as **character-based operating system**. CLI operating systems are **command based that require typing** of commands to perform a task. **سطر اوامر انا اكتبها**

Example

MS-DOS (Disk Operating Systems)

Modern computers support CLI, batch processing and GUI in one interface.

واجهة المستخدم الرسومية

2 - Graphical User Interface:

سهل الاستخدام بواسطة اجهزة التاشير والشاشات اللمس لتسهيل العمل بالكمبيوتر. **Provides the easy user interface with pointing devices or touch screens to select the icons from the screen. GUI makes it easier to work on a computer, even for a novice user**. **سهل حتى للمبتدئين**

Example

Windows, MAC, Linux

Based on Processing Method

المعالجة

الزمن الحقيقي

1 - Real-Time Systems:

يتحكم بالاجهزة الميكانيكية الكهربائية بشكل مباشر

These systems are used for **direct control over electromechanical equipment** such as industrial robots, factory processes, power stations, airplanes, trains and **cars**. **They monitor external events and react instantaneously** that is why they are known as real-time systems. **عملية مراقبة للأحداث الخارجية ويتفاعل معها في الوقت نفسه مثل السيارات**

Example

LynxOS

الحزم

2 - Batch Systems:

مثال: حساب وطباعة فواتير العملاء

These systems are **used for running batch operations** such as **calculating and printing of customers' bills**, although they are not as common nowadays as they once were. **They often run a single task for hours or even days at a time**.

Example

النظام مصمم للقيام بسلسلة من المهام او العمليات نفسها واعادتها طوال الوقت

Banks process millions of cheques each month. These are processed together in a long run, usually overnight.

Functions of Operating Systems:

Many functions are performed by the OS but the main goal is to provide the interface between the user and the hardware. i.e. providing the interface for working on the system by the user. The functions performed by an Operating System are:

المهمة الاساسية هي انه يوفر الواجهات يتفاعل فيها المستخدم مع ال Hardware

Storage Management ادارة التخزين

التحكم في جميع عمليات التخزين

Controlling all the storage operations like how the data or files will be stored in the computer and how the files will be accessed by the users. All the operations which are responsible for storing and accessing the files are determined by OS.

مثل كيف يتم تخزين البيانات وكيف يمكن الوصول اليها من قبل المستخدم



Process Management ادارة العمليات

OS manages all the running processes of the system. It handles operations by performing tasks like process prioritizing, starting or stopping the execution of the process and dividing the large processes into the small processes.

بدء او ايقاف تنفيذ العمليات وتقسيم العمليات الكبيرة الى عمليات صغيرة



Resource Management ادارة الموارد

Operating system is managing and facilitating the operations of the resources connected to the computer such as memory devices, printer, scanner etc.

ادارة و تسهيل عمليات ادارة الموارد المتصلة بالكمبيوتر
مثل : الذاكرة والطابعة والماسح الضوئي



توفير واجهة المستخدم

Providing User Interface

OS provides a user interface (UI) for the novice user to interact with the machine. The way to interact with computers is termed as the User Interface

يوفر نظام التشغيل (UI) للمستخدم المبتدئ للتفاعل مع الجهاز

التعريف

الطريقة التي يتفاعل فيها المستخدم مع الكمبيوتر



Run Applications تشغيل التطبيقات

OS loads and runs applications (or apps), such as Microsoft Edge or MS Word. Most OS supports multitasking which allows to run multiple apps simultaneously and switching between them.

تحميل او تشغيل التطبيقات
مثل (Ms word , Microsoft edge)

اغلبها تدعم العمليات المتعددة في الوقت الواحد والتبديل بينها



Apple Macintosh (macOS)



Apple Macintosh, commonly known as macOS, is actually the first OS to provide the GUI. It is designed to run with Apple computers. It is not as widely used as the Windows OS; thus fewer applications have been developed to run on macOS. It is a powerful, easy-to-use operating system and it is popular with professional graphic designers, desktop publishers, and many domestic users.

معروف باسم **MacOS** ، اول نظام تشغيل وفر الواجهات الرسومية ، مصمم ليعمل على ال Apple computer ، يعتبر اقل شهرة من الويندوز لذلك عدد التطبيقات المطورة فيه

Microsoft Windows



Microsoft's Windows is by far the most popular operating system for PCs. Most of the desktop applications are developed to run under windows as compared to any other OS. Windows comes in different versions and was initially designed to run with Intel or Intel-compatible processors. Windows 10 is the latest release from Microsoft, which has a modern user interface and supports tablet computing as well.

نظام تشغيل مطور من Microsoft و يعتبر اكثر نظام تشغيل للكمبيوتر الشخصي شهره ، اغلب البرامج التي تم تطويرها تعمل تحت ال Windows ، اول اصدار كان يعمل مع المعالج Intel اخر اصدار windows 10 اصبح اكثر حداثة ويدعم التابلت كمبيوتر

Linux



Another famous name in the operating systems category is Linux. The specialty of Linux is that it is an Open Source OS, which means it is freely distributable. It can be customized and used with different types of computers, tablets or smartphones. We will learn about it in details at the end of this session.

