Template Week 5 – Operating Systems

Student number:

Assignment 5.1: Unix-like

a) Find out what the difference is between UNIX and unix-like operating systems?

UNIX is de orginele operating system and unix like zijn nieuwere varianten van UNIX die open source code heeft.

b) Study the image above named UNIX timeline. Find out who Ken Thompson, Dennis Ritchie, Bill Joy, Richard Stallman, and Linus Torvalds are and what they have contributed to the development of UNIX or unix-like systems and to IT in general. **TIP!** English-language sources often contain more detailed information about these individuals.
Ken Thompson:
implemented the original Unix operating system. He also invented the B programming language, the direct predecessor to the C language, and was one of the creators and early developers of the Plan 9 operating system.
Dennis Ritchie:
He created, together with long-time colleague Ken Thompson, the Unix operating system, C programming language, and B programming language.
Bill Joy:
He played an integral role in the early development of BSD UNIX while being a graduate student at Berkeley,[1] and he is the original author of the vi text editor. He also wrote the 2000 essay "Why The Future Doesn't Need Us", in which he expressed deep concerns over the development of modern technologies.
Richard Stallman:
Stallman launched the GNU Project, founded the Free Software Foundation (FSF) in October 1985,[2] developed the GNU Compiler Collection and GNU Emacs, and wrote all versions of the GNU General Public License.
Linus Torvalds:
Created a new open source operating system for computers leading to the widely used Linux kernel".[4] He is also the recipient of the 2014 IEEE Computer Society Computer Pioneer Award[5] and the 2018 IEEE Masaru Ibuka Consumer Electronics Award.

c) What is the philosophy of the GNU movement?

The philosophy of the GNU movement emphasizes user freedoms, advocating that software should allow users to run, study, modify, and share it without restrictions. This approach promotes collaboration, transparency, and ethical use of technology, ensuring that software remains a communal resource for all.

d) Does Ubuntu as a Linux operating system conform to the philosophy of the GNU movement? Please explain your answer.

Yes it is very open source atleast more than windows

e) Find out what is the Windows Subsystem for Linux?

Het laat je linux runnen in windows.

f) Find out, which operating system family belongs to Android, iOS and ChromeOS?

Android - unix-like
IOS - unix-like
ChromeOS - unix-like

Assignment 5.2: Supercomputers and gameconsoles

a) Research on this site what supercomputers are used for and write a short summary of it:
https://www.computerhistory.org/timeline/search/?q=Supercomputer

Supercomputers zijn computers die gigantisch moeilijke berekeningen kunnen maken door ontzettend veel berekeningen tegelijk te maken deze computers worden ook gebruikt voor AI.

b) IBM is a company that has already built a number of supercomputers. One of them is IBM's Roadrunner. The CPU developed for this supercomputer was further developed at a later stage as the CPU for the PlayStation 3 console. Find out what a **PlayStation 3 cluster** is and what it was used for?

Heel veel playstation 3 om een grote computer te maken.

c) You can build a supercomputer by putting a few computers together in a cluster. Here's what Oracle did with a collection of Raspberry Pi's, for example:
https://blogs.oracle.com/developers/post/building-the-worlds-largest-raspberry-pi-cluster
What specific operating system is running on this cluster?

Oracle Linux for ARM.

d) Does Oracle's Raspberry Pi supercomputer appear in the list of the 500 fastest supercomputers in the world? Make a logical decision for this, without going through the entire list.
https://www.top500.org/lists/top500/list/2023/06/

Nee want ze hebben niet in de duizend cores.

e) What CPU architecture is used for the PlayStation 5 and Xbox Series X?
What operating systems run on these consoles?
What conclusion can you draw from the answer to the previous question?

