Presentation of the class

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Contents

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

Organization

- 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
- Memory
  - CI7 [**U**] Virtual memory
  - CI8 [**K**] Memory Management Unit
  - CI9 [**G**] Architecture
  - CI10 [**K**] Sprint
- Input/Output
  - CI11 [**U**] Input/Output
  - CI12 [**U**] Synthesis: mini-project
  - CI13 [**K**] File systems
  - CI14 [**K**] Sprint
- [CI15] Exam (lab)

Kernel sessions: XV6

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

- Based on the **xv6** OS
- On the computer architecture **RISC-V**
- Development of new OS mechanisms
- *sprint* sessions:
  - finalization of development
  - evaluation by teachers

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

Evaluation of the class

- At the end of the class, students evaluate the class.

- Objective: improve the class