

Template Week 3 – Hardware

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Assignment 3.1: Examine your phone

What processor is in your phone?

Qualcomm Snapdragon 8 Elite

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

ARM architecture

How much RAM is in it?

12 GB fysieke ram, upgradeable naar 16 gb door interne opslag te gebruiken

How much storage does your phone have?

512GB

What operating system is running on your phone?

Android 16 met One UI 8.0

Approximately how many applications do you have installed?

Ik heb iets meer dan 200 apps geïnstalleerd

Which application do you use the most?

Waarschijnlijk Snapchat, Whatsapp of Tiktok.

Can your phone be charged with what type of plug?

USB Type C

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

Alleen USB Type C

Assignment 3.2: Examine your laptop

What processor is in your laptop?

AMD Ryzen 9 7940HX

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

AMDx86-64

How much RAM is in it?

16 GB DDR5-4800

How much storage does your laptop have?

1 TB NVME SSD

Which operating system is running on your laptop?

Windows 11

Approximately how many applications do you have installed?

Ongeveer 20

Which application do you use the most?

Opera GX of IntelliJ

Can your laptop be charged with what type of plug?

USB Type C of de bijgeleverde AC stroomadapter met een DC plug.

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

2 USB A poorten, 2 USB C poorten, HDMI poort, Ethernet poort, 3,5 mm audiojack

Assignment 3.3: Power to the laptop

What is the input voltage?

100 – 240 VAC

What is the output voltage?

20V DC

How many watts can your power adapter deliver?

280W

Is the input voltage AC or DC?

AC

Is the output voltage AC or DC?

DC

AC/DC what is that?

Alternating current and direct current

AC verandert van richting en polariteit. Dit komt er uit het stopcontact.

DC loopt in één richting door een apparaat zoals de laptop

If you reverse the polarity of the output voltage, is that bad for your laptop?

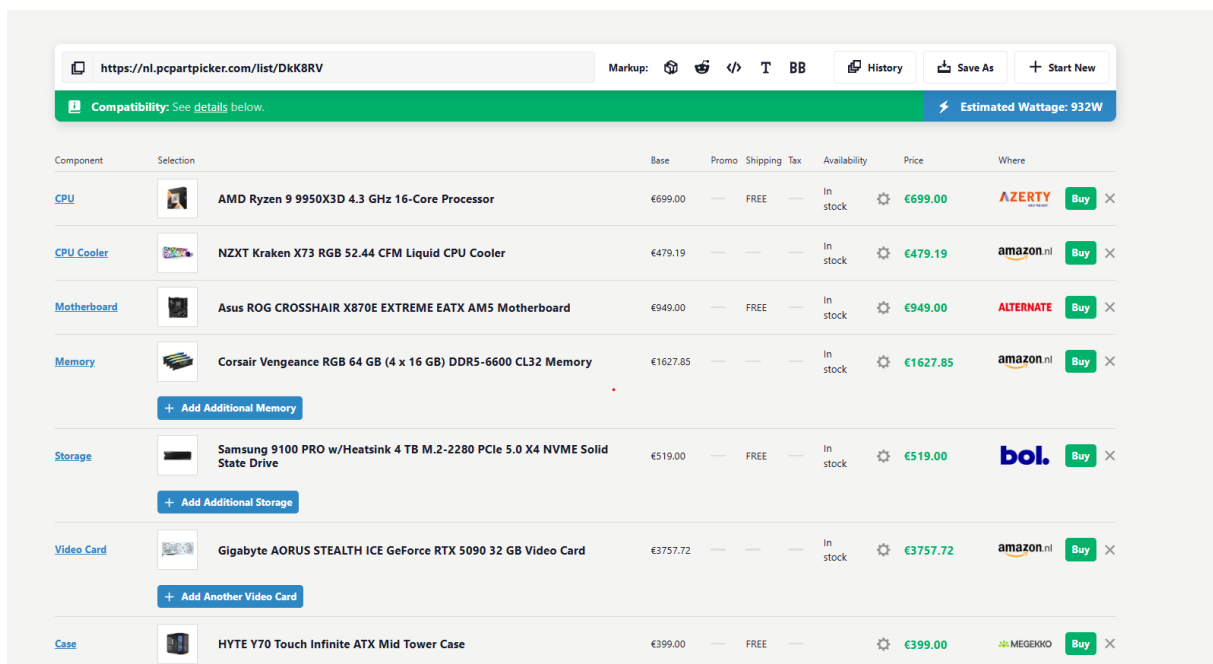
Ja, de + en – zijn op een bepaalde manier aangebracht en daar gaat de elektronica van uit.