Xbox system software
Orbis os

Assignment 5.3: Working with Windows

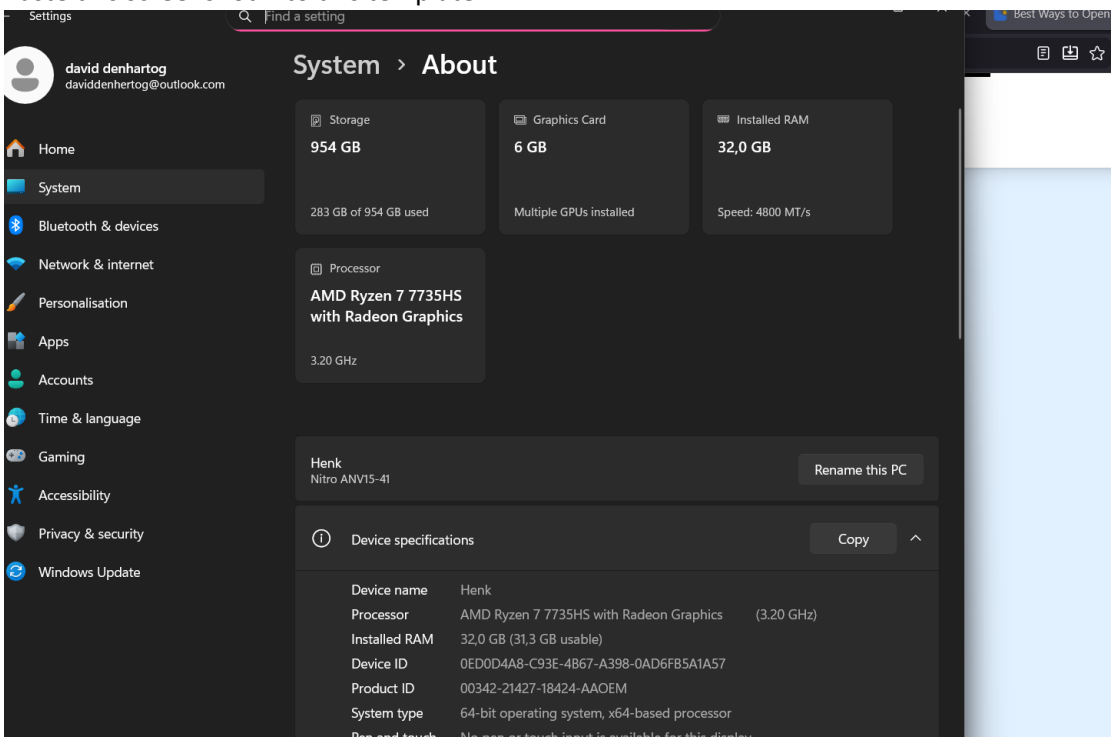
Take relevant screenshots of the assignments below

a) Practice for about 10 minutes with the ⊞ keyboard shortcuts combinations, skip the general shortcuts in this exercise. Take a look at which screens are opened.

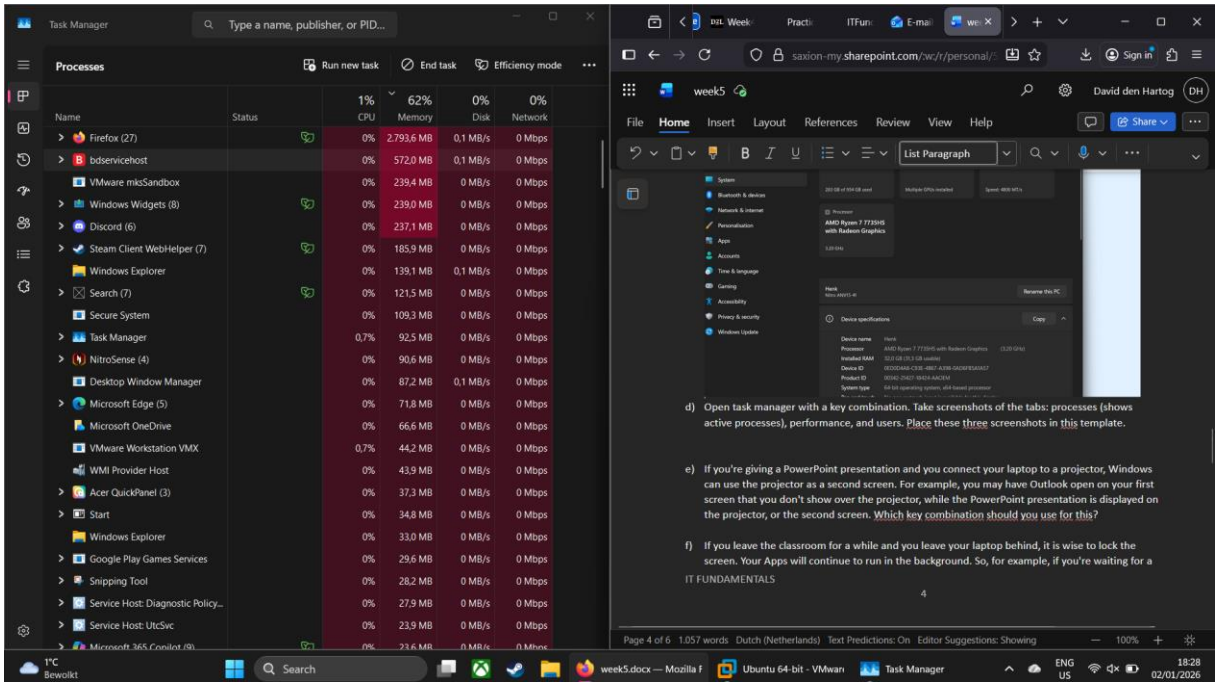
Quick settings
Hdr
Quick assist
Feedback hub
Voice typing

b) The file explorer can be opened with ⊞ + E, Which key combination could you also use?
Win + X

c) Open the system properties with a ⊞ key combination, take a screenshot of the open screen. Paste this screenshot into this template.



d) Open task manager with a key combination. Take screenshots of the tabs: processes (shows active processes), performance, and users. Place these three screenshots in this template.



