Presentation of the class

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CSC4508 – Operating systems
2021–2022
1 Presentation of the class

Objectives of the class:

- Understand the internals of operating systems
- Know how to interact with the OS from a program

Structure of the class:

[U] “userland” oriented sessions

[K] “kernel” oriented sessions

[G] “more general” sessions
1.1 Organization

1. Processes
   CI1 [U] Threads
   CI2 [U] Concurrent programming
   CI3 [G] Synchronization
   CI4 [K] System calls
   CI5 [K] Interruption and scheduling
   CI6 [K] Sprint: finalization of the scheduler

2. Memory
   CI7 [U] Virtual memory
   CI8 [K] Memory Management Unit
   CI9 [G] Architecture
   CI10 [K] Sprint

3. Input/Output
   CI11 [U] Input/Output
   CI12 [U] Synthesis: mini-project
   CI13 [K] File systems
   CI14 [K] Sprint

CI15 Exam (lab)
1.2 Kernel sessions: XV6

During the [K] sessions, you will develop an OS

- Based on the xv6 OS
- development of new OS mechanisms
- sprint sessions:
  - finalization of development
  - evaluation by teachers
1.3 Evaluation

Evaluation:

- 20% - Continuous assessment during sprints:
  ♦ “how did you implement this mechanism of the OS?”
  ♦ “what happens if X?”

- 80% - graded lab exam with several parts:
  ♦ course question(s)
  ♦ explain how you implemented an OS mechanism
  ♦ develop an application
1.4 Evaluation of the class

- At the end of the class, students evaluate the class.
- Objective: improve the class