MI2.01a System Architectures

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Course Introduction

Goals

- Understand basic components of an operating system (OS)
  - Process, thread and scheduling algorithms
  - Synchronization algorithms
  - Inter-Process communication principles
  - Memory management mechanisms
- Understand low-level networking using sockets
- Do the project
  - and (hopefully!), pass the exam

Content

- OS Concepts
  - Process, thread
  - Synchronization
  - IPC
  - Memory Management
- Networking
  - Socket programming

Format

- 2.5 ECTS = 25 hours
- Lecture / Practical work : 12.5h / 12.5h
- Prerequisites: C Programming
- Environment: Linux/Mac (Windows is NOT used)
- Assessment:
  - Project / Final Exam

Policy

- Collaborations!
  - During exercises
  - Not in the project
  - Nor in the final exam

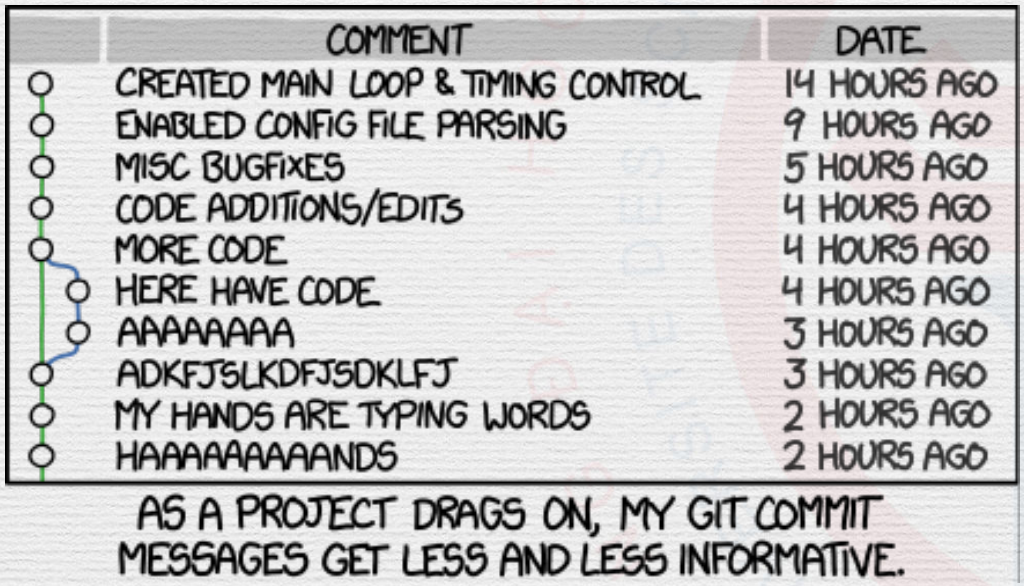
Labwork

- Several C Programs
  - Understand what you learnt
  - Show your ability to apply it to new problems
- Compilable on Linux/Mac
- Don't copy paste. I have checker tools ☺
- Should be well organized and well written

> *I will, in fact, claim that the difference between a bad programmer and a good one is whether he considers his code or his data structures more important.*
>
> *Bad programmers worry about the code. Good programmers worry about data structures and their relationships.*
>
> - Linus Torvalds

Labwork

- Git : Version Control System
- Github
  - Initial repository and instruction
  - https://github.com/SonTG/sa2020



Don't be lazy with your commit messages

Exams

- 3 sheets of A4 documents are allowed
- No laptop / mobile phone / internet
- No discussion, of course

References

- Books
  - Tanenbaum et al., Modern Operating Systems, 4th Edition, Pearson.
  - Computer Networks: A Systems Approach, 5th edition, by Larry Peterson and Bruce Davie