

Template Week 3 – Hardware

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Assignment 3.1: Examine your phone

What processor is in your phone?

Apple A14 Bionic-chip

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

Een ARM architectuur

How much RAM is in it?

4gb aan werkgeheugen

How much storage does your phone have?

128gb geheugen

What operating system is running on your phone?

iOS

Approximately how many applications do you have installed?

90 apps geïnstalleerd

Which application do you use the most?

TikTok

Can your phone be charged with what type of plug?

Lighting cable

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

Only the lighting cable port

Assignment 3.2: Examine your laptop

What processor is in your laptop?

Intel Core i7-13650HX

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

64-bit Intel architectuur

How much RAM is in it?

24gb ddr5

How much storage does your laptop have?

1TB SSD

Which operating system is running on your laptop?

Windows 11 Education

Approximately how many applications do you have installed?

30 apps

Which application do you use the most?

Google

Can your laptop be charged with what type of plug?

Lenovo ThinkPad 135W AC Adapter

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

1x Oplaad poort

1x 3.5mm audio jack

1x Ethernet poort

1x HDMI

2x USB-C

3x USB-A

Assignment 3.3: Power to the laptop

What is the input voltage?

100–240V

What is the output voltage?

20V

How many watts can your power adapter deliver?

245 watt

Is the input voltage AC or DC?

AC

Is the output voltage AC or DC?

DC

AC/DC what is that?

- AC is stroom dat wisselt continu van richting. Dit is wat uit je stopcontact komt.
- DC is stroom dat vloeit in één richting. Elektronica zoals laptops werken op DC.

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

Ja, dat is slecht voor je laptop, 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.

De laptop neemt alleen wat hij nodig heeft (15W). De adapter kan tot 50W leveren, maar forceert dat niet.

Assignment 3.4: Build your dream PC

Screenshots PC configuration + motivation:

Ik zou gaan voor de AMD 7 cpu omdat deze de beste cpu op de markt momenteel is.

Ik zou gaan voor deze 360mm waterkoeler omdat een krachtige CPU goede koeling nodig heeft en dit model stil en efficiënt is.

Ik zou gaan voor dit Gigabyte moederbord omdat alles wat ik erom heen wil er goed op past.

Ik zou gaan voor dit DDR5-geheugen omdat het snel, stabiel en geschikt is voor zware games en multitasking.

Ik zou gaan voor deze NVMe-SSD omdat hij extreem snel is en genoeg opslagruimte biedt voor al mijn programma's en games.

Ik zou gaan voor deze 4080-videokaart omdat hij geweldige prestaties levert in hoge resoluties en klaar is voor de nieuwste games.

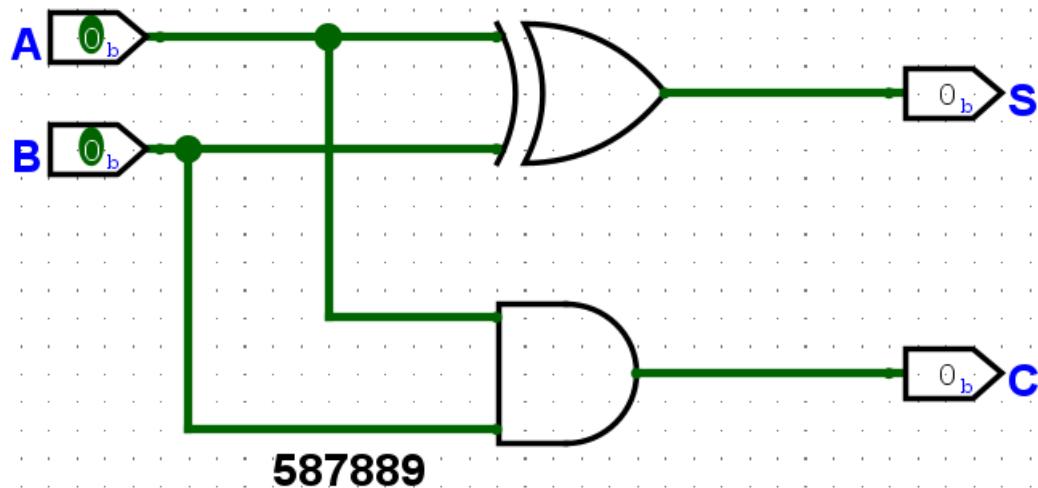
Ik zou gaan voor deze 1000W voeding omdat hij betrouwbaar is en genoeg vermogen levert voor een high-end systeem.

