Template Week 3 – Hardware

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Assignment 3.1: Examine your phone

What processor is in your phone?
A14 Bionic

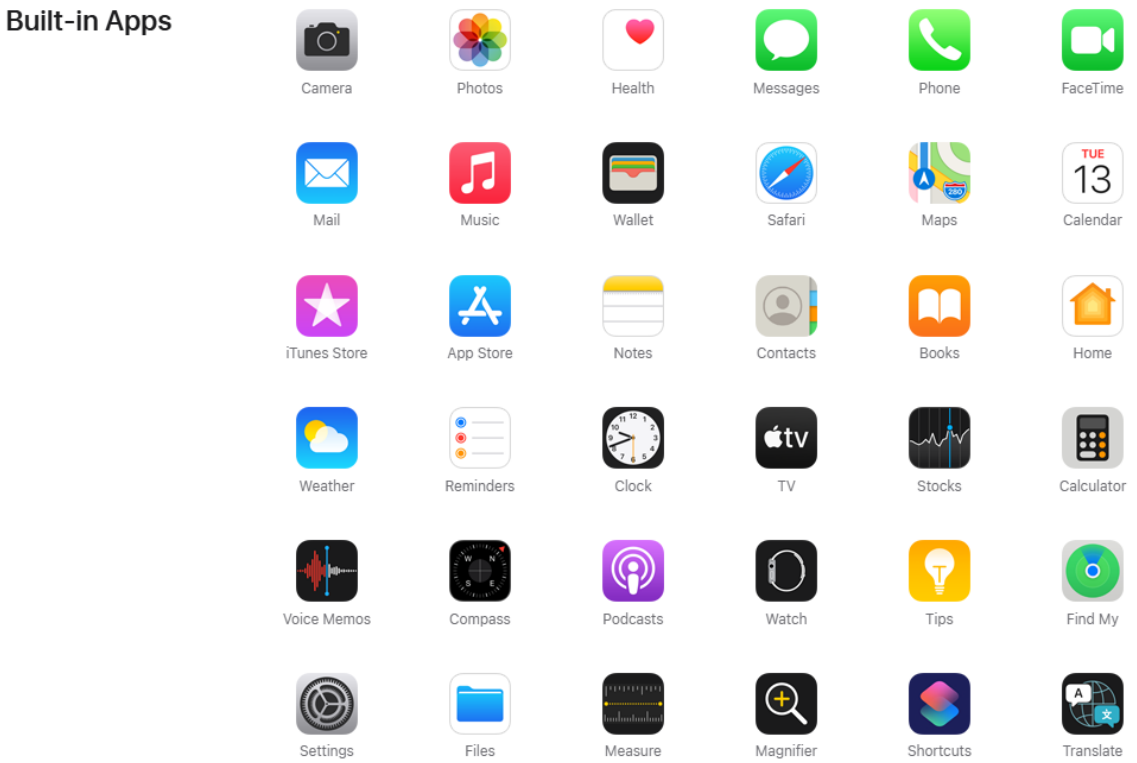
To which architecture family does this processor belong? In other words, which Instruction Set Architecture (ISA) is used?
ARM 64-bit architecture

How much RAM is in it?
4GB RAM

How much storage does your phone have?
64GB Storage

What operating system is running on your phone?
IOS 18

Approximately how many applications do you have installed?
Excluding the built in applications I have 8 other applications installed. With the built in I would have 44 applications installed:



Which application do you use the most?
WhatsApp

Can your phone be charged with what type of plug?
Lightning cable or wireless charging

Which I/O ports can you visually see on your phone?
Charging port which also can be used for earphones
Speakers
Microphone holes
sim card slot

Assignment 3.2: Examine your laptop

What processor is in your laptop?
Intel I7-11GEN

To which architecture family does this processor belong? In other words, which Instruction Set Architecture (ISA) is used?
x86-64

How much RAM is in it?
I added additional ram up to 32GB RAM

How much storage does your laptop have?
512GB Storage

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

Approximately how many applications do you have installed?
47

Which application do you use the most?
Firefox

Can your laptop be charged with what type of plug?
Pin

Which I/O ports can you visually see on your laptop?
HDMI
USB type C
SDCard slot
Pin for charging
USB port

Assignment 3.3: Power to the laptop

What is the input voltage?
100-240V AC

What is the output voltage?
19.5V DC

How many watts can your power adapter deliver?
45W

Is the input voltage AC or DC?
AC

Is the output voltage AC or DC?
DC

AC/DC what is that?
AC Alternating Current, de stroom verandert van richting dit is de standaard vorm van elektriciteit zoals geleverd door stopcontacted

