



<http://en.wikipedia.org/wiki/Unix>, <http://en.wikipedia.org/wiki/Tux>

What is UNIX?

- ✦ Unix is an operating system
- ✦ It was originally developed at Bell labs in the late 60s for programmers
- ✦ Easily coordinates the use and sharing of a computer's (or a system's) resources and allows multi-user capacity, among other features

Why UNIX?

- ✦ Unix is **stable**, **efficient** and **powerful**
- ✦ It is very widely used
- ✦ Can easily handle complex tasks on large datasets
- ✦ Repetitive tasks can be very fast and very easy

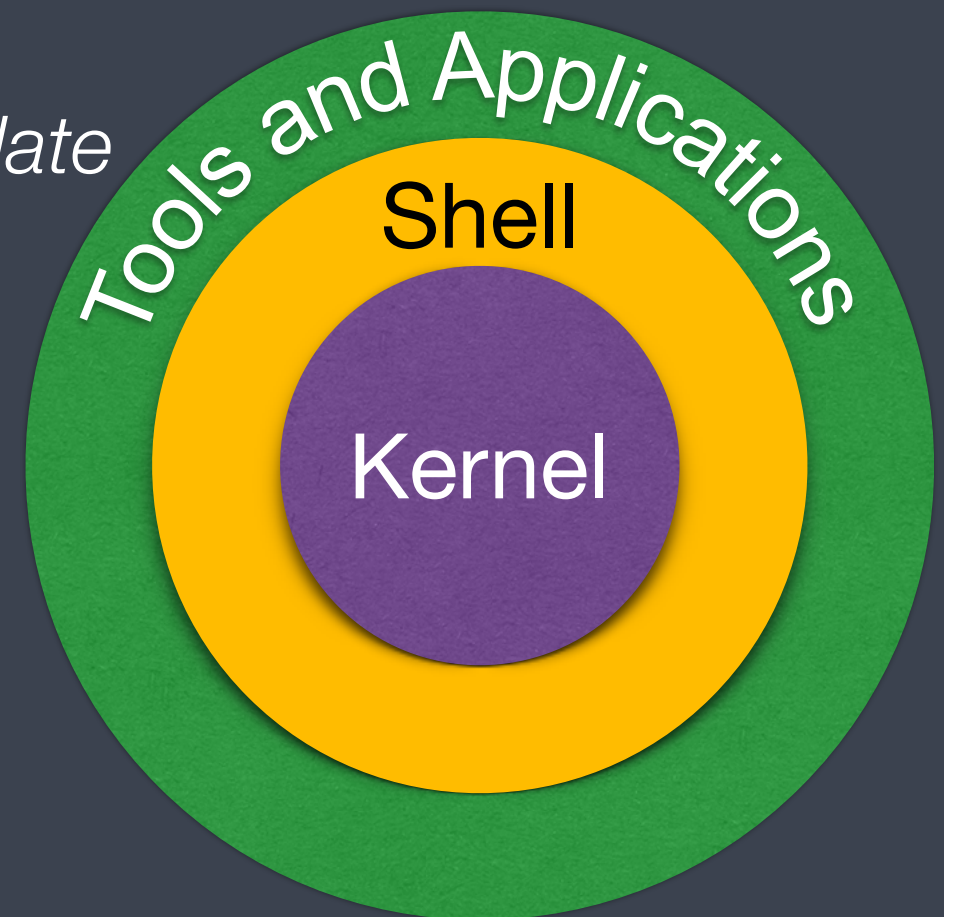
Bioinformatics:

- ✦ A large proportion of NGS-analysis tools are created for Unix
- ✦ Computational resources (e.g. clusters) that can handle large datasets require a working knowledge of Unix

Components

The Unix system is functionally organized at three levels:

- ♦ **The kernel**, which schedules tasks and manages storage: the brain of the system
- ♦ **The shell**, *an interpreter that helps translate our input into computer language*
- ♦ **Utilities, tools and applications**



The “shell”

- ✦ The shell (interpreter) is independent of the operating system, but essential
- ✦ Dozens of shells have been developed throughout UNIX history
- ✦ “Bourne shell,” named for its inventor, Steven Bourne, was the first major shell
- ✦ The most commonly used shell is **bash**; bash stands for “**b**ourne **a**gain **s**hell”

Linux

- ✦ Linux is a free, open-source operating system based on Unix
- ✦ It has the same components as the original, but the open source community is involved in active development of various distinct distributions of Linux



ubuntu[®]



fedora^f



These materials have been developed by members of the teaching team at the Harvard Chan Bioinformatics Core (HBC). These are open access materials distributed under the terms of the Creative Commons Attribution license (CC BY 4.0), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