Component		Selection	Base	Promo	Shipping	Tax	Availability	Price	Where
CPU									
CPU		AMD Ryzen 7 9800X3D 4.7 GHz 8-Core Processor	€469.00	—	FREE	—	In stock	€469.00	AZERTY X
CPU Cooler		Corsair NAUTILUS 360 RS ARGB 74.37 CFM Liquid CPU Cooler	€108.99	—	✓Prime	—	In stock	€108.99	amazon.nl X
Motherboard		Gigabyte X870E AORUS ELITE WIFI7 ATX AM5 Motherboard	€306.00	—	FREE	—	—	€306.00	PARADIGIT X
Memory		Corsair Vengeance RGB 64 GB (2 x 32 GB) DDR5-6000 CL30 Memory	€899.00	—	FREE	—	In stock	€899.00	ALTERNATE X
+ Add Additional Memory									
Storage		Samsung 990 Pro 2 TB M.2-2280 PCIe 4.0 X4 NVME Solid State Drive	€219.00	—	✓Prime	—	In stock	€219.00	amazon.nl X
+ Add Additional Storage									
Video Card		Gigabyte WINDFORCE V2 GeForce RTX 4080 SUPER 16 GB Video Card	€1789.99	—	—	—	In stock	€1789.99	amazon.nl X
+ Add Another Video Card									
Case		Phanteks Eclipse P600S ATX Mid Tower Case	€302.06	—	—	—	In stock	€302.06	amazon.nl X
Power Supply		Corsair RM1000x (2024) 1000 W Fully Modular ATX Power Supply	€190.50	—	✓Prime	—	In stock	€190.50	amazon.nl X
Operating System		Microsoft Windows 11 Home OEM - DVD 64-bit	€126.00	—	FREE	—	—	€126.00	PARADIGIT X
Monitor	+ Choose A Monitor								

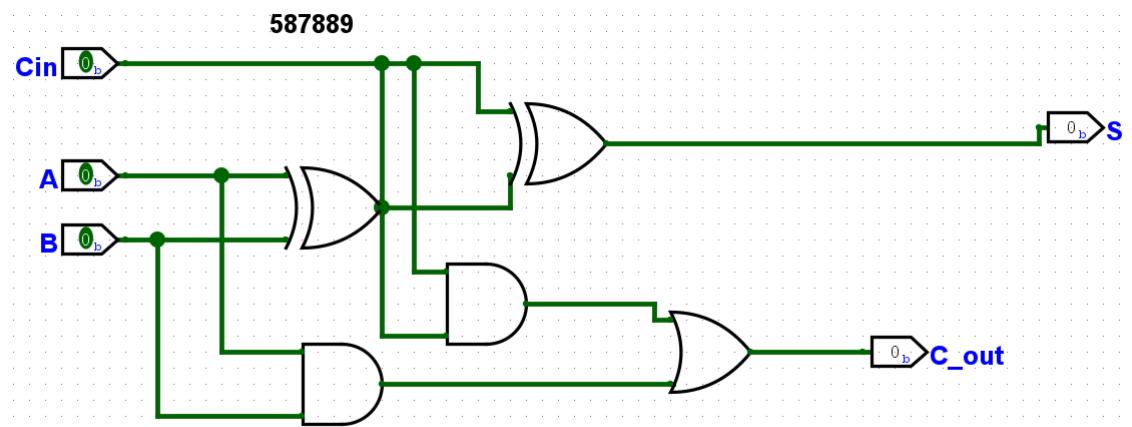
Assignment 3.5: Adders

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.

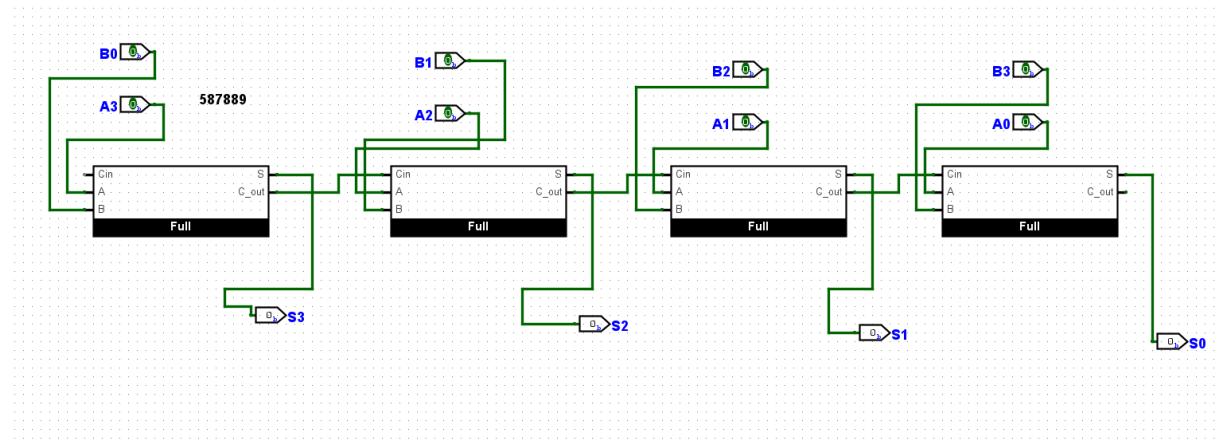
Half



Full



4 Bit



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