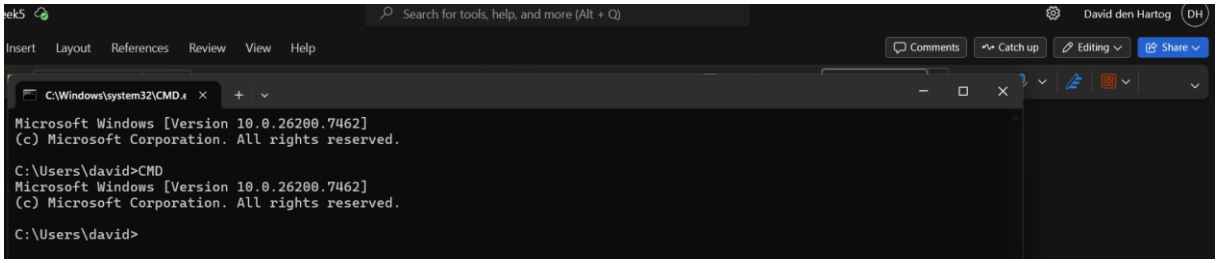
e) If you're giving a PowerPoint presentation and you connect your laptop to a projector, Windows can use the projector as a second screen. For example, you may have Outlook open on your first screen that you don't show over the projector, while the PowerPoint presentation is displayed on the projector, or the second screen. Which key combination should you use for this?

Windows + p

f) If you leave the classroom for a while and you leave your laptop behind, it is wise to lock the screen. Your Apps will continue to run in the background. So, for example, if you're waiting for a download that takes a while, lock the screen and get a cup of coffee. Which key combination do you use for this?

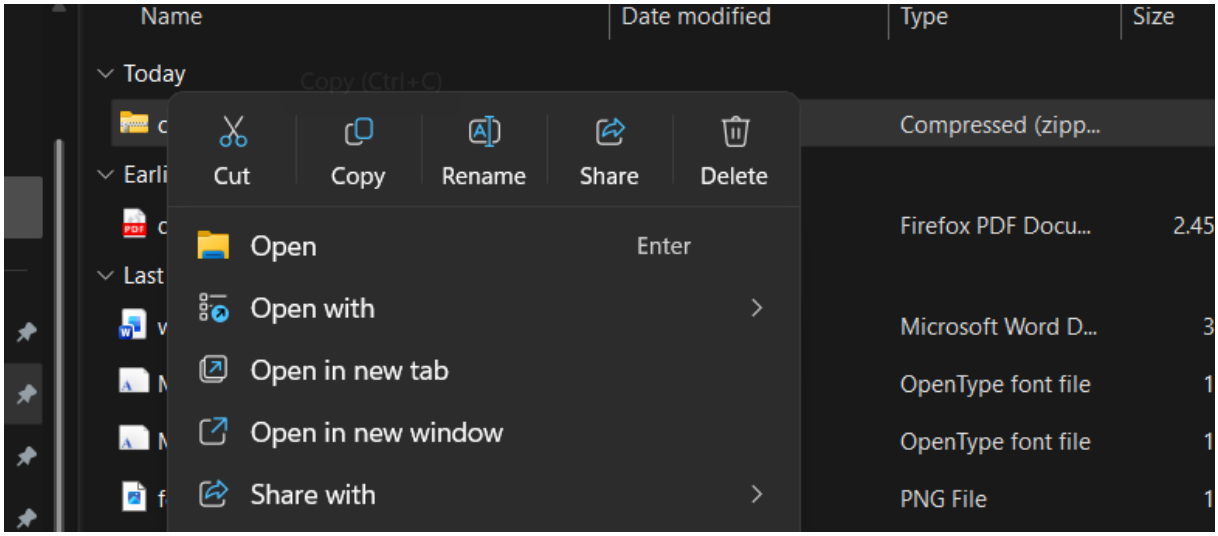
Windows + L

g) Open the Run screen with a key combination. On this screen, type CMD and press <enter>. Take a screenshot of this result and paste it into this template.

