

OPERATING SYSTEM ARCHITECTURE

CATEGORIES OF SOFTWARE

A machine's software can be divided into two categories:

- **Application software** are programs that execute a specific task
- **System Software** provides a platform for application software to be run on and manages hardware (acts as an infrastructure)

The System software can be divided into two categories:

- The operating system itself
- **Utility software** is a program that maintains a computer's system through optimizing resources or keeping the system secure and isn't included in the operating system.
(Antivirus)

Application software

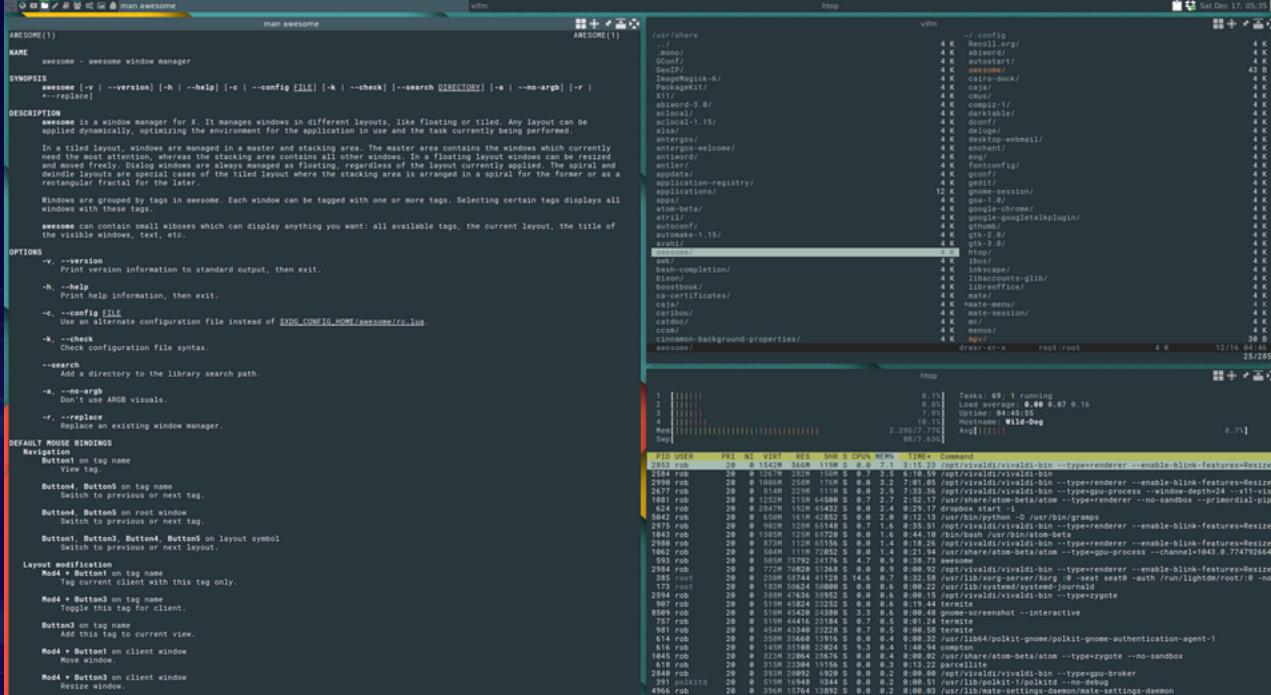
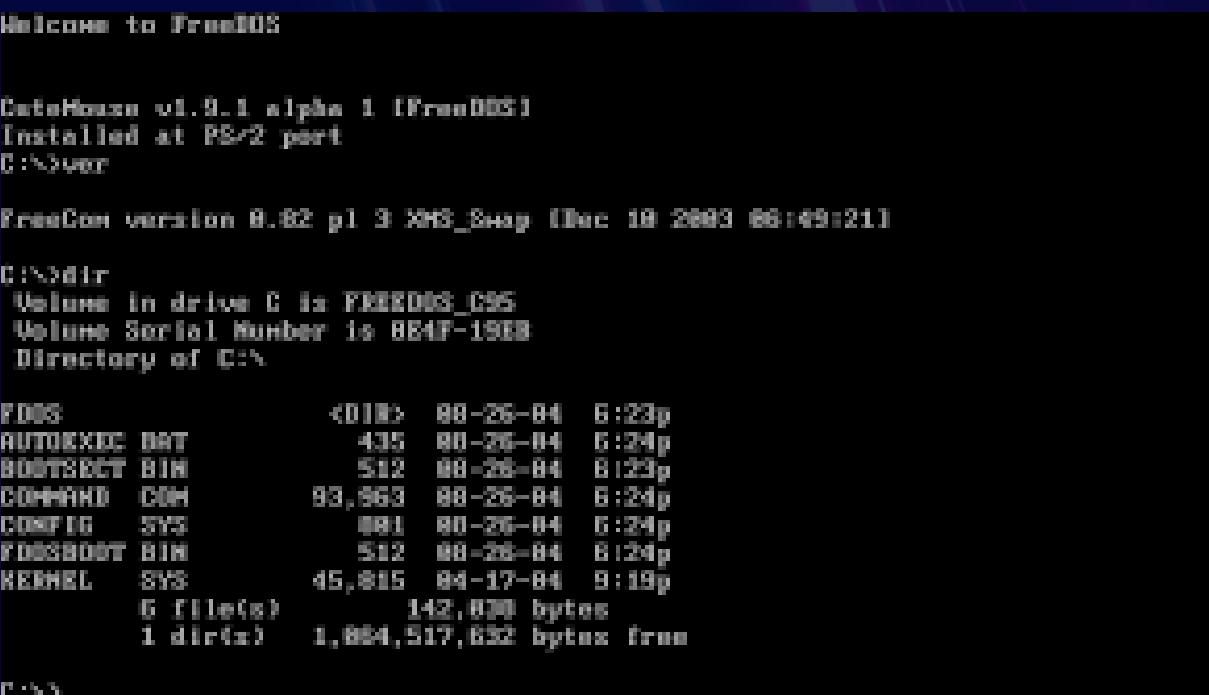


