

Template Week 3 – Hardware

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Assignment 3.1: Examine your phone

What processor is in your phone?

Snapdragon 8 Gen 3 for Galaxy

To which architecture family does this processor belong? In other words, which Instruction Set Architecture (ISA) is used?

ARM (Advanced RISC Machine)

How much RAM is in it?

12 GB

How much storage does your phone have?

1 TB (1000 GB).

What operating system is running on your phone?

Android 16

Approximately how many applications do you have installed?

Rond de 100

Which application do you use the most?

Tiktok en Instagram

Can your phone be charged with what type of plug? USB Type-C

Which I/O ports can you visually see on your phone? USB Type-C poort (onderaan)

Assignment 3.2: Examine your laptop

What processor is in your laptop?

12th Gen Intel(R) Core(TM) i7-12700H

To which architecture family does this processor belong? In other words, which Instruction Set Architecture (ISA) is used? x86-64 (kortweg x64), behorend tot de Intel-architectuur

How much RAM is in it? 16,0 GB

How much storage does your laptop have? 476 GB

Which operating system is running on your laptop? Windows 11 Education

Approximately how many applications do you have installed? 74

Which application do you use the most? Edge Browser

Can your laptop be charged with what type of plug? DC Barrel Plug

Which I/O ports can you visually see on your laptop?

- **Grote, ronde voedingspoort (DC-in)**
- **HDMI 2.1 poort**
- **RJ45 LAN-poort (Ethernet)**
- **Thunderbolt™ 4 (USB-C)**
- **USB 3.2 Gen 2 Type-C**
- **2x USB 3.2 Gen 1 Type-A**
- **3.5mm Combo Audio Jack (voor headset/microfoon)**

Assignment 3.3: Power to the laptop

What is the input voltage? 100 V AC tot 240 V AC

What is the output voltage? 20 V DC

How many watts can your power adapter deliver? 240 Watt

Is the input voltage AC or DC? AC

Is the output voltage AC or DC? DC

AC/DC what is that? AC is elektrische stroom die van richting veranderd. DC is stroom die maar in 1 richting kan vloeien, de adapter zet AC om in DC.

If you reverse the polarity of the output voltage, is that bad for your laptop? Ja, dit kan leiden tot kortsluiting.

You forgot your power adapter, your laptop normally needs 15 watts. You will be loaned a power adapter that can deliver 50 watts. Voltage, polarity, etc. are all the same compared to the original power adapter. You can connect the borrowed power adapter to your laptop. What will happen? Also explain why you think that. Niks, de adapter KAN 50 watt vermogen leveren maar de laptop heeft dit niet nodig en zal alleen gebruiken wat nodig is dus 15 watt.

Assignment 3.4: Build your dream PC

Screenshots PC configuration + motivation:

Component	Selection	Base	Promo	Shipping	Tax	Availability	Price	Where
CPU	Intel Core Ultra 9 285K 3.7 GHz 24-Core Processor	€499.00	—	FREE	—	—	€499.00	MEGEKHO Buy X
CPU_Cooler	ARCTIC Liquid Freezer III Pro 360 77 CFM Liquid CPU Cooler	€64.99	—	Prime	—	Available soon	€64.99	amazon.nl Buy X
Motherboard	MSI Z890 GAMING PLUS WIFI ATX LGA1851 Motherboard	€244.90	—	FREE	—	In stock	€244.90	ALTERNATE Buy X
Memory	Corsair Vengeance RGB 64 GB (2 x 32 GB) DDR5-6000 CL30 Memory	€849.00	—	FREE	—	—	€849.00	MEGEKHO Buy X
	+ Add Additional Memory							
Storage	Samsung 990 Pro 4 TB M.2-2280 PCIe 4.0 X4 NVME Solid State Drive	€342.70	—	—	—	In stock	€342.70	amazon.nl Buy X
	+ Add Additional Storage							
Video_Card	Asus ROG Astral OC GeForce RTX 5090 32 GB Video Card	€3099.00	—	FREE	—	—	€3099.00	MEGEKHO Buy X
	+ Add Another Video Card							
Case	Corsair 3500X ARGB ATX Mid Tower Case	€129.00	—	FREE	—	In stock	€129.00	ALTERNATE Buy X
Power_Supply	Corsair SF1000 (2024) 1000 W 80+ Platinum Certified Fully Modular SFX Power Supply	€221.60	—	Prime	—	In stock	€221.60	amazon.nl Buy X
Operating_System	+ Choose An Operating System							
Monitor	Samsung Odyssey OLED G80SD 32.0" 3840 x 2160 240 Hz Monitor	€769.00	—	FREE	—	In stock	€769.00	SAMSUNG Buy X

