Introduction to UNIX/Linux

What is UNIX?

- Very powerful and flexible operating system
- Developed by Bell labs in the late 60s for programmers
- Used extensively in all spheres of technology
- Can coordinate the use and sharing of computational resources
- Allows easy multi-user access

What is Linux?

- Linux is a free, open-source operating system based on UNIX.
- Same components as the original, but in actively development by the open source community
- Distinct distributions of Linux exist, e.g. Redhat, CentOS, Ubuntu, Fedora etc.
- There are 2 ways to work with the Linux (or UNIX) system –
    a. The CLI -> Command Line Interface
    b. The GUI (pronounced gooey) -> Graphical User Interface

What are the components?

Functionally organized into three levels:

The kernel: schedules tasks and manages storage (the “brain” of the system)

The shell: interprets users' commands for appropriate action by the kernel

The tools and applications: software offering additional functionality

What is a Shell?

- Independent of the operating system
  - Dozens of shells have been developed throughout UNIX history.
  - The first major shell was the “Bourne shell” (named after its inventor, Steven Bourne).
- The most commonly used shell is **bash**; bash stands for “bourne again shell”
  - An open source replacement for the bourne shell.
  - **This is what we will be working with today on the VM.**

What are Commands?

- Executable programs
- Run in and interpreted by the shell
- “Command line interface” = typing a command + any other relevant information at the prompt and pressing enter