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.

De wattage maakt niet zo heel veel uit. Als de spanning en polariteit maar gelijk zijn aan degene van mijn originele power adapter zal hij gewoon laden en normaal werken. Er zitten namelijk circuits in die ervoor zorgen dat hij alleen zoveel stroom trekt als hij nodig heeft en een 'te hoge' wattage kan dus nooit kwaad. Te laag wel want dan overbelast je wellicht de power adapter.




Assignment 3.4: Build your dream PC

Screenshots PC configuration + motivation:



The screenshot shows a PC configuration website with a list of components and their prices. The components are listed in a table with columns for Component, Selection, Base, Promo, Shipping, Tax, Availability, Price, and Where. The components include CPU, CPU Cooler, Motherboard, Memory, Storage, Video Card, and Case. Each component has a selection button and a buy button. The total estimated wattage is 932W.

Component	Selection	Base	Promo	Shipping	Tax	Availability	Price	Where
CPU	AMD Ryzen 9 9950X3D 4.3 GHz 16-Core Processor	€699.00	—	FREE	—	In stock	€699.00	AZERTY Buy
CPU Cooler	NZXT Kraken X73 RGB 52.44 CFM Liquid CPU Cooler	€479.19	—	—	—	In stock	€479.19	amazon.nl Buy
Motherboard	Asus ROG CROSSHAIR X870E EXTREME EATX AM5 Motherboard	€949.00	—	FREE	—	In stock	€949.00	ALTERNATE Buy
Memory	Corsair Vengeance RGB 64 GB (4 x 16 GB) DDR5-6600 CL32 Memory	€1627.85	—	—	—	In stock	€1627.85	amazon.nl Buy
	+ Add Additional Memory							
Storage	Samsung 9100 PRO w/Heatsink 4 TB M.2-2280 PCIe 5.0 X4 NVME Solid State Drive	€519.00	—	FREE	—	In stock	€519.00	bol Buy
	+ Add Additional Storage							
Video Card	Gigabyte AORUS STEALTH ICE GeForce RTX 5090 32 GB Video Card	€3757.72	—	—	—	In stock	€3757.72	amazon.nl Buy
	+ Add Another Video Card							
Case	HYTE Y70 Touch Infinite ATX Mid Tower Case	€399.00	—	FREE	—		€399.00	MEGEKO Buy

