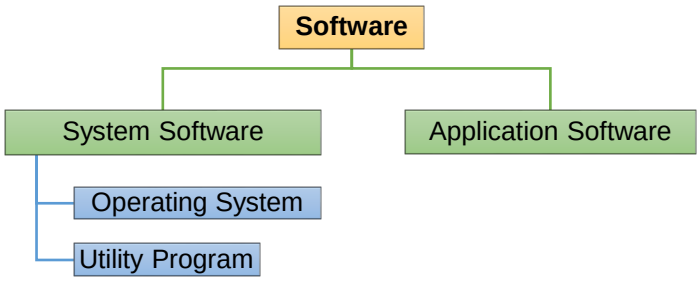
1.4 SOFTWARE

The software is the instructions (programs) that makes the computer work. Software is held either on your computer's hard disk, CD-ROM, DVD or on a USB flash memory, and is loaded (i.e. copied) from the disk into the computers RAM (Random Access Memory) when needed.



After a software installed on a computer, it is important to be updated regularly. Software updating is important to fix problems and to enhance features of the software. Auto update option is available for most software, but for software doesn't update automatically make sure to update them manually.

1.4.1 TYPES OF SOFTWARE

1. Systems Software

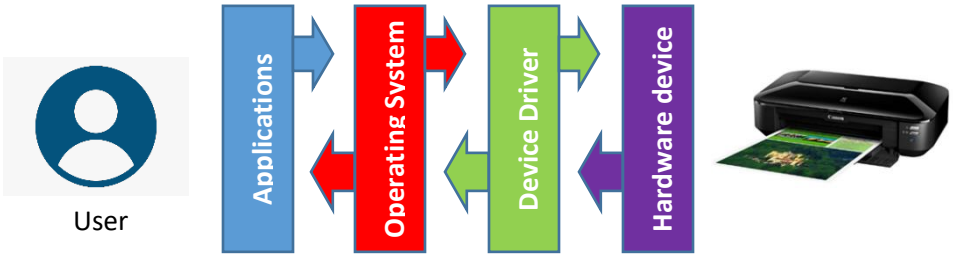
The system software is a special type of programs that load automatically when you start your computer. They control or maintain the operations of the computer and its devices.

- **Operating system**: is a system software that allows a user to run other applications on a computing device. Also, it communicates with hardware devices and manage the files storages.

  Examples of operating system are: MS-DOS, Windows 10 (Home, Pro, Mobile, Enterprise), Linux, and Mac OS for computers. Also, they include Android and IOS for mobile phones.

- **Utilities software:** a type of system software that add functionality to your computer or help your computer perform better. They include antivirus, backup, disk repair, file management, files compression, and many more. Some of them are built-in with operating system and others are installed independently.

- **Device driver:** is type of system software that is designed to enable interaction between the hardware device and the operating system or programs that use it. Without the device driver, the corresponding hardware device fails to work. Many hardware devices need drives such as: printers, graphic cards, sound cards, network cards and modems



2. Application Software

Is a software designed to make users more productive and assist them with his personal tasks. The following are some examples of application programs:

1. Microsoft Word
2. Calculator
3. Microsoft Excel
4. Web browser
5. Microsoft Access
6. Adobe Photoshop
7. Microsoft PowerPoint
8. Games

1.4.2 INSTALLING AND UNINSTALLING SOFTWARE

The installation process for software or apps depends on your operating system (Windows or MAC OS), your device (computer, smartphone, or tablet), and the program you are installing. The following are guidelines for installing a software:

1.4.2.1 Installing from a disc or USB flash: if you need to install software from a CD-ROM, simply insert the disc into your computer, then follow the instructions.

