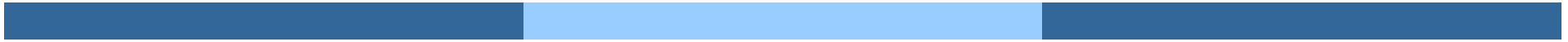
OS Lab Discussion 2023



Operating Systems

Wenbo Shen

Learning by Doing

- A full picture of design and implementation of operating systems
- Topics include Interrupts, system calls, context switches, virtual memory, synchronization, file systems
- Implementing a Linux0.11/0.12-like OS on RISC-V

- Lab manual
  - https://zju-sec.github.io/os23fall-stu/
- Lab source code repo:
  - https://github.com/ZJU-SEC/os23fall-stu

Labs-2022

Lab	Description	Score
0	环境熟悉qemu and environment	5%
1	系统启动boot and head.S	10%
2	时钟和终端timers and interrupts	10%
3	线程与调度kernel thread management, scheduling and context switch	15%
4	虚拟内存 1 virtual memory 1- enable mmu, va –> pa	20%
5	用户空间user space, syscall) user stack, user pc, pt_regs, implement getpid() syscall	20%
6	虚拟内存 2 virtual memory 2- page fault; write to mapped memory, trigger a page fault, setup mapping to physical page	20%
7	fork, 通过 fork 创建新的用户态 task	Bonus 10%

Labs-2023

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2	线程与调度kernel thread management, scheduling and context switch	15%
3	虚拟内存 virtual memory 1- enable mmu, va –> pa	15%
4	用户空间user space, syscall) user stack, user pc, pt_regs, implement getpid() syscall	20%
5	缺页处理 - page fault	20%
6	实现 fork，创建新的用户态 task	10%
7	File system	Bonus 10%

Grading

- Overall 100 points
  - Final Exam 50 pts
  - Lab0-6 50 pts

Deliverables

- All labs are individual projects
- Source code
- Detailed lab report
  - with screenshots
  - describe what you have done and learnt
  - Feedback
- courses.zju.edu.cn
  - Labs(projects), ~~homework~~
- Be sure on time!
  - A 20% penalty will be applied for each day of late submission

No Cheating

- No cheating
  - Don’t copy code and text
  - We run code similarity detection tools
  - 每个lab都会有代码查重
  - 针对一个lab，抄袭和被抄袭者本次lab零分
  - 涉及两个lab或以上者，抄袭和被抄袭者课程零分

Questions