المميز فيه انه نظام تشغيل مفتوح المصدر وهذا يعني طريقة توزيعه مجانيه يعمل على انواع مختلفه من الكمبيوتر والتابلت والهواتف الذكية

Android



Android is one of the Linux based operating systems developed by Google and the Open Handset Alliance (OHA), a coalition of more than 30 hardware, software and telecom companies. It is designed primarily for mobile and touchscreen devices such as Smartphones and Tablets. Android's User Interface is mainly based on touch gestures that correspond to real-world actions, such as swiping, tapping and pinching along with a virtual keyboard for text input.

Android is now the most popular mobile OS providing lots of exciting features. Its open nature has encouraged a large community of developers to develop Android based applications (or apps). Thus, Google Play Store has over billions of android apps.

نظام التشغيل مصمم بناءً على ال Linux وهو اكثر نظام تشغيل شهرة للجوال ولديه تطبيقات مطورة كثيرة جداً ، google play فيها اكثر من بليون تطبيق للاندرويد

Overview of Different Operating Systems

Windows 10

Windows 10 is the latest version of Microsoft Windows operating system. It is a major shift from the previous versions of Windows. It has been essentially modernized to support the touch devices and pen input. Lots of enhancements and new features have been added to it. The following parts will take you through the Windows 10 Operating System.



New Features of Windows 10

Once you Sign in to Windows 10, you are in the all-new Windows 10 environment. You should first go through the new features Microsoft has come up with. Some of the interesting and exciting new features of Windows 10 are as follows:

New Start Menu

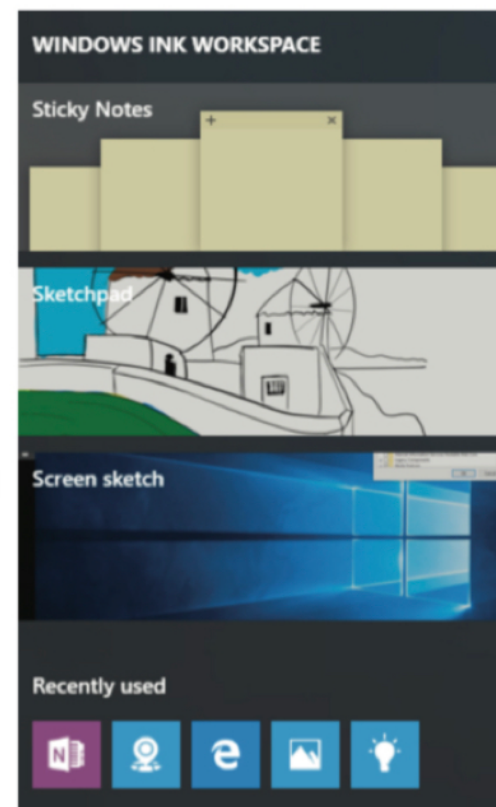
Microsoft has changed the start menu based on the experiences and feedback from the users. It is now more comprehensive, efficient and modern. It has a tile-based start screen along with the classic features of a start menu. The tiles on the start menu can display live contents making it an intuitive start. You can customize it right on its place, such as resizing tiles or start menu itself and pin or unpin applications etc.

Keyboard shortcut to open start menu is "Ctrl+Esc" or simply press "Windows key" on keyboard.



Windows Ink

As the world is moving towards the mobile and touch based computing, Windows 10 has introduced the Windows Ink feature. It allows you to use pen input in different apps or annotate on snapshot of your current screen. If you have a touch screen device, the Windows Ink icon appears in the Notification Area of the Taskbar by default. Otherwise, to activate it, you need to Right-Click on the Taskbar and choose "Show Windows Ink workspace button." When you click on Windows Ink icon, a sidebar of the Windows Ink workspace appears, which usually has the following options:



Sticky Notes: Allows you to create brief sticky notes by using pen tools such as adding a schedule reminder. Windows uses character recognition (or handwriting recognition) to read your sticky notes.

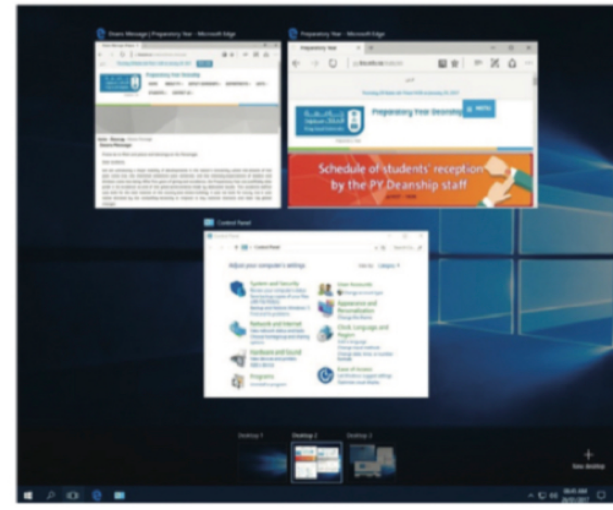
Sketchpad: Enables you to create freehand drawings with pen tools and save it as an image file.

