**Inside Linux**

* **Kernel**
* The core of the UNIX system. Loaded at system start up (boot). Memory-resident control program.
* Manages the entire resources of the system, presenting them to you and every other user as a coherent system. Provides service to user applications such as device management, process scheduling, etc.
* Example functions performed by the kernel are:
* Managing the machine's memory and allocating it to each process.
* Scheduling the work done by the CPU so that the work of each user is carried out as efficiently as is possible.
* Accomplishing the transfer of data from one part of the machine to another
* Interpreting and executing instructions from the shell
* Enforcing file access permissions
* You do not need to know anything about the kernel in order to use a UNIX system. These details are provided for your information only.
* **Shell**
* Whenever you login to a Unix system you are placed in a shell program. The shell's prompt is usually visible at the cursor's position on your screen. To get your work done, you enter commands at this prompt.
* The shell is a command interpreter; it takes each command and passes it to the operating system kernel to be acted upon. It then displays the results of this operation on your screen.
* Several shells are usually available on any UNIX system, each with its own strengths and weaknesses.
* Different users may use different shells. Initially, your system adminstrator will supply a default shell, which can be overridden or changed. The most commonly available shells are:
* Bourne shell (sh)
* C shell (csh)
* Korn shell (ksh)
* TC Shell (tcsh)
* Bourne Again Shell (bash)
* Each shell also includes its own programming language. Command files, called "shell scripts" are used to accomplish a series of tasks.
* **Utilities**
* UNIX provides several hundred utility programs, often referred to as commands.
* Accomplish universal functions
* editing
* file maintenance
* printing
* sorting
* programming support
* online info etc.
* Modular: single functions can be grouped to perform more complex tasks