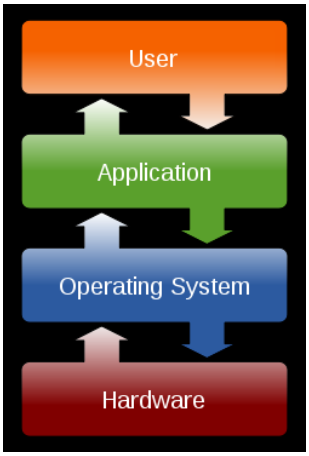
Operating System 2 – About Linux

Software	
Operating Systems	**Application Programs**
1. Used to control computer hardware 2. Acts as an interface between application programs and hardware 3. Allows all the applications to share hardware resources	1. Are used for special purposes such as writing documents, editing photos, creating videos, etc. 2. Rely on an operating system to receive input or display output on hardware devices
Examples: *Linux, Windows (98, XP, Vista, 7, 8), Mac OSX, iOS, Android, etc.*	**Examples:** *Microsoft Office Suite (Word, Excel, PowerPoint), Notepad, Calculator, etc.*



The role of the operating system in a computer

Linux Features	
Multi-user	More than one user can use a Linux machine at the same time
Multitasking	A single user can run more than one application or process at the same time
Timesharing	Linux divides the processor's time equally for all jobs and users
Modular	The functions available in Linux are divided into **modules**
Portable	Linux can be used on all computer architectures
Strong Security	Linux protects user information from being accessed by other users and those not authorized to use the Linux machine. The administrator account (called **superuser**) is authorized to set access permissions for other users.
Excellent Communication Features	Users can communicate with other users on the same machine or with users around the world connected to the same network
Network Orientation	Linux is extremely popular on the Internet, and many companies use it for their internal network

Linux Components		
Kernel	**Shell**	**File System**
The core part of Linux. Everything related to hardware is controlled by the kernel	*Allows users to enter commands in Linux (it is the black screen we use)*	*Allows users to organize files into directories for data management*
• Manage machine memory by allocating it to running processes • Schedule process times for the CPU • Organize data transfer within the machine • Enforce access permissions for all users • Carry out user instructions entered using the shell, and returning any requested information	• **Write shell scripts:** The shell comes with its own programming language • **Define command aliases:** An alias is an alternative name you can give to a command • **Edit the command line:** After entering a command you can make modifications to it	The directory at the top of the file systems is called **root**. There are 4 types of files in Linux: 1. ***Ordinary Files:*** Used to store information 2. ***Directory Files:*** These contain a list of file and directory names 3. ***Special Files:*** Represent physical devices, such as a printer 4. ***FIFO Files (Pipes):*** Allow commands to be chained (piped) together A file name that begins with a dot (.) is considered by Linux as a hidden file. We specify the location of a file or directory using 2 forms of pathname: • **Absolute pathname:** Begins from the root directory • **Relative pathname:** Begins from under the current directory