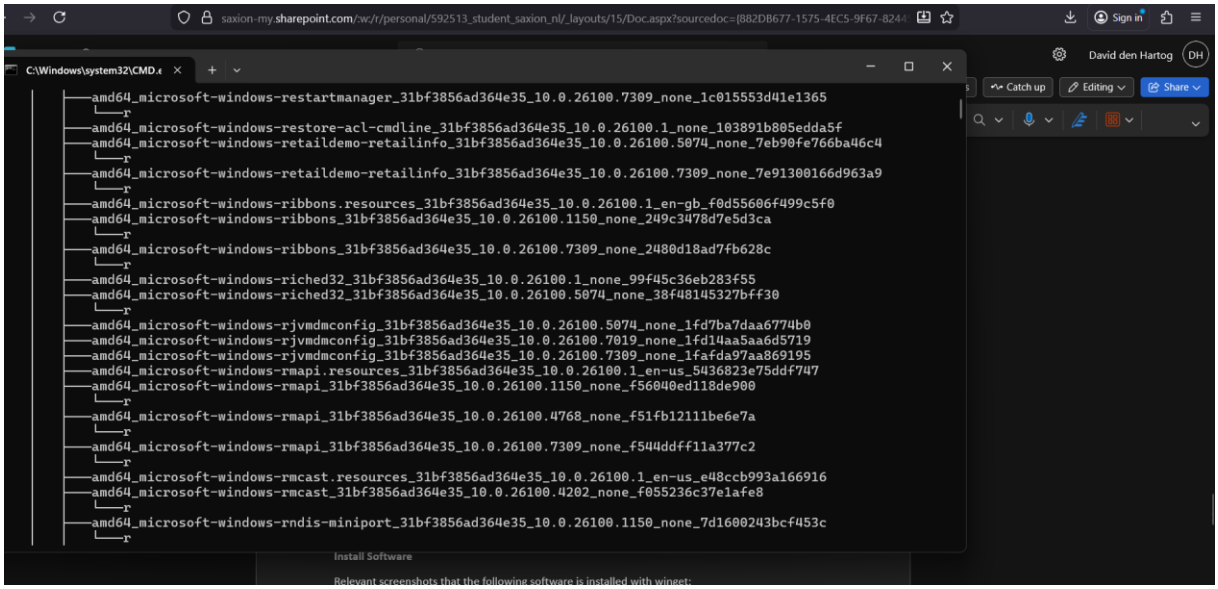


Working in the File Explorer

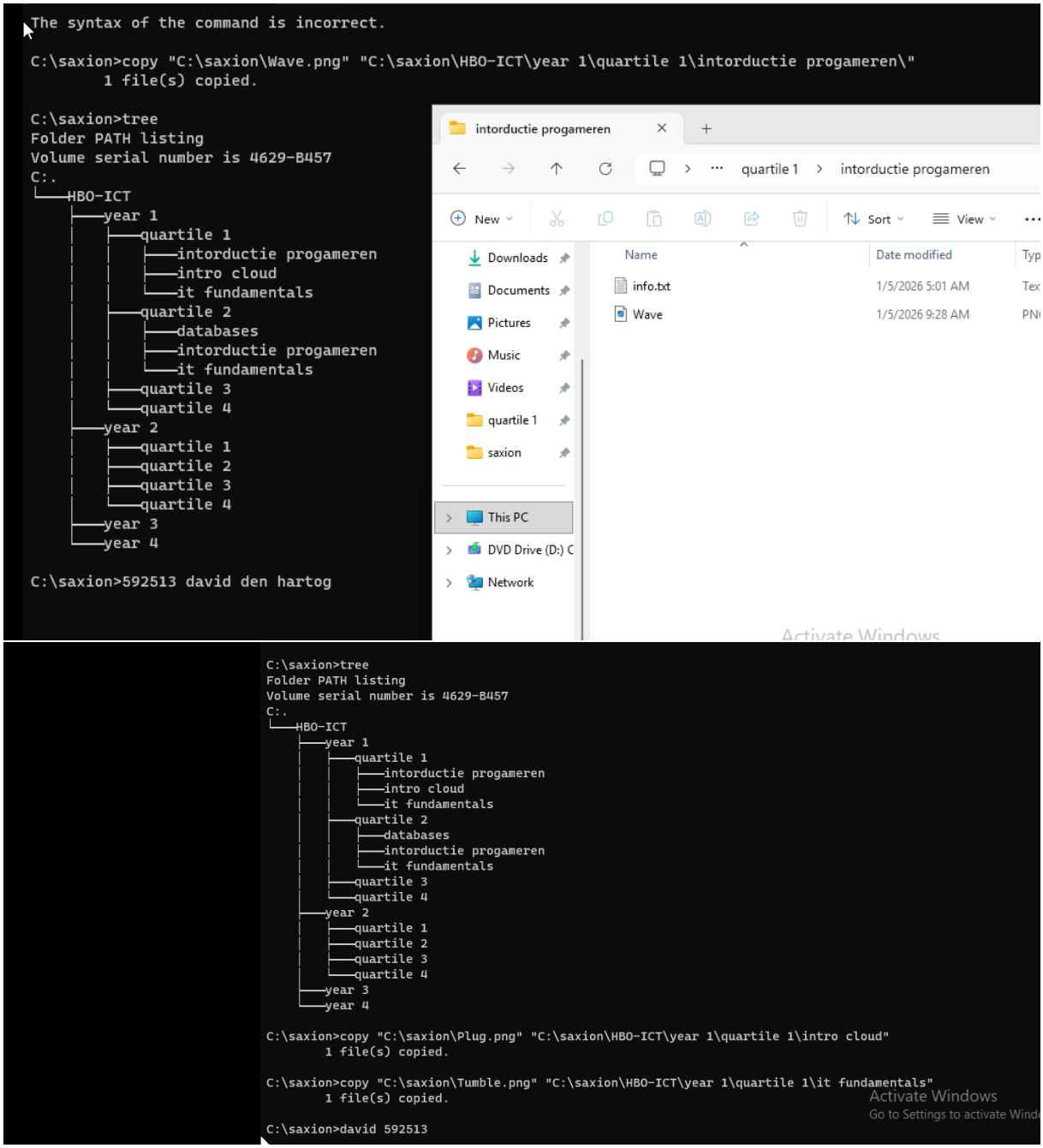
Relevant screenshots **copy** command:



Relevant screenshots **tree** command:



Relevant screenshots in the file explorer of the folder c:\Saxion + created zip file.