System Software



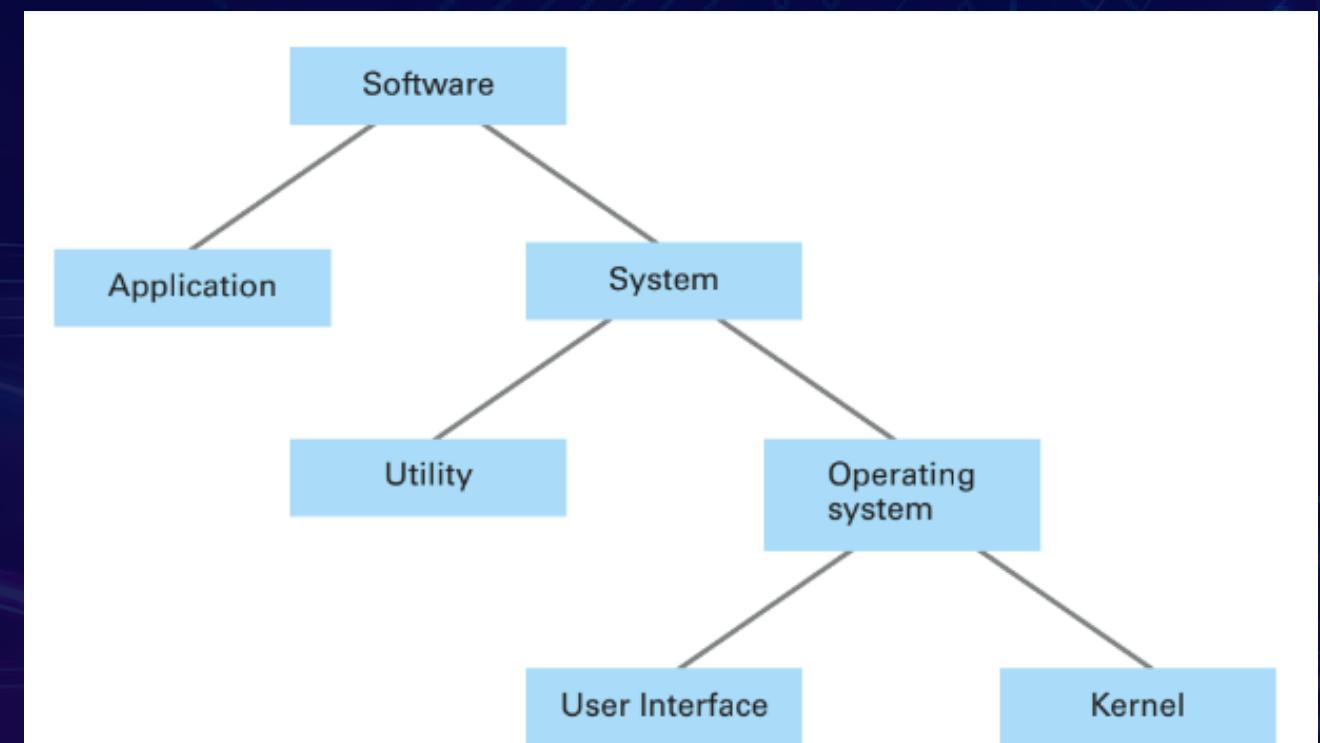
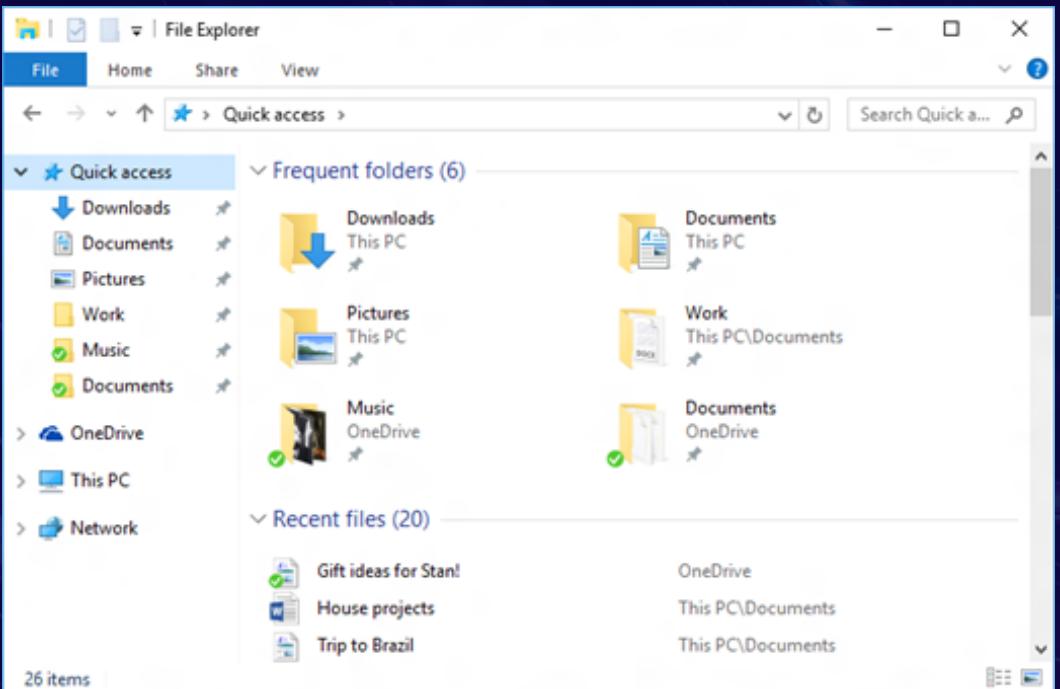
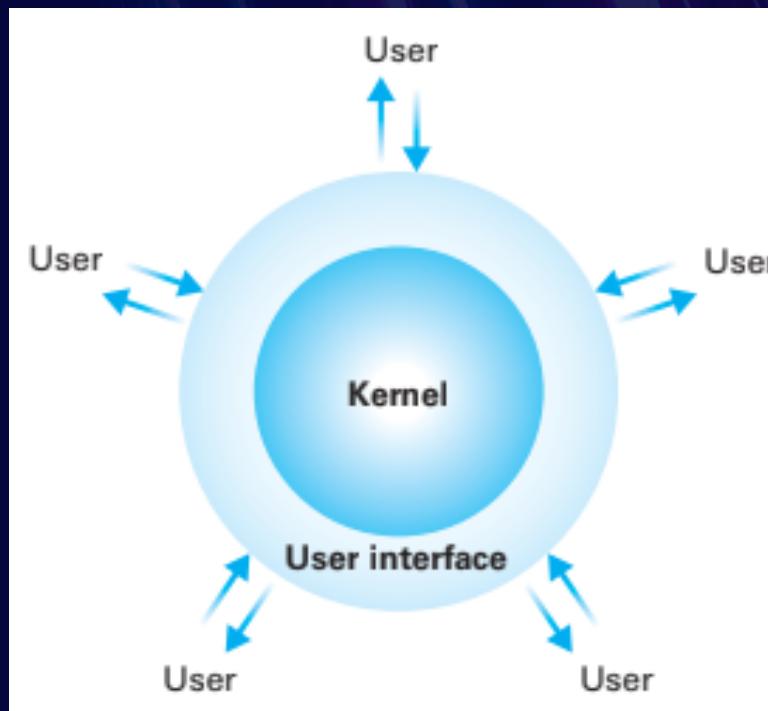
COMPONENTS OF AN OPERATING SYSTEM

- The **User Interface** is a part of the operating system that handles communication from a user
 - **Shells** (an older version of UI's) allow users to control their operating system using textual messages (commands)
 - **Graphical user interface (GUI)** is more modernly used and allow easier user interaction via menus, pictures and icons.
 - A **window manager** handles how different windows created by applications share the screen and tracks which gets user input



COMPONENTS OF AN OPERATING SYSTEM Cont.