DC Direct Current, de stroom gaat via 1 richting, bijvoorbeeld laptops werken op gelijk stroom

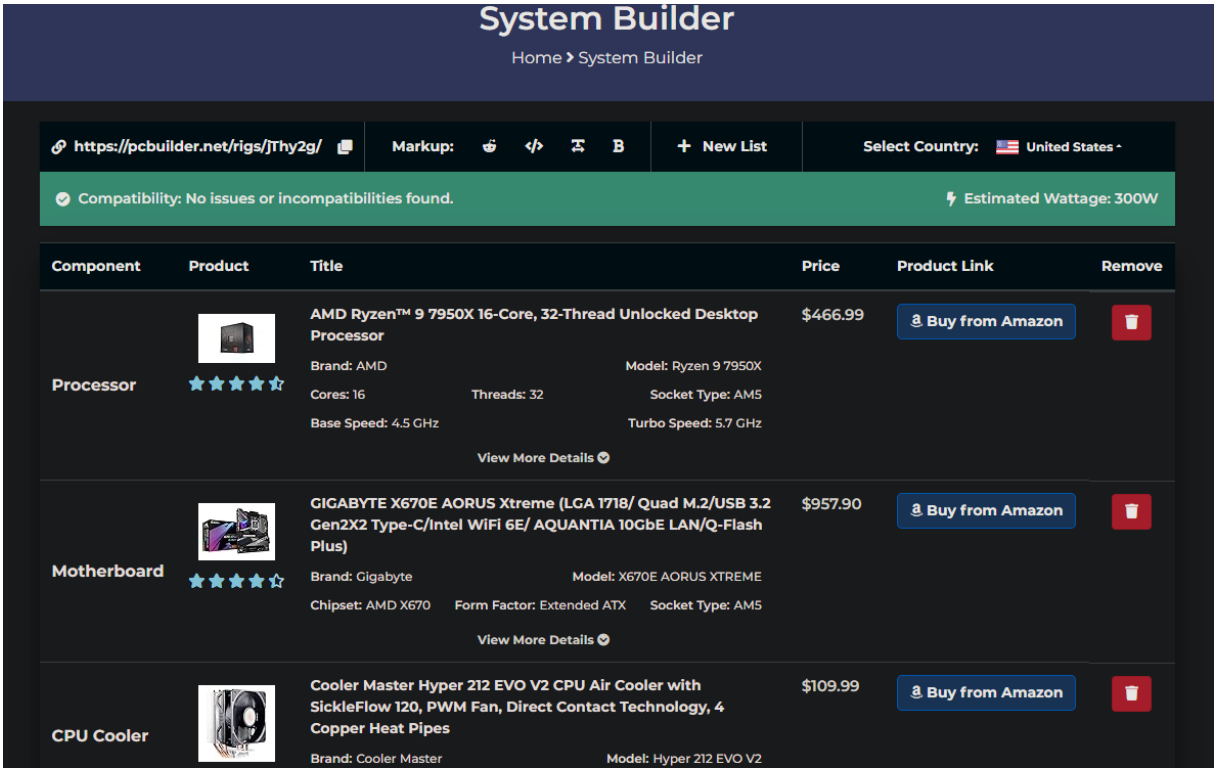
If you reverse the polarity of the output voltage, is that bad for your laptop?
Ja want dan draai je de positieve met de negatieve aansluiting om