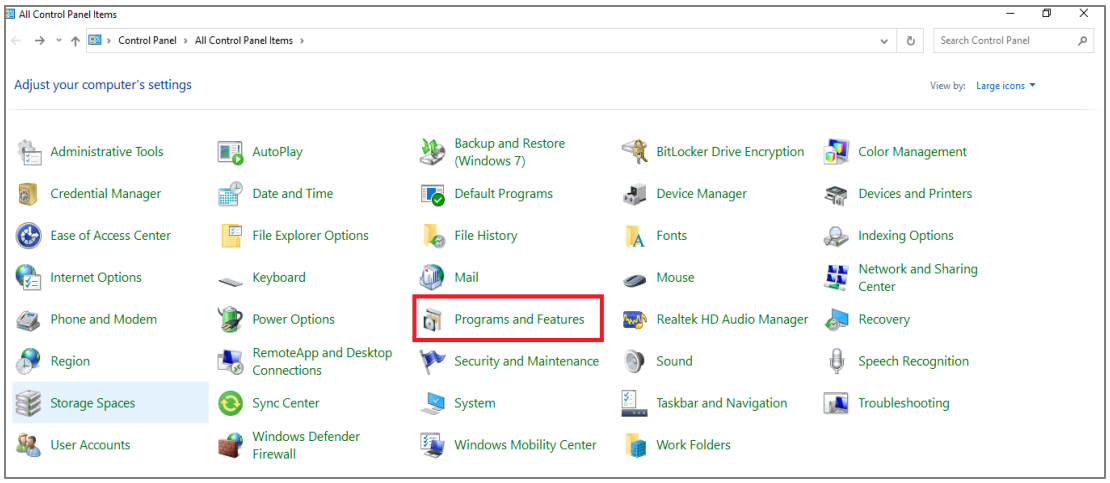
If you need to install software from a USB flash, open "This PC" or "File Explorer" and find the USB drive. After the drive is opened, double-click on the "setup" or the "executable file" to start the installation process.

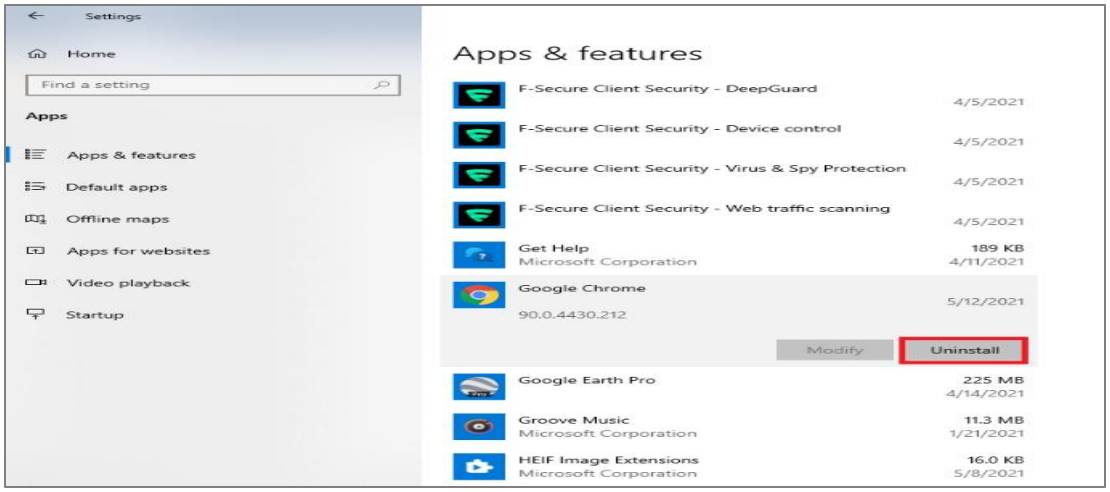
1.4.2.2 Installing from the web: After downloading the program from the website providing the program, open the *downloads folder* and double-click the file icon to start the setup process. If the downloaded file is compressed (e.g., .zip or .Rar), you must extract the file's contents before setup can begin.