- The internal part of an operating system is called the **kernel** and it performs basic functions. The kernel is an essential foundation to a computer's OS
- **File Manager** is a component of kernel which coordinates the use of the computer's mass storage facilities
- Users can group files into one container (**Directory or Folder**) and a chain of directories stored within each other is called a **directory path**
- **Device Drivers** control a hardware device attached to a computer and allows the operating system or application to be able to use it.
- **Machine Manager** allocates the computer's use of main memory

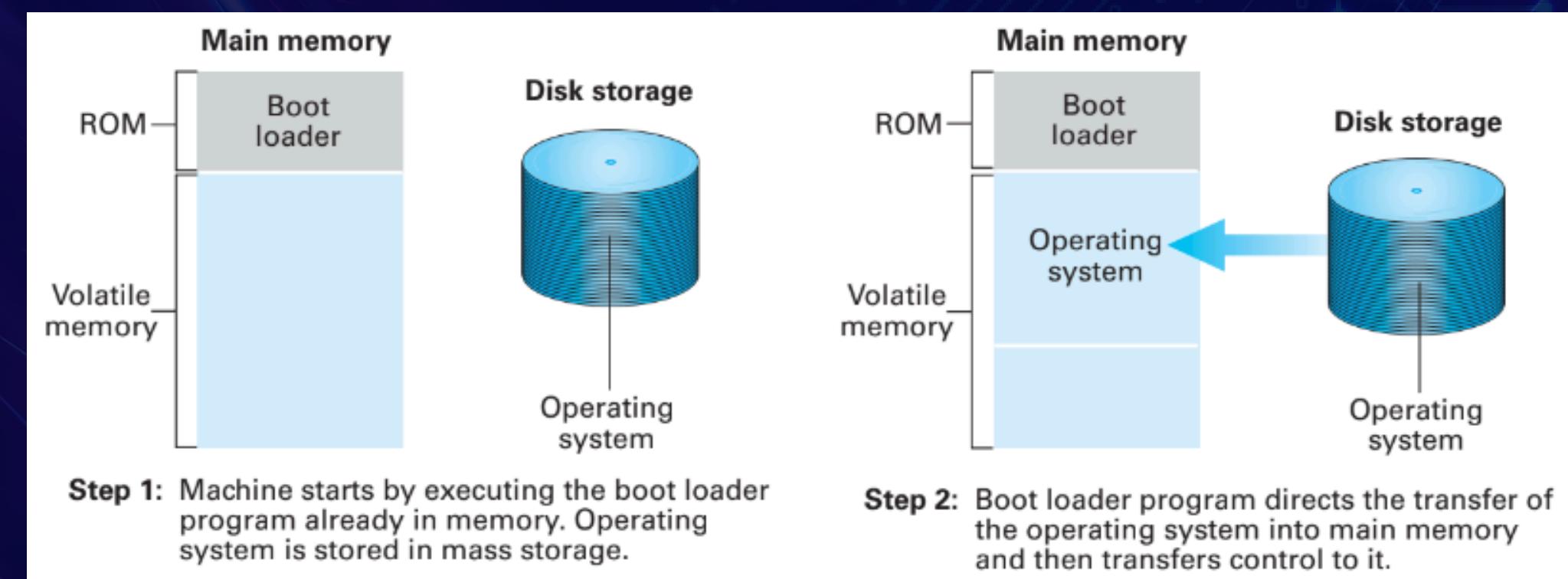


COMPONENTS OF AN OPERATING SYSTEM CONT.

- **Paging** is the rotation of **pages** (bit patterns/data) back and forth between the main memory and mass storage that creates the illusion of having more memory space on the computer (**Virtual Memory**)

GETTING IT STARTED

- **Boot strapping or Booting** is a procedure that transfers the operating system from mass storage (where it is permanently stored) to the main memory (which is empty when the computer is turned on)
- **Read-Only Memory (ROM)** is a computer storage that contains non-volatile, permanent data that can only be read and not changed
- The **boot loader** is stored with the ROM and its primary goal is to load the operating systems kernel into main memory





THANK YOU
FOR YOUR TIME