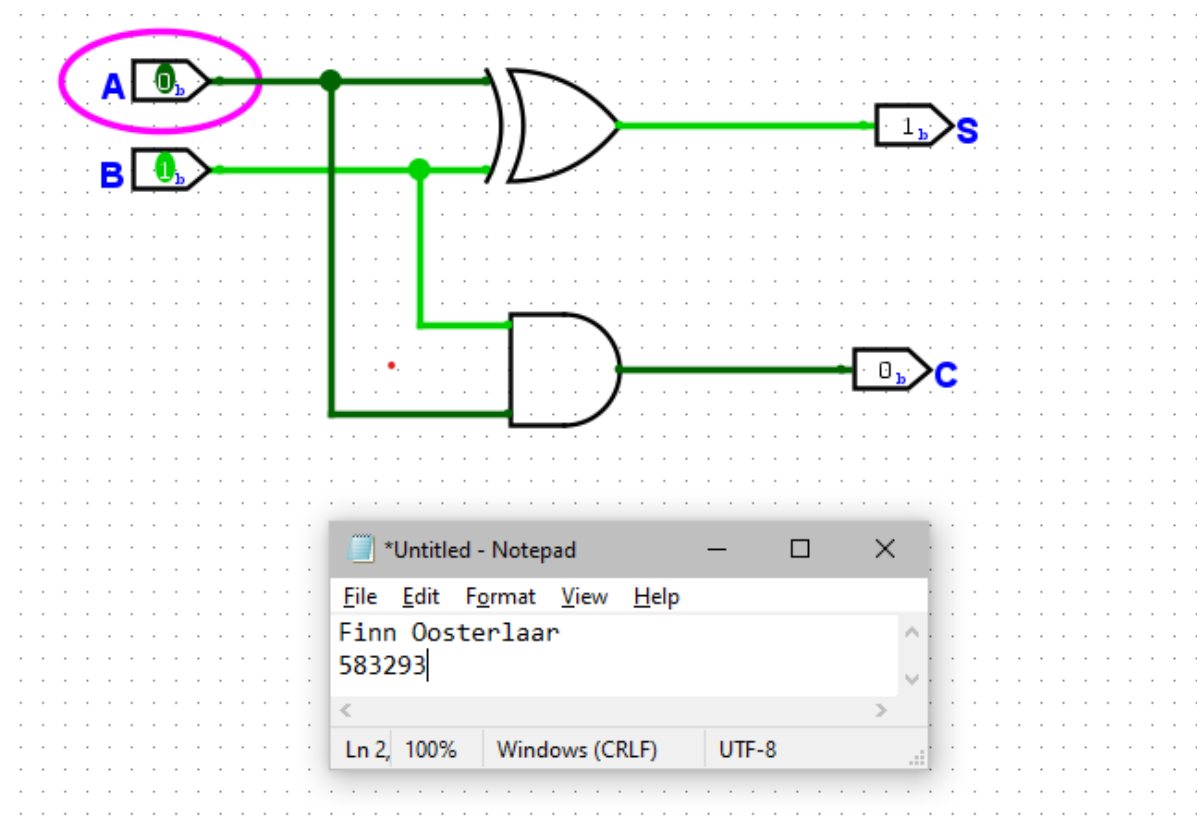
Power Supply		Asus ROG THOR T3 GAMING 1600 W 80+ Titanium Certified Fully Modular ATX Power Supply	€757.50	—	—	In stock	€757.50	amazon.nl	Buy	×
Operating System		Microsoft Windows 10 Home Retail - USB 32/64-bit	—	—	—	—	No Prices Available	—	Buy	×
Monitor		Samsung Odyssey Neo G95NC 57.0" 7680 x 2160 240 Hz Curved Monitor	€1599.00	—	FREE	In stock	€1599.00	DEP	Buy	×
+ Add Another Monitor										
Expansion Cards / Networking	Sound Cards, Wired Network Adapters, Wireless Network Adapters									
Peripherals	Headphones, Keyboards, Mice, Speakers, Webcams									
Accessories / Other	Case Accessories, Case Fans, Fan Controllers, Thermal Compound, External Storage, Optical Drives, UPS Systems									
Total:							€10787.26	Buy From Amazon Netherlands		

