**Linux Basics**

**Linux Introduction**

**Linux** is a Unix like operating system. It is open source and free. We might sometimes use the word "Unix" instead of Linux.

A user can interact with Linux either using a '**graphical interface**' or using the '**command line interface**'.

Learning to use the command line interface has a bigger learning curve than the graphical interface but the former can be used to automate very easily. Also, most of the server side work is generally done using the command line interface.

# Linux Operating System

The operating system is made of three parts:

**The Programs**

A user executes programs. AngryBird is a program that gets executed by the kernel, for example. When a program is launched, it creates processes. Program or process will be used interchangeably.

**The Kernel**

The Kernel handles the main work of an operating system:

1. Allocates time & memory to programs
2. Handles File System
3. Responds to various Calls

**The Shell**

A user interacts with the Kernel via the Shell. The console as opened in the previous slide is the shell. A user writes instructions in the shell to execute commands. Shell is also a program that keeps asking you to type the name of other programs to run.

# Linux Files & Processes

Everything in Unix is either a file or a process.

**Process**

When you run a program, a process is created. Every process is identified by a number called process ID. To check the processes you are running, execute "ps" command on the shell. You can think of the process ID to be a sequence number given by the operating system. It may be different at different execution of the same program.

**File**

A file is a sequence of data. A file could be created by users using word processors or text editors or by the program to keep the information. A program is kept in the form of a file and when it is run by the kernel, it loads as a process.

A file is generally written on the disk so that it exists even after the computer restarts. It is saved in a disk - either hard disk drive (HDD - cheaper and slower) or solid state drive (SSD - faster but costlier).

A file is identified by a name called file path. In Unix, everything is represented as file:

1. Devices such as Mouse, Keyboard
2. Programs are saved as file
3. Disk and Monitor