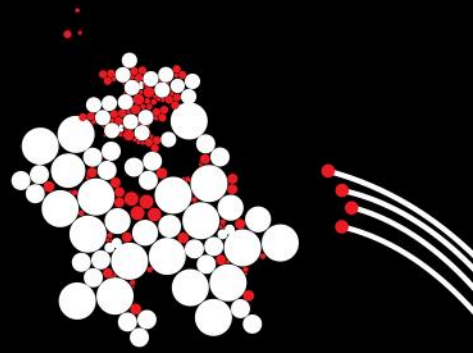
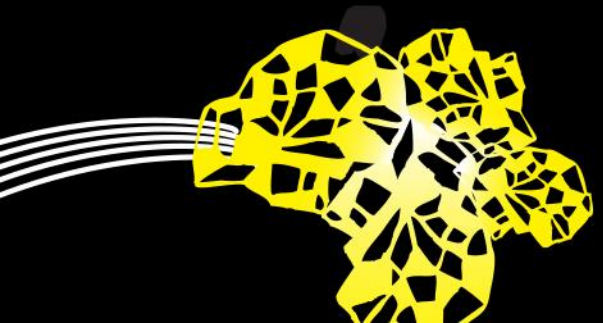
UNIVERSITY OF TWENTE.



OPERATING SYSTEMS

INTRODUCTION

ERIK TEWS <e.tews@utwente.nl>



OPERATING SYSTEMS

- 4 weeks of lectures (almost) and assignments
- In general:
  - Lectures Tuesday and Thursday 8:45-10:30
  - Lab sessions Tuesday and Thursday afternoon
- You can pass by
  - Scoring enough points in the assignments
  - Passing the exam

THE LECTURES

- Are already recorded and you find them on YouTube (link in Canvas)
- The real lectures (in the morning) are mostly Q&A sessions
- They will be recorded
- We might have a live-stream as well

THE LAB SESSIONS IN THE AFTERNOON

- You work on your assignments
- I and a few TAs support you with that
- No program on stage
- No recordings (or has anyone an idea how it should be recorded)

THE ASSIGNMENTS

- You get at least 100 assignments for the course (80 are online now)
- And you will be assigned to a TA
- You submit your answers online and you receive a grading for that
- And your TA will interview you about your answers roughly once per week
- The TA gives you a score which is then multiplied by the points for your assignments
- Did you already notice that not everyone has the same assignments?
- Please take notes how much time you spent with them

THE INTERVIEW

- Your TA will ask you questions about how you did your assignments
- The word „why“ and „how“ will appear probably quiet often
- It is your task to convince the TA that you did the assignments yourself and that you understood the relevant lecture topics
- The interview will take roughly 30 minutes
- Vague answers will not be accepted
- And you should also not think for too long about an answer
- Interviews start in week 2
- Signup opens soon

SECURITY

- In the final week, our topic will be security
- More assignments (20) will be added about this topic
- Also, we will add a video about that

SUBMIT EARLY

- We want you to start working now (not in 3 weeks)
- When you submit 10 or 20 answers until Tuesday 23:59 in week 2, 3 and 4, you get 1 or 2 bonus points for each week
- Submissions for assignments from the previous week you already received bonus points for are excluded

WHAT YOU NEED FOR THE COURSE

- Raspberry Pi (Version 4 preferred, the older ones are fine as well)
- Network cable and Ethernet jack on your laptop
  - buy a USB to Ethernet adapter when you don‘t have one
- Micro SD card for the Pi and an SD Card reader for your laptop
- USB cable to power the Pi from your computer or a power supply
- Mini-prototyping board, cables, resistors, LEDs
- An empty USB thumb drive

WHEN YOU DON‘T HAVE THAT

ADDITIONAL RULES

- Final submission deadline: **Monday October 28th, 23:59!**
- When you submit after the deadline, you loose 1 point per hour of delay