1.4.2.3 Uninstalling software application

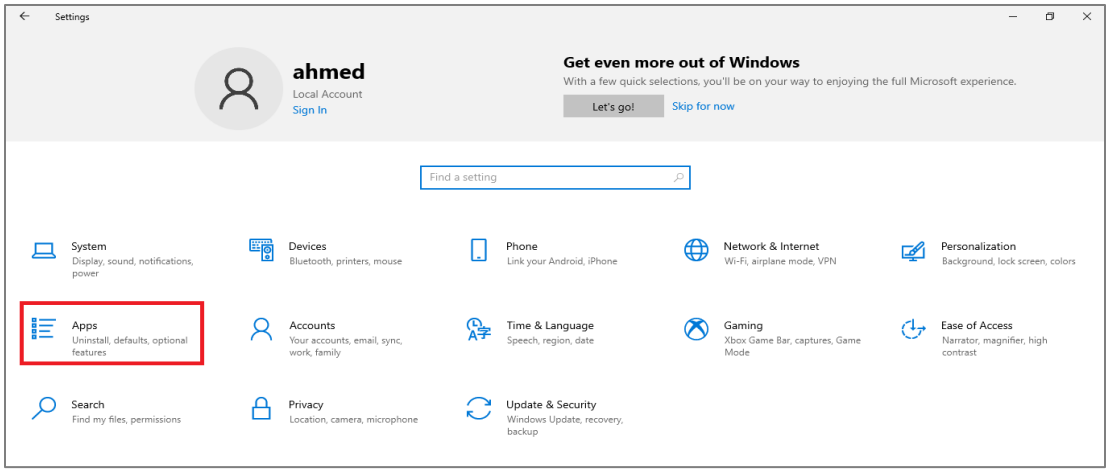
To uninstall (or remove) a programs using windows 10, you can do it as following:

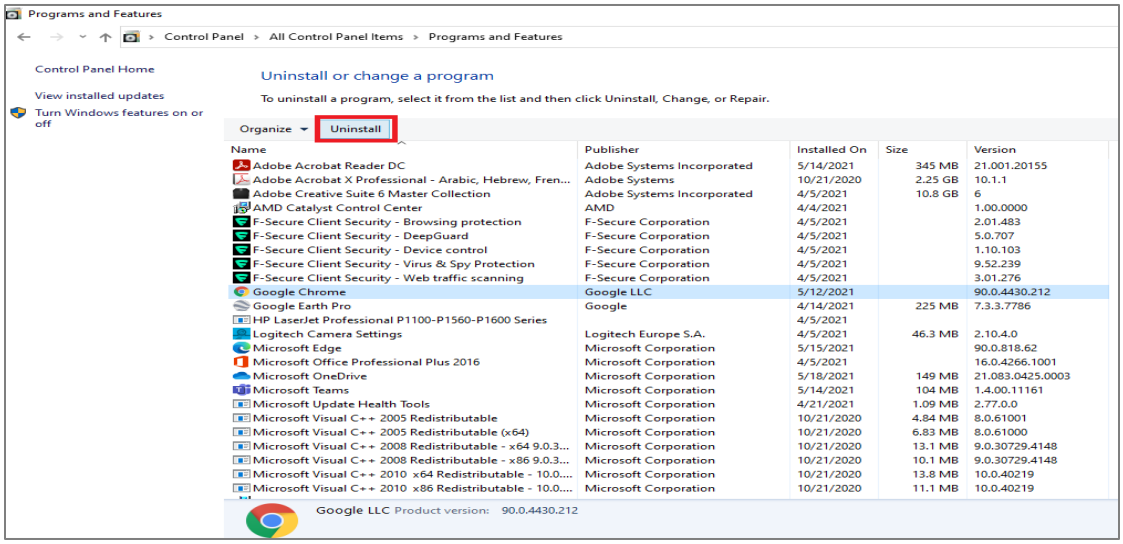
- **From Control Panel**: Control Panel >> Programs and Features >> select the program you want to uninstall >> click on "Uninstall" button.





- **From Setting**: Settings >> Apps >> Apps and feature >> select the program you want to uninstall >> click on “Uninstall” button





1.4.3 SOFTWARE COPYRIGHT

Computer Software is usually protected under a single site or multi-site license based on number of users, type of users, number of computers, and size of institutions.

Software copyright is commonly used by proprietary software companies to prevent the unauthorized copying of their software. Open source licenses also rely on copyright law to enforce their terms.

1.4.3.1 End-User License Agreement (EULA)

End User License Agreement (EULA) is a legal contract between the manufacturer and/or the author and the end user of an application. EULA details how the software can and cannot be used and any restrictions that the manufacturer imposes. The user has the choice of accepting or rejecting the agreement, often without reading it first. The installation of the software is conditional to the user clicking a button labeled "Accept".

