

UNIX

→ UNIX is an operating system which was first developed in the 1960s, and has been under constant development ever since.

→ By Operating System, we mean the suite of programs which make the computer work.

→ It is a stable, multi-user, multi-tasking system for servers, desktops and laptops.

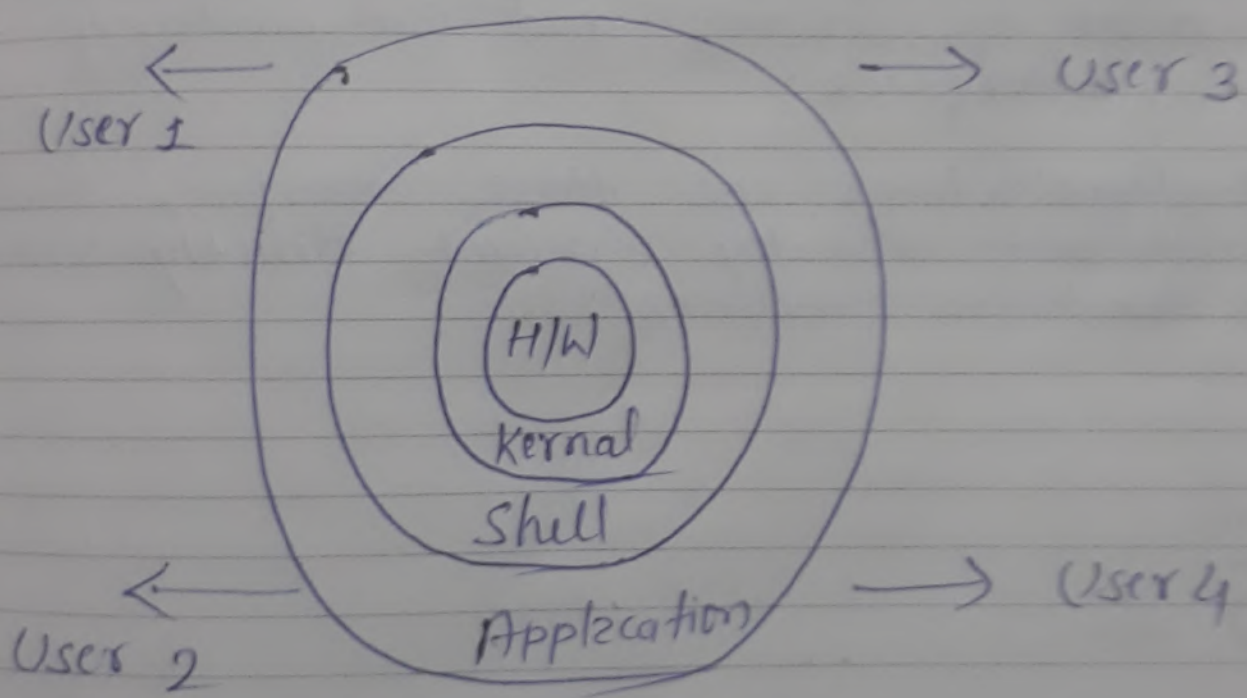
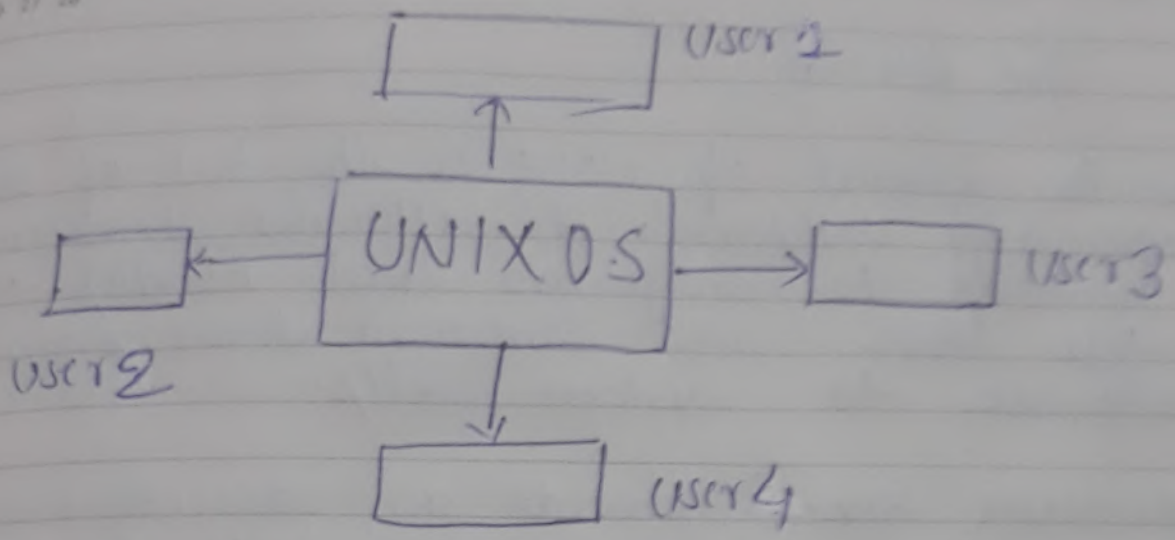
→ UNIX system also have a graphical user interface (GUI) similar to Microsoft Windows which provides an easy to use environment.