Screen Sketch: Allows you to draw or annotate on a snapshot of the current screen.

Get More Pen Apps: You can click on "Get more pen apps" link to open the windows store and download desired pen apps.

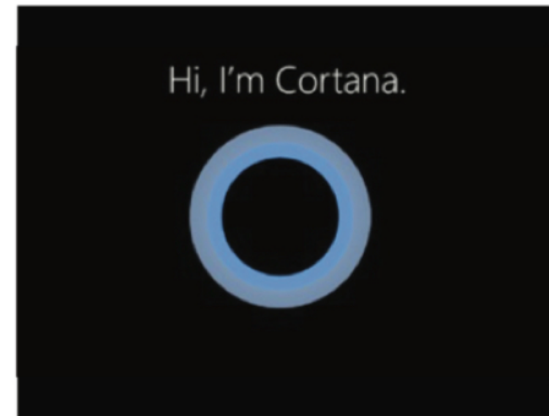
Virtual Desktops

Virtual Desktop is the very useful feature Microsoft has provided with Windows 10. This gives you the experience of working with multiple screens; although having just one. So while you work on multiple apps, you can better organize them with multiple Virtual Desktops. You can group your personal apps together in one desktop and work apps in another. You can Add New Desktops as you want and switch between them easily. The Task View button on the taskbar helps you manage it. You can easily move running apps from one desktop to another with just the Right Click of the mouse. Interestingly, if you close a Virtual Desktop, the apps that were running on it won't be closed, rather they will be shifted to previously available desktop.



Cortana or Search

Cortana is another enhancement in Windows 10. Cortana is a voice-activated personal digital assistant, which provides relevant suggestions and alerts. The more you use Cortana, the more personalized your experience will be. For example, you can use Cortana to find files/apps on computers, search the internet, send emails, help out with navigation, setting reminders, and more. Cortana is available only in certain countries or regions. It is accessible from the search box at the taskbar right next to the start button. You can command Cortana by either typing in the search box or by clicking on the mic button to talk to her.



You can also say "Hey, Cortana" to activate via Mic through audio input.

When Cortana is not available, it is replaced with the Windows Search, helping you to search for apps, files, folders, and settings on your computer.



اسفه يا جماعة ما قدرت اترجم هذا الجزء بسبب الضغط لكن غالباً الجزء المخطط هو المهم لكن احتياطات ذاكره كامل 😞

Apple Macintosh (macOS)

MacOS is the graphical operating system powered by Apple MAC. Compared to other OS, it is simple to work using high-end graphics. It is specially designed to run on Mac(Apple) devices. MacOS provides a complete suite of smart apps on its **app store**. It **also offers cloud storage "iCloud" to store your personal information and to synchronize with all other devices**. It works with your iPhone also. It is designed to provide data security and protection with enabled security measures.

يحتوي على **App Store** و التخزين السحابي او **iCloud** يتم فيه تخزين المعلومات الشخصية ومزامنتها مع بقية الاجهزة

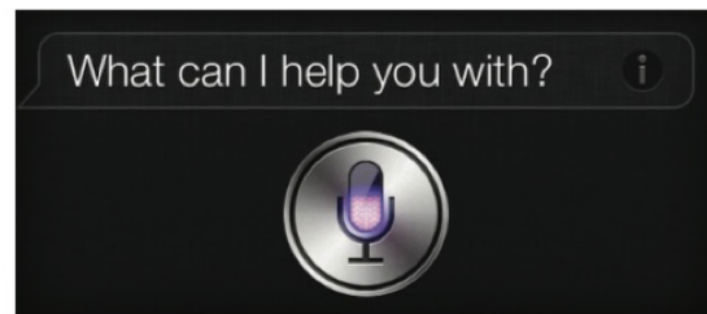


The latest version of Apple's operating system is called **macOS High Sierra**. Upgraded with different **software enhancements**, it also lays the foundation for future innovations in the world of **VR (Virtual Reality)** and **AR (Augmented Reality)**.