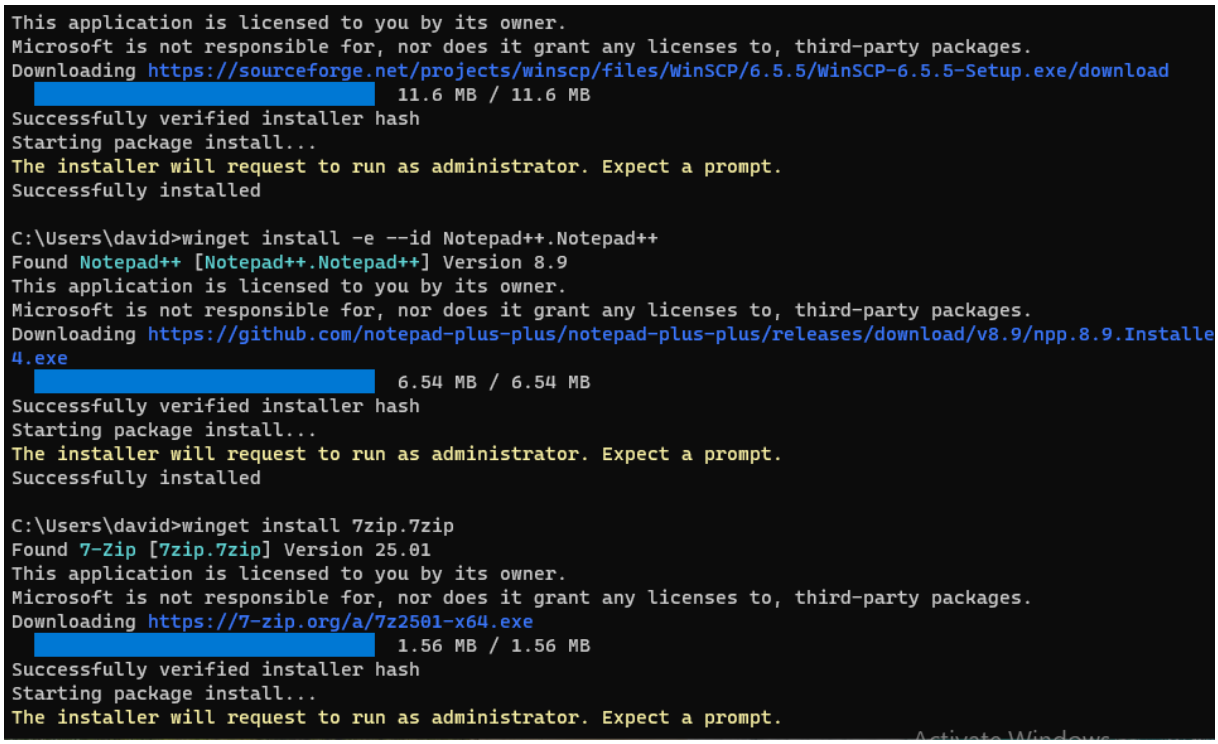
Terminating Processes

Relevant Screenshots Task Manager Window:

Install Software

Relevant screenshots that the following software is installed with winget:

- WinSCP
- Notepad++
- 7zip

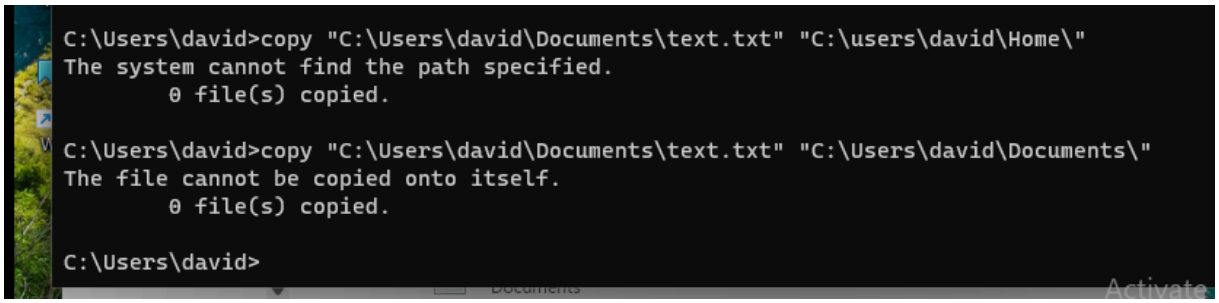


E- beteken dat het exact moest zijn dus case sensitive

--id betekent de install alleen de id volgt

Assignment 5.4: Working with Linux

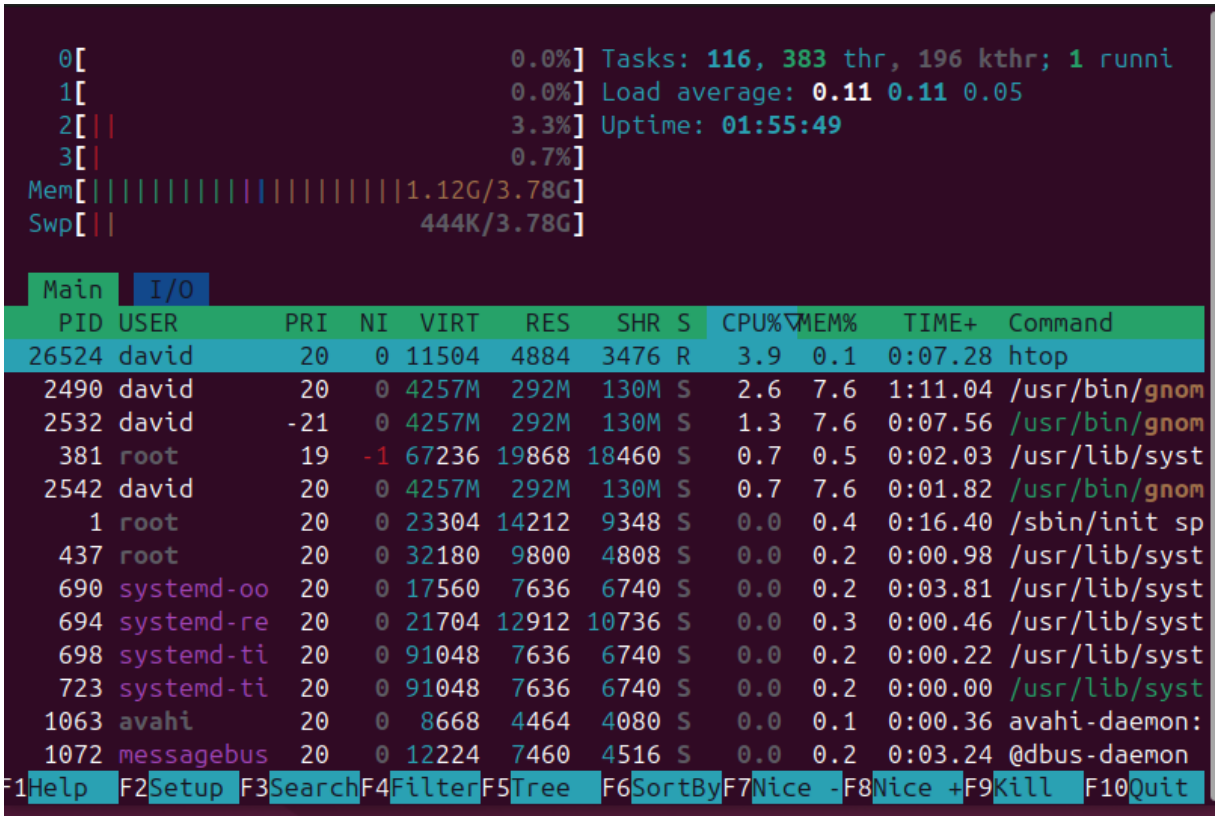
Relevant screenshots + motivation



tar -cvf file.tar file.txt

tar -xvf file.tar

tar -czvf file.tar.gz file.txt



It shows what processes are running and what they are doing

Assignment 5.5: Users and permissions on Linux

Relevant screenshots + motivation

```
david@david-VMware-Virtual-Platform:~$ cat -A hello.sh
^$
david@david-VMware-Virtual-Platform:~$
david@david-VMware-Virtual-Platform:~$ cat -A hello.sh
^$
david@david-VMware-Virtual-Platform:~$ ./hello.sh
./hello.sh: line 1: ^: command not found
david@david-VMware-Virtual-Platform:~$ nano clean_hello.sh
david@david-VMware-Virtual-Platform:~$ chmod +x clean_hello.sh
/cleadavid@david-VMware-Virtual-Platform:~$ ./clean_hello.sh
Hello <David, 592513>!
david@david-VMware-Virtual-Platform:~$ man chmod
david@david-VMware-Virtual-Platform:~$ chmod 744 hello.sh
david@david-VMware-Virtual-Platform:~$
david@david-VMware-Virtual-Platform:~$ chmod 744 clean.hello.sh
chmod: cannot access 'clean.hello.sh': No such file or directory
david@david-VMware-Virtual-Platform:~$ chmod 744 clean_hello.sh
```

Assignment 5.6: View the contents of files

Relevant screenshots + motivation

Alle woorden zijn filters in linux.

Cat laat alles zien in lijnen tekst.

Head mag je een hoeveelheid regels die je wil zien meegeven.

Tail doet hetzelfde al head maar dan mag je laten weten hoeveel je van de laatste regels wil bekijken.

Wc geeft de hoeveelheid regels woorden en karakters.