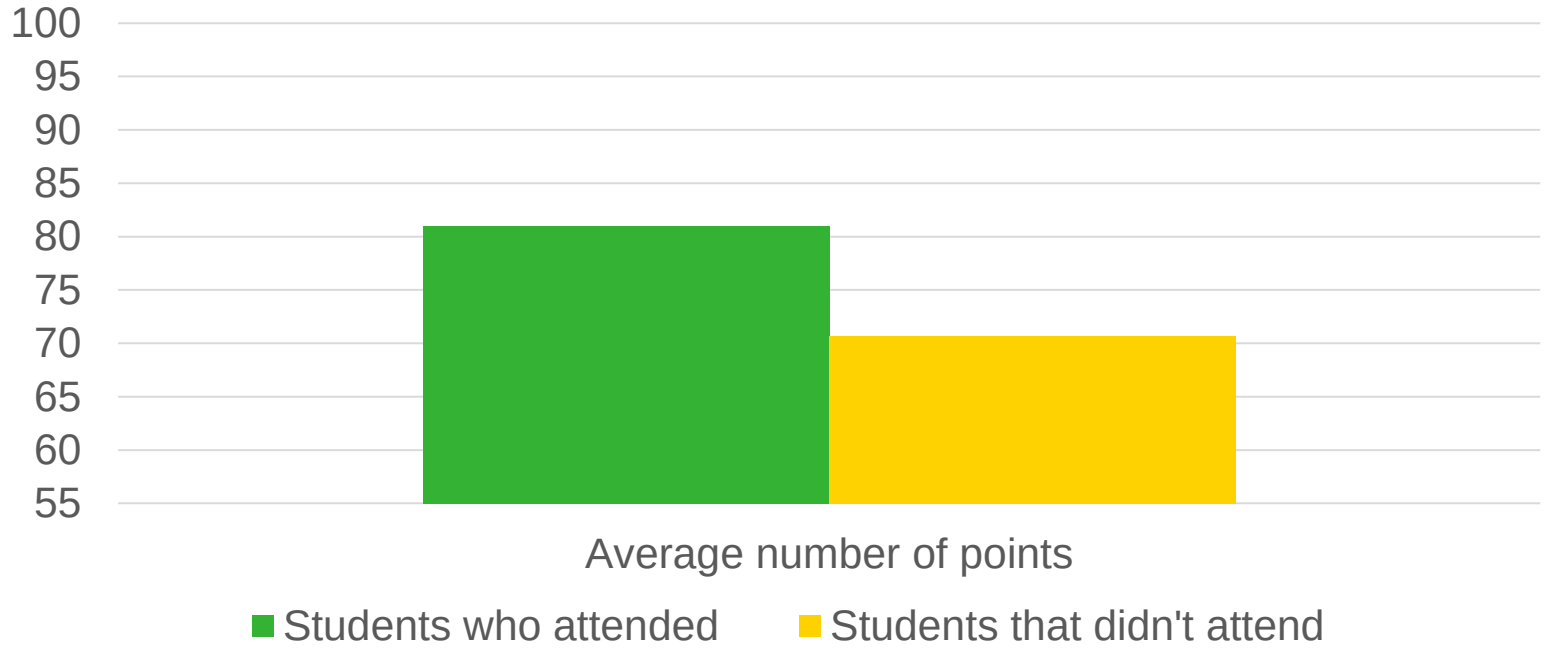
YOUR FINAL MARK

- The number of points from the interview/assignments / 10
- You need at least 55 points to pass
- The points are of course capped at 100
- When you fail the assignments, you have to attend the exam

ATTENDANCE

- Not mandatory for the lectures
- Not mandatory for the sessions in the afternoon
- Only mandatory for the interview with your TA

ONE MORE THING ABOUT ATTENDANCE



CANVAS

- Ís everyone on Canvas?
- Did you all join the „Attend OS as a CS student“ group?
- You may use the discussion forum
  - But don‘t post partial answers there

LINUX

- An Operating System
  - Some people say, it‘s just a kernel, a part of an operating system
- First version published in 1991
  - Based on older operating system designs
- Still being developed and used
  - Roughly 2/3 of all web servers run on Linux
  - Runs on a SmartWatch and on Supercomputers

WHY WE FOCUS ON LINUX FOR THIS COURSE

- Linux is very common
- Linux is open source
- Linux runs on a lot of different systems
- Linux is well documented (well, almost)
- Many other operating systems are similar
  - MacOS and iOS are also based on Unix (common history)
  - Windows 10 also supports a Linux environment

WHERE LINUX CANNOT BE USED (YET)

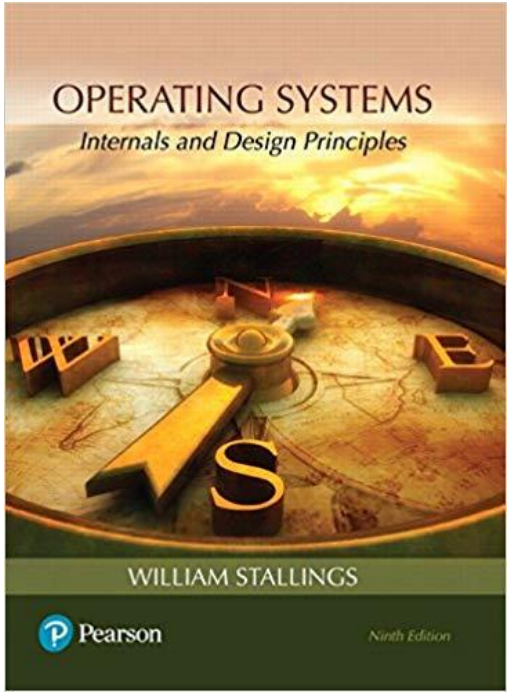
- Very resource constrained systems
- Some high security applications
- Certain environments with high requirements for certification
- Environments that do not allow GPL software

THE RASPBERRY PI

- Small computer
- Cheap
- Runs Linux
- Network connectivity, GPIO pins, USB, HDMI
- Can be powered with USB
- Everything is stored on a micro SD card
- Very open design, well documented and supported

FOUNDATIONS OF THIS COURSE

- Prof. Pieter Hartel
- Operating Systems: Internals and Design Principles by William Stallings



TWO MORE SPECIAL EVENTS

- Today in the afternoon
  - Setting up your Raspberry Pi
- Thursday afternoon
  - C-Tutorial

QUESTIONS?