<https://nl.pcpartpicker.com/list/YJ4nWc>

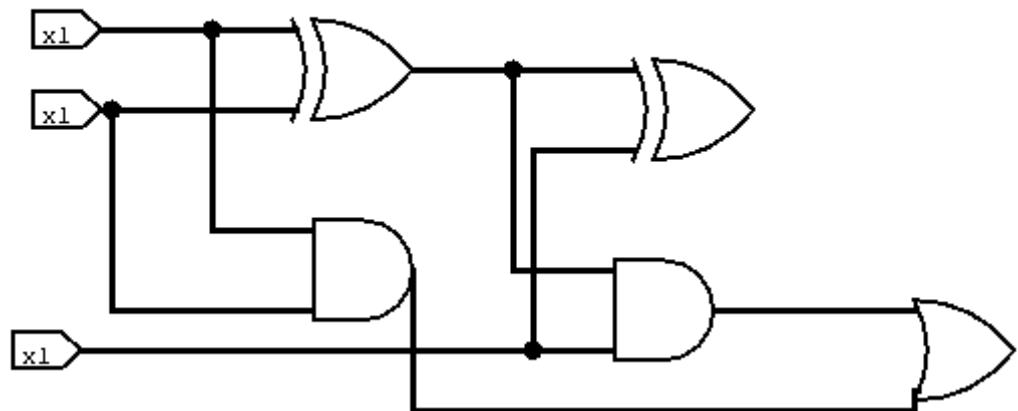
De motivatie is simpel, het gaat om en droom PC. Zo goed mogelijk, ik wou gewoon de beste CPU, beste GPU en een heel erg mooie monitor, de rest is gekozen dmv compatibiliteit en ratings. Het heeft 4 TB aan opslag, een Samsung SSD nota bene en ook nog 32 GB RAM. Meer dan genoeg om ALLES te doen, maar nogmaals het is een droom PC.

Assignment 3.5: Adders

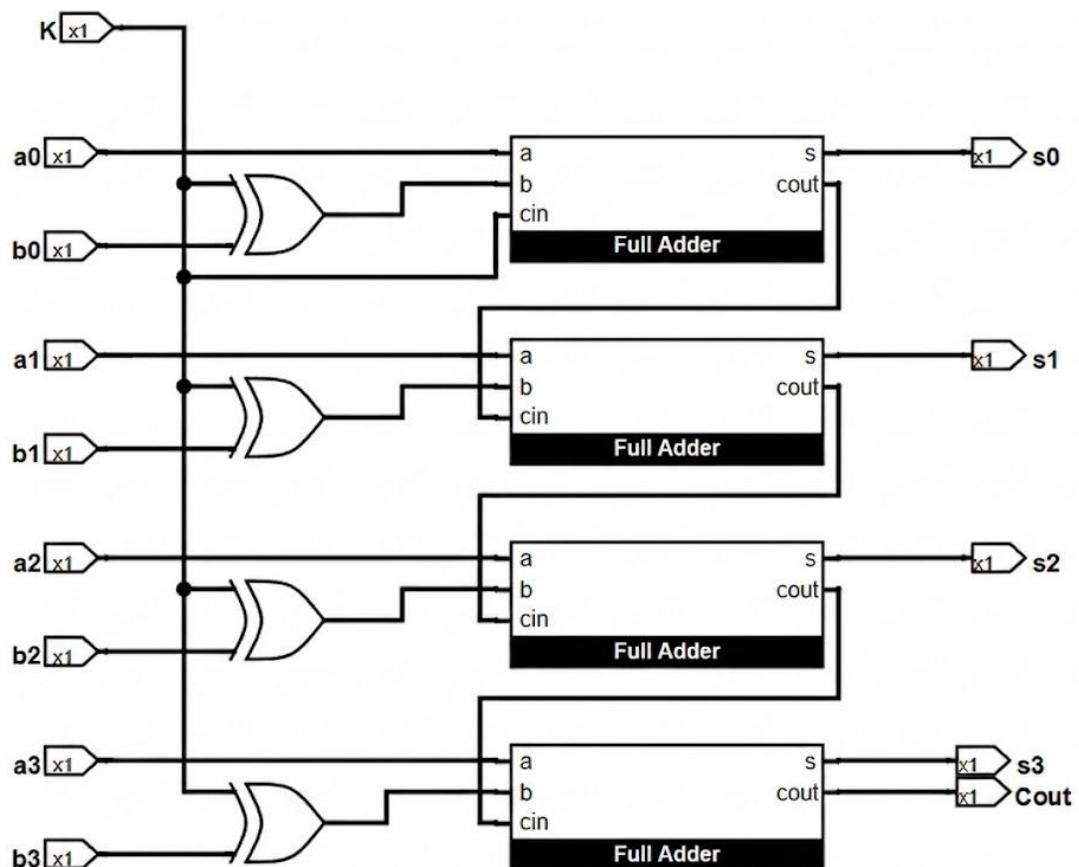
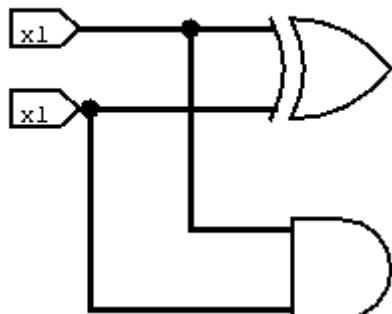
Complete the **half adder**, **full adder** and **4-bit adder** assignment as described in the PowerPoint slides of week 3 in Logisim. Save the chip design and also export three PNG pictures of the separate finished designs. See the PowerPoint slides of week 3.

Paste the three exported PNG pictures in here.

Full Adder, Andy Melkonian



Half Adder, Andy Melkonian



Ready? Save this file and export it as a pdf file with the name: **week3.pdf**