Met grep zoek je naar een specifiek iet in een file

12306 lines 107562 words 607504 karakters

```
 12306 107562 607504 sherlock.txt
david@david-VMware-Virtual-Platform:~$ grep kingdom sherlock.txt
“I tell you that I would give one of the provinces of my kingdom to
And that was how a great scandal threatened to affect the kingdom of
david@david-VMware-Virtual-Platform:~$ ^C
```

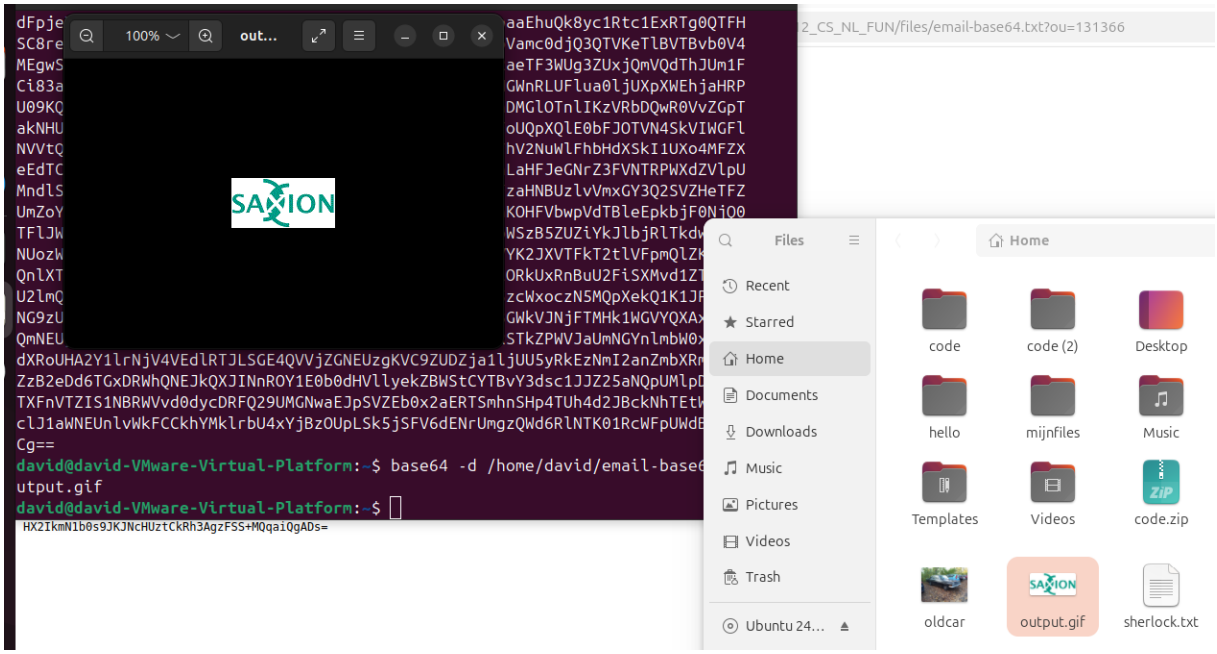
Assignment 5.7: Digital forensics

Relevant screenshots + motivation