1.4.3.2 Shareware

Refers to proprietary software that is provided to users without payment on a trial basis. Once the trial period has passed, the program may stop running until a license is purchased Example: Microsoft Office, Adobe Photoshop etc,

1.4.3.3 Freeware

Software that is fully functional for an unlimited time with no cost. The author usually restricts one or more rights to copy, distribute, and make derivative works of the software. Example: Mozilla Firefox, Google Chrome etc.

1.4.3.4 Proprietary software

Any software that is copyrighted and bears limits against use, distribution and modification that are imposed by its publisher, vendor or developer.

1.4.3.5 Open source software

Software made by many people and distributed which grants all the rights to use, modify, and share the software in modified and unmodified form. Software freedom is essential to enabling community development of open source software. Example: Open Office.
In Oman, a national intuitive for Free and Open Source Software (FOSS) was launched in 2010. The initiative has many objectives such as: introducing FOSS as a good choice along with proprietary software, developing IT solutions based on FOSS, and encouraging the public to use FOSS in order to limit the use of unlicensed software.

1.5 CHOOSING THE RIGHT COMPUTER

Students of all ages are using computers more often than ever. They use computers for schoolwork, online classes, chatting, e-mail, games, and surfing the internet. However, choosing the right computer for a student can be a difficult task. Operating system, computer size, hard drive size, processor speed, and available hardware and software all help determine which computer you will decide to buy.

1.5.1 Factors considered when buying a computer

When you decide to purchase a computer, there are some factors you should consider before taking such decision. Considering those factors will help you to choose the right computer for your need.

- **Usability**: you should ask yourself why you want to buy a computer? How much you are going to use it?
- **Price**: this is an important factor that will determine which computer you will buy?
- **Operating System**: Windows 10, for example, comes with several editions: home, pro, Enterprise, education, etc. Editions with more features are obviously more expensive.
- **Processor**: Since the processor is a critical computer component, choosing a good processor with high speed will support your computer performance.
- **Random Access Memory (RAM):** The more RAM a computer has, the smoother performance you will get and the more applications you can open on the same time.
- **Storage**: if you are planning on saving a lot of large files such as photos or videos, high capacity hard disk will be a good choice for you. Nowadays, SSD (*Solid State Drive*) works faster than the traditional HDD (*Hard Disk Drive*), but it is more expensive.
- **Brand**: In general, the famous brands around the world are the straightaway winner on the market. Also, some brands come with attractive offer such as warranty and software.

Below is an example of minimum personal computer specifications:

Processor:	Intel Core i7 CPU @ 4.90 GHz
RAM:	8 GB
Operating System:	Windows 10, Home
Video memory :	2 GB
Hard disk:	1 TB

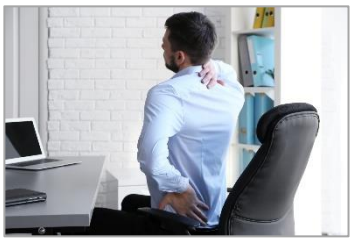
1.6 ERGONOMICS

Ergonomics is the science of designing the job, equipment, and workplace to fit the worker, necessary to prevent **Repetitive Strain Injuries (RSI)**, which can develop over time and can lead to long-term disability.

The following factors should be considered in your workplace:

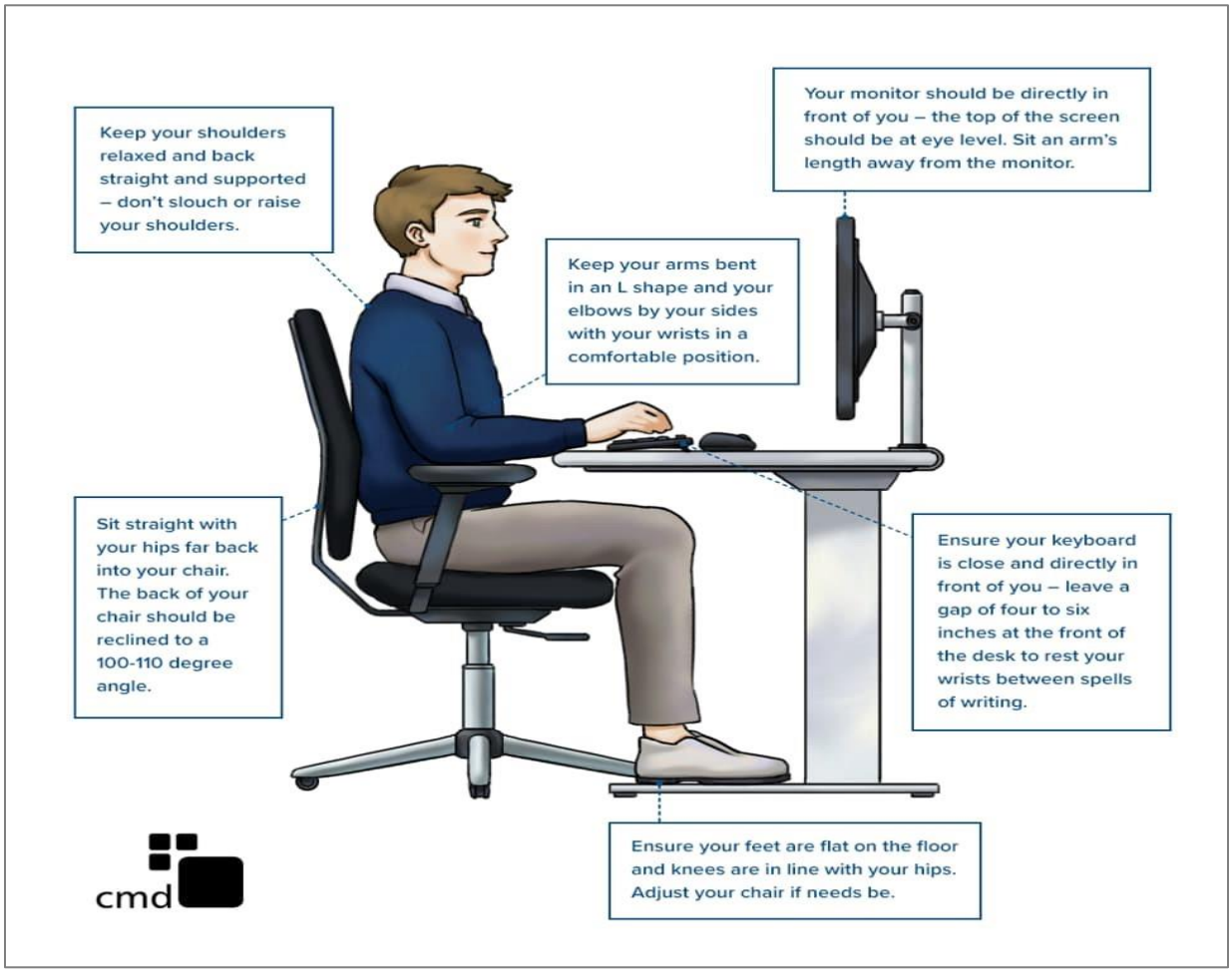
- Enough lightening and ventilation.
- A comfortable and adjustable chair.
- A suitable size monitor with a good level of brightness and contrast.
- Take a regular short interval breaks.

Many health problems can result when not following the correct office ergonomics, such as:



- Repetitive strain injury.
- Back and neck pain.
- Joint pain and muscle stiffness.
- Computer vision syndrome.
- Headaches.

The image below demonstrates the correct posture ergonomics:



SUMMARY

This Module covered the two essential parts of a computer system: hardware and software. Hardware is the physical component of the computer. Computer hardware incudes input devices, output devices, storage devices, central processing unit (CPU), motherboard, Random Access Memory (RAM), and other components. The software is the instructions (programs) that makes the computer work. There are two categories of software: system software and application software. Understanding how different hardware components work together to process data helps to understand how the computer works.

The module also highlighted how to avoid Repetitive Strain Injuries while we work on computer. Ergonomics includes the right way to set in front of a computer, good lightening and ventilation, and taking regular short interval breaks.

REVIEW QUESTIONS

1. What is the definition of a computer?
2. What are the different types of computers?
3. Explain the four operation included within the machine cycle?
4. Give three types of printers?
5. Compare between the capacity of CD, DVD, and Blu-Ray?
6. List 3 functions of the operating system?
7. How a software can be uninstalled using Windows 10?
8. Many hardware devices need drivers to work on a computer, why?
9. What are the most important factors need to be considered when buying a computer?
10. List some health problems can result when not following the correct office ergonomics?

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