CPSC 822 Case Study in Operating Systems

Robert Geist

This is a case study of the kernel of the Linux operating system, which is a freely distributed UNIX clone. Many of the class periods are devoted to reviewing kernel source code and deducing operating system structure therefrom. Labs call for students to make major changes to the operating system, which usually includes building a new kernel, in order to enhance performance on particular workloads.

PREREQUISITES: a course in the principles of operating systems, a strong ability to read and write non-trivial C code, and significant user-level experience with Linux or another UNIX derivative

TEXTS:

- Love, R., Linux Kernel Development, 3rd ed., Addison-Wesley, 2010.
- (optional) Corbet, Rubini, Kroah-Hartman, Linux Device Drivers, 3rd ed., O'Reilly, 2005.
- (optional) Kernighan, B. and Ritchie, D., The C Programming Language, Prentice-Hall, 1978.
- (optional) Kernighan, B. and Pike, R., The UNIX Programming Environment, Prentice-Hall, 1984.

ATTENDANCE:

1. Attendance is not required. There will be no roll call.
2. Substantial project information will be provided in class lectures.
3. No individual lectures will be given.

GRADES:

- 3 major programming projects, each counts 15%
- Exams:
  - Midterm counts 20%
  - Final counts 25%
- Lab participation counts 10%