Types of UNIX

→ There are many different versions of UNIX, although they share common similarities. The most popular varieties of UNIX are Sun Solaris, GNU/Linux and Mac OS X.

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UNIX Architecture

The Kernel

→ The kernel of UNIX is the hub of the operating system. It allocates time and memory to programs and handles the file store and communications in response to system calls.

→ UNIX kernel provide an execution environment in which applications may run. Therefore, the kernel must implement a set of services and corresponding interfaces.

→ Applications use those interfaces and do not usually interact directly with hardware resources.

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The shell

→ The shell acts as an interface between the user and the kernel. When a user logs on, the login program checks the username and password, and then starts another program called the shell.

→ The shell is a Command Line Interpreter (CLI).

→ It interprets the commands the user types in and arranges for them to be carried out.

→ The commands are themselves programs: when they terminate, the shell gives the user another prompt (% on our system).

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Files and Processes

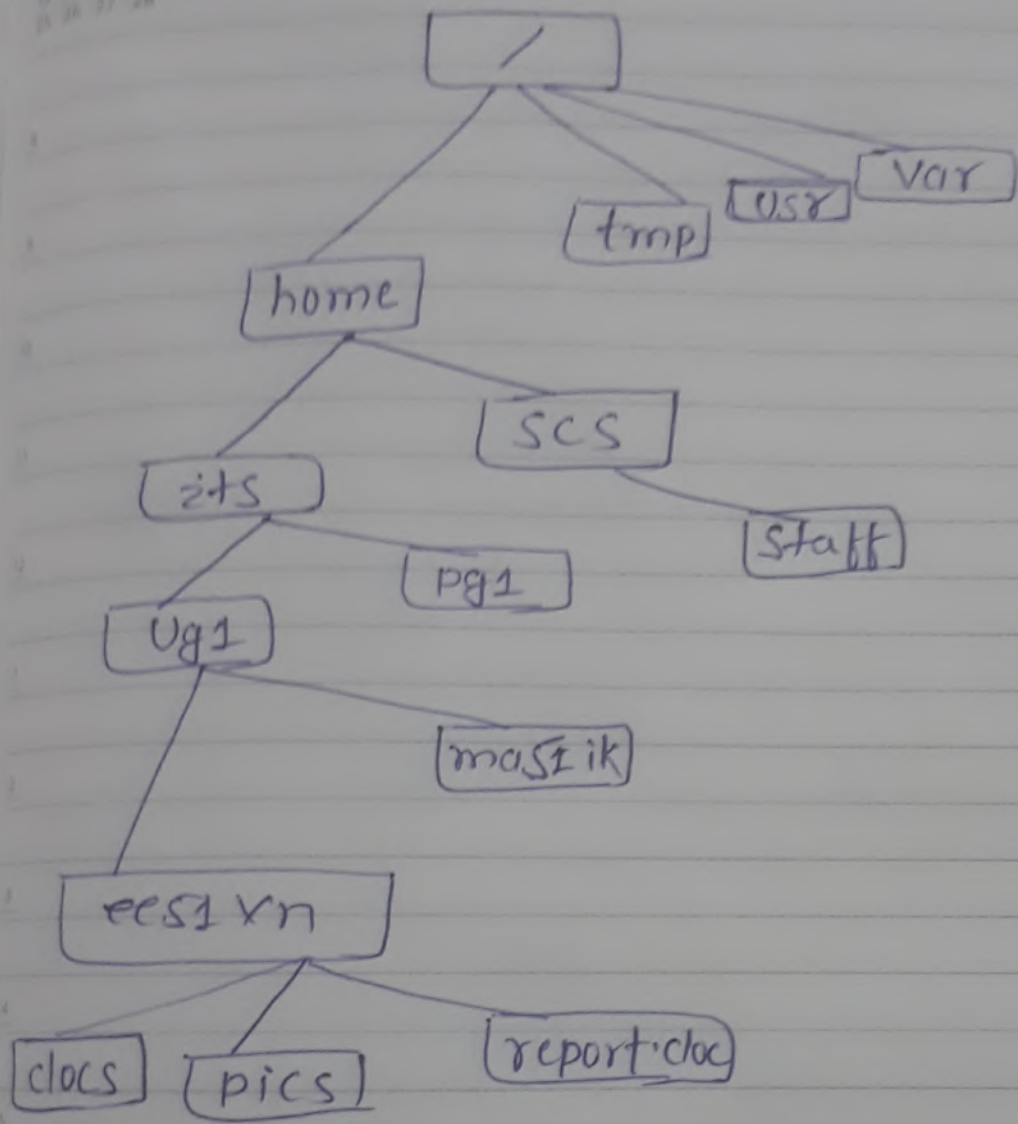
→ Everything in UNIX is either a file or a process.

→ A process is an executing program identified by a unique PID (process identifier).

→ A file is a collection of data. They are created by users using text editors, running compilers etc.

The Directory Structure

All the files are grouped together in the directory structure. The file-system is arranged in a hierarchical structure, like an inverted tree. The top of the hierarchy is traditionally called root (written as a slash /)



In the diagram above, we see that the home directory of the Undergraduate student "ees1vn" contains two sub-directories (docs and pics) and a file called report.doc.

The full path to the file report.doc is
"/home/zts/ug1/ees1vn/report.doc"