

Template Week 5 – Operating Systems

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Assignment 5.1: Unix-like

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

Unix is bedoelt als een os die je koopt en download waar alles al inzit en waar het niet de bedoeling mee is dat je het voor jezelf kan aanpassen. En een unix-like is gemaakt om zelf aan te kunnen passen zodat het per persoon anders is en dat je het op jezelf kan aanpassen. Ook is unix-like goedkoper dan unix, omdat het hele idee is dat je het zelf kan doen.

- 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:

- c) What is the philosophy of the GNU movement?

Dat iedereen het recht moet hebben om alle programma's uit te voeren, te kopiëren, aanpassen en de aanpassingen ook door te kopiëren.

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

Ja, want je kan het programma gratis runnen. Je kan de code zelf aanpassen hoe jij het wil. Je mag jouw code weer door verspreiden zodat andere mensen van jou kunnen kopiëren. Maar je mag ook van andere mensen het kopiëren in plaats van de officiële website

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

Een linux omgeving binnen windows zonder een vm

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

Android en chromeOS horen bij linux

ios hoort bij unix

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>

Wetenschappelijk onderzoek

Encryptie en decryptie/veiligheid

Berekeningen

- 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?

Een ps3 cluster is een hoop playstation 3 samen gekopeld zodat het meer rekenkracht heeft. Dit zou grote en langdradige berekeningen sneller oplosbaar 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

- 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

- e) What CPU architecture is used for the PlayStation 5 and Xbox Series X?

PS5 en xbox: x86-64

What operating systems run on these consoles?

PS: eigen playstation OS

Xbox: Microsoft

What conclusion can you draw from the answer to the previous question?

Dat de hardware hetzelfde is maar de Os niet.

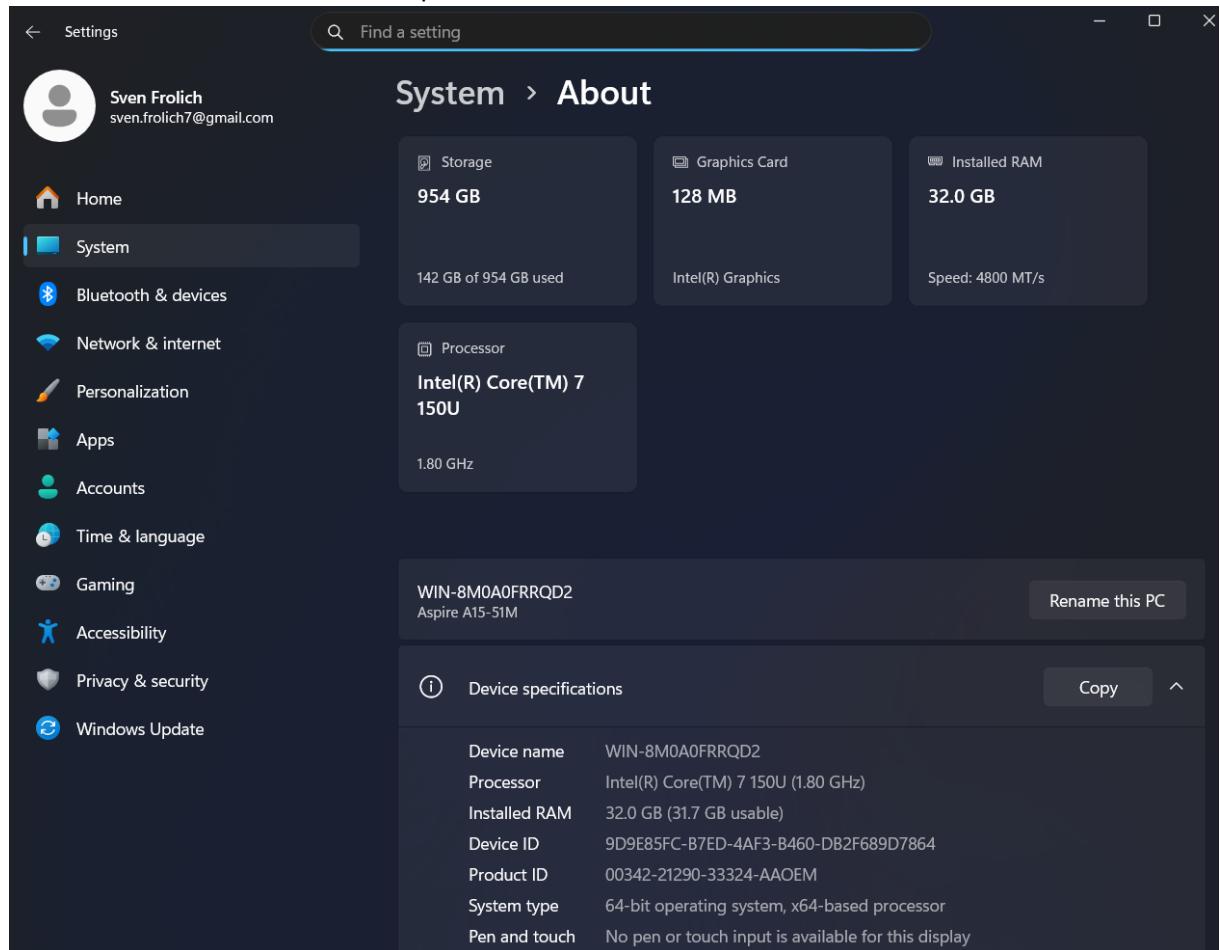
Assignment 5.3: Working with Windows

Take relevant screenshots of the assignments below

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

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

- c) Open the system properties with a **Windows** 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.