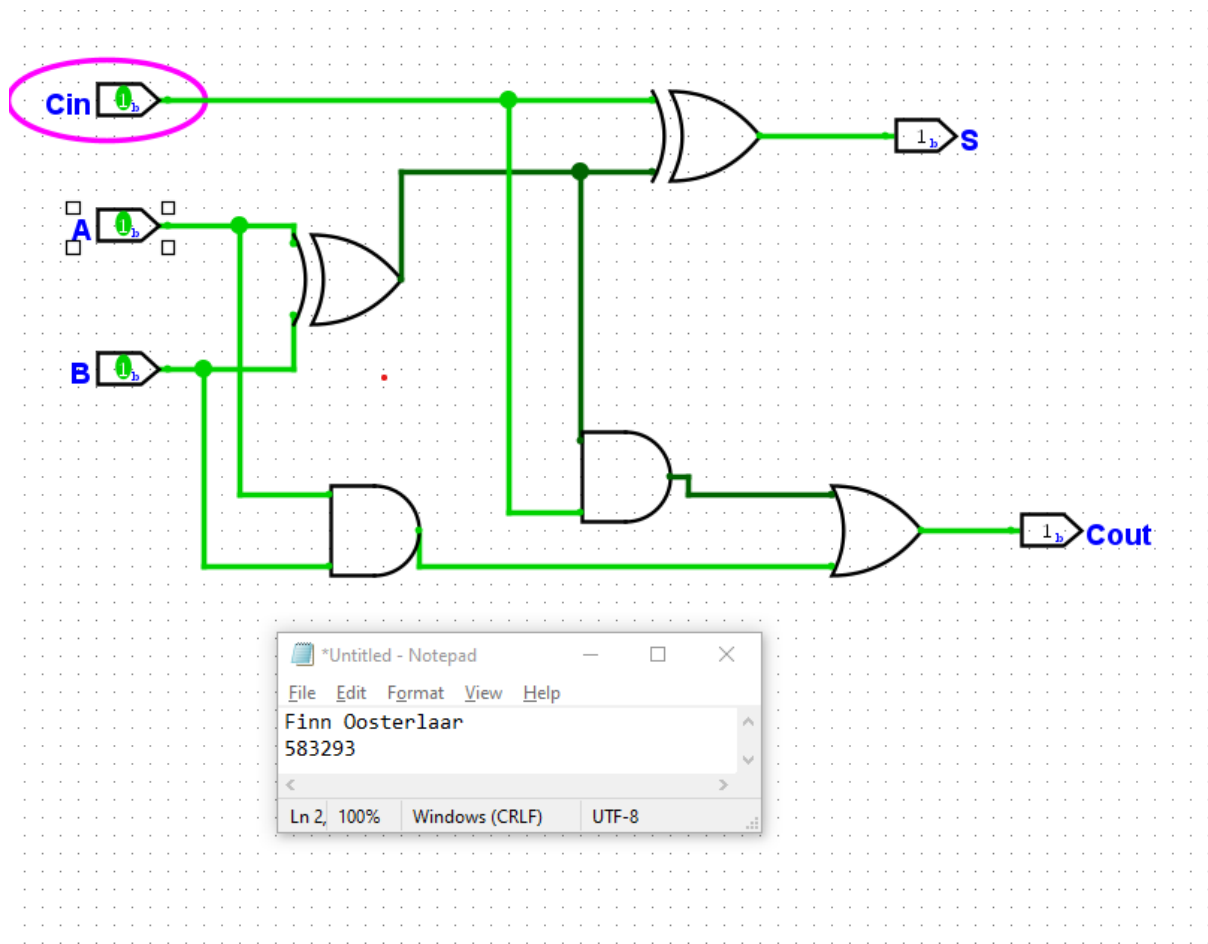
Ja als geld geen rol zou spelen en ik een pc zou mogen bouwen, zou het zoiets worden. Het beste van het beste op dit moment. Ik houd van AMD cpu's omdat ze zowel snel zijn in gamen als goed zijn voor multitasken en dat doe ik nog wel eens. Nvidia heeft gewoon de aller beste DLSS systemen en raytracing die er nu op de markt is en verder ben ik een beetje een asus fanboy omdat ze best wel gaming gericht zijn en ze handige features maken om lighting etc makkelijk aan te passen.

