

# Presentation of the class

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- 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