آخر اصدار من (Apple's operating system) هو **macOS high Sierra** ومن الاشياء المستحدثة فيه هي تحسينات على **software** و ايضاً اساسيات لاستخدام ال **VR** و **AR** (الواقع المعزز والواقع الافتراضي)

Features of MacOS High Sierra

- **Apple File System.** هو نظام الملفات Apple
- **Virtual reality for Mac.** تستخدم الواقع المعزز
- **Siri** سيرى
- **iCloud Drive and Optimized Storage** التخزين السحابي



Introduction to Open Source Software



Open source software is a **free** to use software for your individual use. A developer of such software freely share knowledge and makes the source code available to the public. Generally, such software is distributed with a license which allows other developers to modify it and/or add to it. Some examples of open source software are Linux, Android, Ubuntu, Firefox etc.

يوزع مجاناً ويوزع معها التراخيص التي تسمح للمطورين بإجراء تعديلات او اضافات على هذي البرامج بشكل مجاني من الامثلة : Linux , Android , ubuntu , Firefox etc



Generally, the major difference between open source software and commercially available programs is the huge amount of money which you pay as a license fee. Some developers make free products for all users while other developers create commercially available products. Some developers come with a different idea and create a free and paid version of their products.

نوعين من البرامج مفتوحة المصدر :

- 1- **open source software** : هو يوزع مجاني مع التراخيص التي تتيح فرصة التعديل والاضافة مجاناً
- 2- **commercially available programs** : يجب شراء التراخيص للتمكن من التعديل والاضافات



في عام ١٩٨٣ ، بدأ ريتشارد ستالمان مشروع تطوير نظام تشغيل حر يسمى مشروع جنو (لينكس). تم تطوير المفهوم مع الفكرة الجديدة لشفرة المصدر المفتوح للمستخدمين دون أي حقوق نشر. تم إنشاء نظام التشغيل ومعظم برامج من قبل متطوعين وموظفي الشركات والحكومات والمؤسسات من جميع أنحاء العالم. إنه يؤكد على الحق في استخدام رمز البرنامج ويحفظ المستخدمين على التطوير بميزات محسنة جديدة. بشكل عام ، يتم توزيعها بموجب التراخيص العامة العامة (GPL) التي تمنح المستخدمين حرية تغيير البرامج ومنع تحويلها إلى برمجيات احتكارية.

يتمتع المطور بحرية المساهمة في نظام التشغيل وهو مجاني للاستخدام. إن نموذج التطوير التعاوني هذا مخصص لمنفعة الجميع. ولهذا السبب يُعرف بشكل أفضل بالبرنامج المسؤول اجتماعيًا. واختصره عالم التكنولوجيا على أنه FOSS البرمجيات الحرة والمفتوحة المصدر.

لينكس لديه العديد من المزايا الأخرى ، بما في ذلك السرعة والأمان والاستقرار. إنه يأتي من عائلة UNIX الراسخة لأنظمة التشغيل ولذا فقد تم تصميمه لوضع الأمان في الاعتبار. ومن ثم ، فإن الفيروسات والديدان وبرامج التجسس والبرامج الإعلانية هي في الأساس ليست مشكلة على Linux.

Application Software

The Application software is a group of programs that facilitate the end-user with different features of the computer to perform certain tasks. Application softwares are designed specifically in the view of the end-user's requirements. You will learn practical skills of this type of software in the coming sessions.

Examples MS Office, Microsoft Edge, Safari, etc.



Applications Software can be categorized into **two types**.

General Purpose Application Software

برنامج تطبيق للاغراض العامة

Applications that are **used commonly by computer users** are called general purpose applications, such as **word processors, spreadsheets, databases, desktop publishing packages, graphics packages etc**

التطبيقات التي يستخدمها المستخدمون بشكل شائع في كل مكان للاغراض العامة مثل معالجة النصوص سفاري وجداول البيانات و قواعد البيانات وحزم النشر المكتبي وحزم الرسومات

Specific Purpose Application Software

Applications which are **designed for specific task or organization according to the defined requirements of the user** is called as **Specific Purpose Application Software**. Examples include **Air Traffic Control System, Learning Management System for Universities** etc.

By now, you have got a basic understanding of an OS and basic information about the different OS available in the market.

تقوم بمهام معينه او تكون منظمه لها برامج مخصصه مثل ال LMS في الجامعات يختلف من جامعة لجامعة

Activity

1

Choose the correct option for the following statement.

عدة تعليمات

1 - A _____ is a set of instructions that a computer can execute.

- A) Software
- B) hardware
- C) Information
- D) Command

2 - Generally, the software can be classified into _____ types

- A) Two
- B) Three
- C) Four
- D) Five

3 - _____ controls and manages the hardware devices and other end-user applications.

- A) Spreadsheet
- B) MS Word
- C) System Software
- D) Application Software

4 - Functions of Operating System are _____

- A) Storage Management
- B) Process Management
- C) Resources Management
- D) All of the above

5 - Some of the interesting and exciting new features of Windows 10 are _____

- A) New Start Menu
- B) Windows Ink
- C) Virtual desktop
- D) All of the above