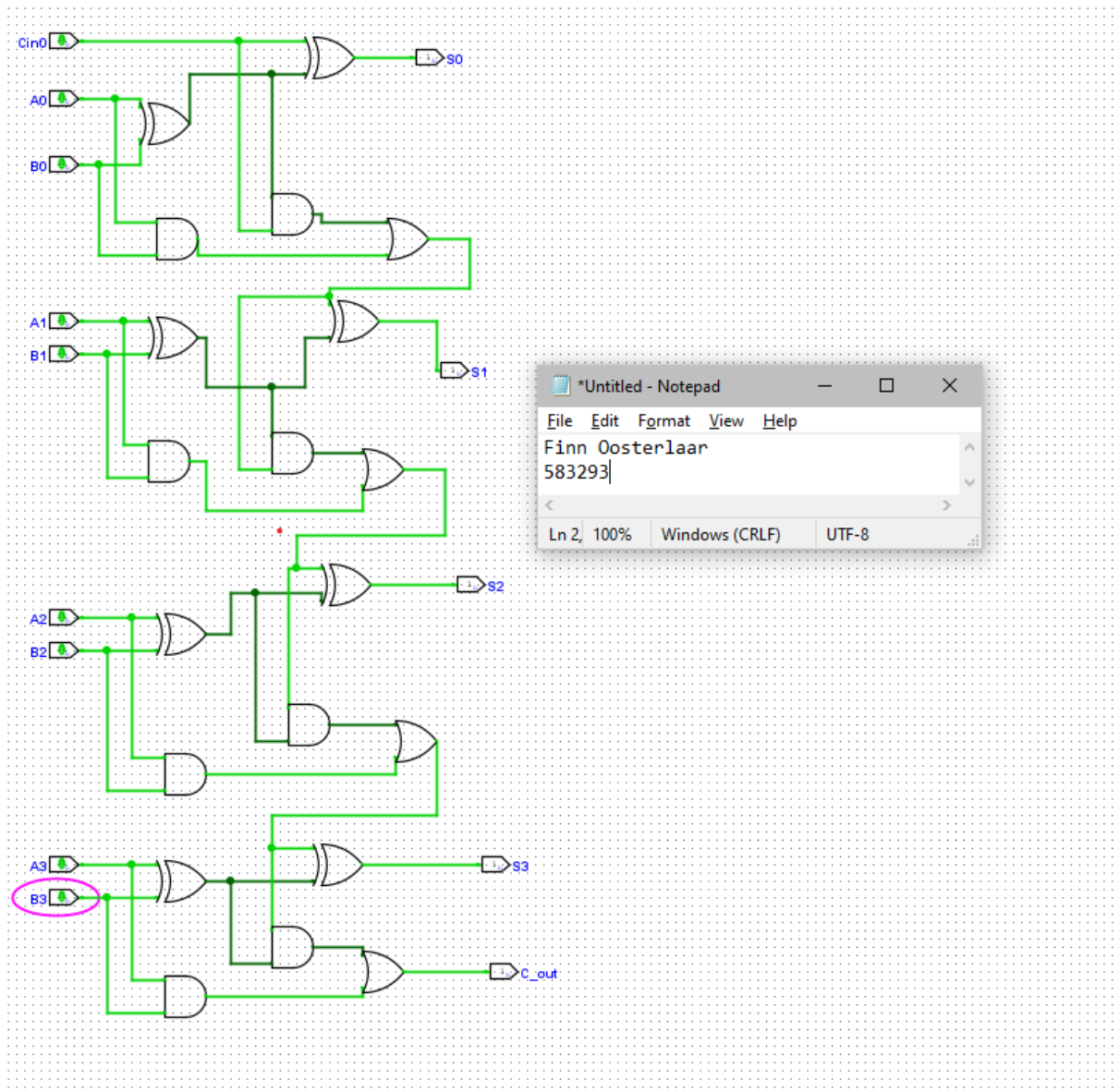
Assignment 3.5: Adders

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.







Ready? Save this file and export it as a pdf file with the name: [week3.pdf](#)