ECE437/CS481

INTRODUCTION TO OS
LINUX HISTORY

Chapter 18

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Brief history of Linux

- Linux is named after Linus Torvalds, who wrote the first Linux kernel in 1991.
- At the time, he was a Computer Science undergraduate student at the University of Helsinki, Finland, and wanted a hobby project which he intended to release as a free OS.
- Linus retains control of the Linux kernel to this day, through a small company.
- He had some technical differences with Minix and with its creator (Professor Andrew Tannenbaum, Computer Science, at a university in the Nederland), and so Linus wanted to do it his way.

Brief history of Linux

- Others found the idea of interest, and began to help Linus with the project.
- Elements of GNU became essential parts of the system, such as gcc.
- Linux is released under the GPL, the Free Software Foundation's General Public License.
- This is sometimes called the "copyleft" (as opposed to "copyright").
- When you install Red Hat, Mandrake, Caldera, Yellow Dog, Yggdrasil, Debian, Ubuntu, or Slackware, you are installing a distribution ("distro") of Linux.
  - ✓ You're paying only for the package, since Linus makes no money from the use of his kernel at all.

Brief history of Linux

- Externally (i.e., at the interface or API level), Linux is bit-for-bit compatible with Unix (and the POSIX standard).
  - ✓ Portable Operating System Interface (POSIX) is a family of standards specified by the IEEE Computer Society for maintaining compatibility among operating systems (e.g., all the Unix-like operating systems)
  - ✓ POSIX defines the APIs, command line shells, and utility interfaces

- Internally, it is a fresh ("clean room") construction not bound by the Unix copyright.

Brief history of Linux

- GNU/Linux is a multi-user, multi-program OS, and supports multi-processor architecture
  - Several users can log in locally and/or remotely to the Linux workstation/server and work concurrently.
  - Allows for running multiple applications using preemptive multi-program
  - The Linux kernel currently supports running multiple concurrent CPU's on any given system

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- Components of a full Linux system