Motorola Moto G6 Play

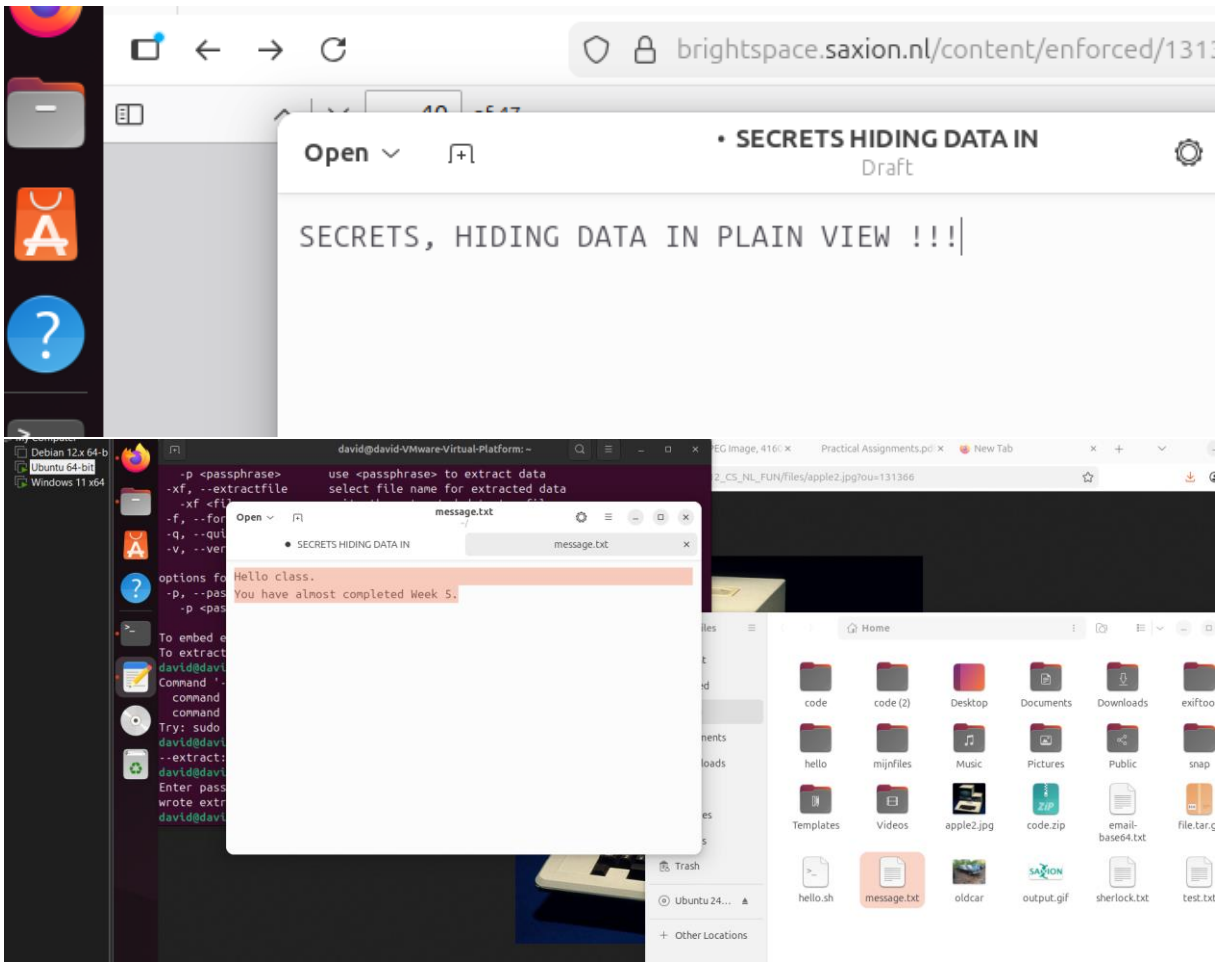
Groningen

Ja het is een jpg



Assignment 5.8: Steganography

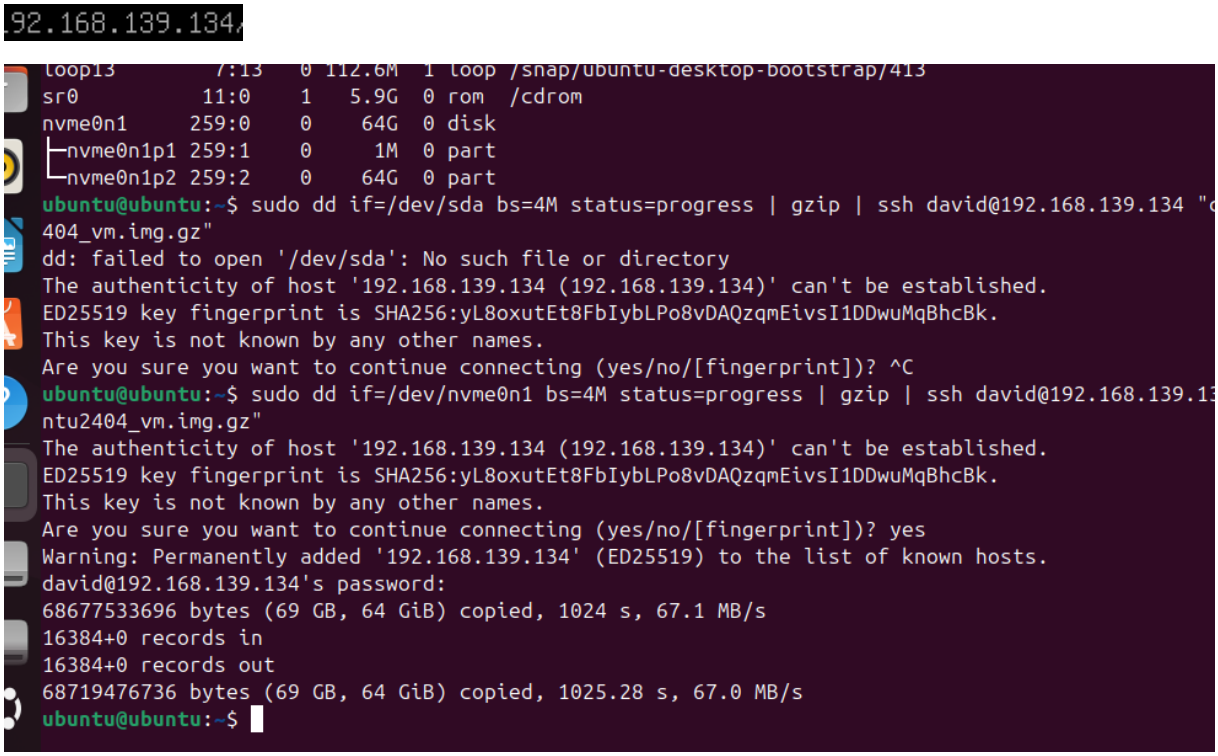
Relevant screenshots + motivation



Assignment 5.9: Capture disk images

Make relevant screenshots + motivation:

- Proof that the Debian 13 server stored a back-up image of the Ubuntu 24.04 Desktop VM.
- Proof that you can restore the back-up image into an empty VM.



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