The image displays three separate screenshots of the Windows Task Manager interface, each showing a different tab:

- Processes Tab:** Shows a list of active processes. The table includes columns for Name, Status, CPU usage (4%), Memory usage (35%), Disk usage (0%), and Network usage (0%).

Name	Status	CPU	Memory	Disk	Network
Discord		0%	652.2 MB	0 MB/s	0 Mbps
Microsoft Word		0%	123.0 MB	0 MB/s	0 Mbps
pgAdmin4		0%	43.3 MB	0 MB/s	0 Mbps
Task Manager		0%	53.8 MB	0 MB/s	0 Mbps
Background processes (87)					
AAADSvc		0%	1.0 MB	0 MB/s	0 Mbps
ACCUUserPS		0%	1.4 MB	0 MB/s	0 Mbps
Acer Device Enabling Service ...		0%	1.3 MB	0 MB/s	0 Mbps
Acer Device Info Software C...		0%	5.2 MB	0 MB/s	0 Mbps
Acer GAI Camera Windows		0%	3.8 MB	0 MB/s	0 Mbps
Acer Quick Access Software C...		0%	4.5 MB	0 MB/s	0 Mbps
Acer QuickPanel		0%	56.6 MB	0 MB/s	0 Mbps
AcerPixyService		0%	3.6 MB	0 MB/s	0 Mbps

- Performance Tab:** Shows real-time system performance metrics for CPU, Memory, Disk, Ethernet, and Wi-Fi. It includes a grid of charts for CPU utilization over 60 seconds and detailed statistics for each component.
- Users Tab:** Shows active users. The table includes columns for User, Status, CPU usage (6%), Memory usage (35%), Disk usage (1%), and Network usage (0%).

User	Status	CPU	Memory	Disk	Network
Gebruiker (133)		5.8%	4.503.2 MB	0.1 MB/s	0.1 Mbps

- 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

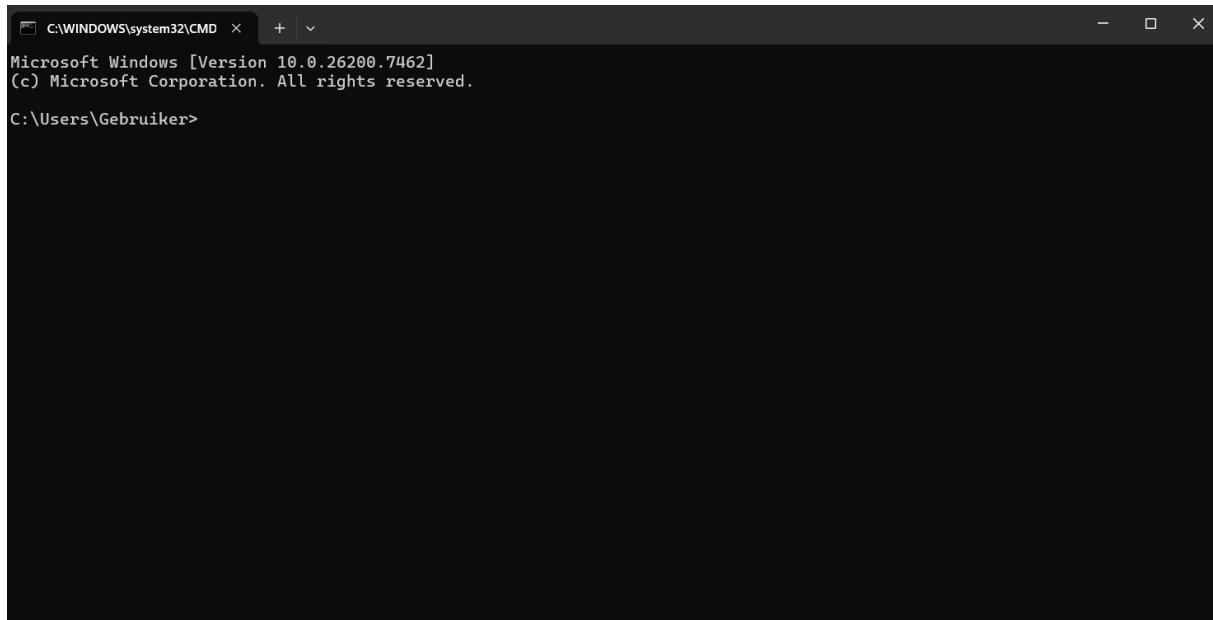
Arrows Down X2

Enter

- 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

Assignment 5.4: Working with Linux

Relevant screenshots + motivation

Assignment 5.5: Users and permissions on Linux

Relevant screenshots + motivation

Assignment 5.6: View the contents of files

Relevant screenshots + motivation

Laatste bolletje hoeft niet

Assignment 5.7: Digital forensics

Relevant screenshots + motivation

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.

Ready? Save this file and export it as a pdf file with the name: [week5.pdf](#)