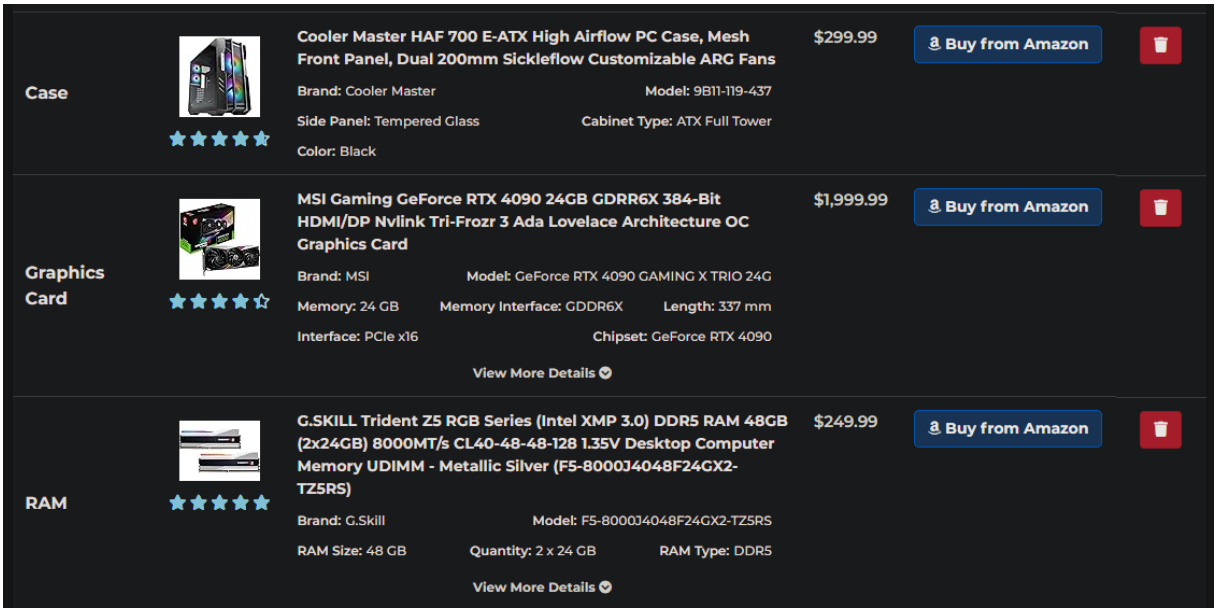
You forgot your power adapter, your laptop normally needs 15 watts. You will be loaned a power adapter that can deliver 50 watts. Voltage, polarity, etc. are all the same compared to the original power adapter. You can connect the borrowed power adapter to your laptop. What will happen? Also explain why you think that.

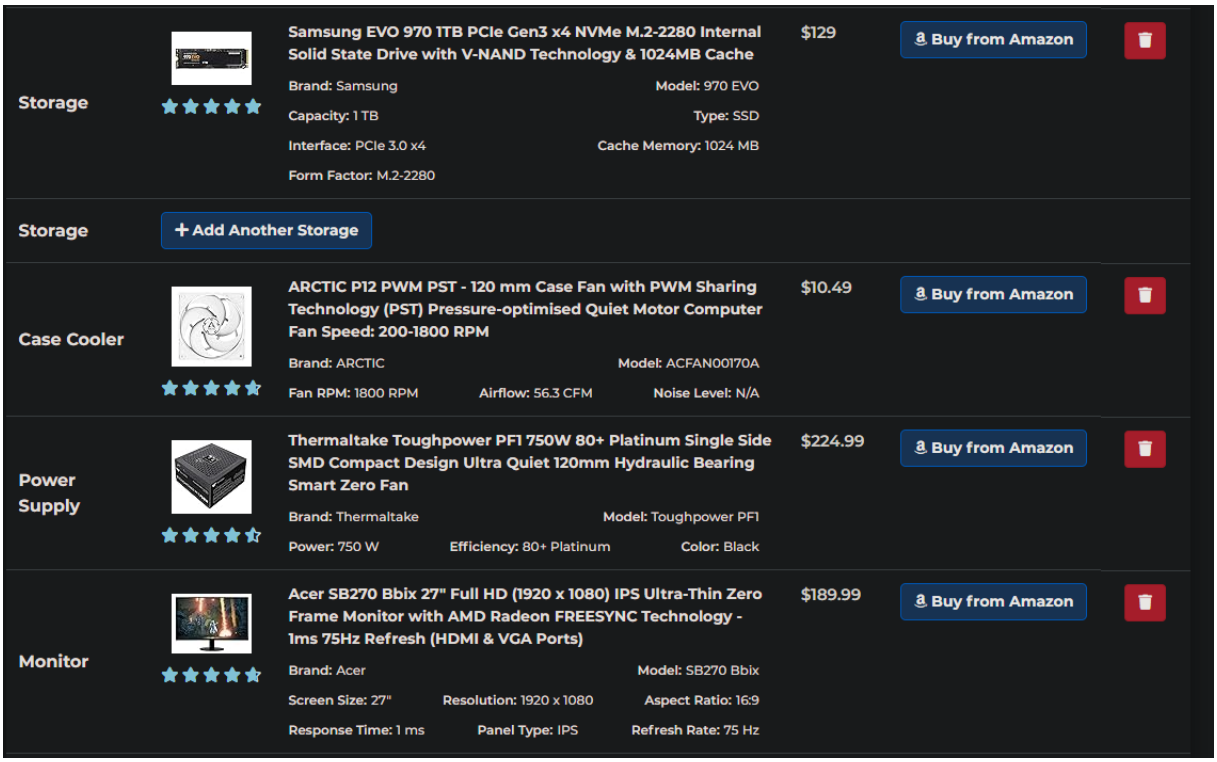
Ja, je kunt de geleende adapter van 50W veilig gebruiken, omdat je laptop slechts 15W nodig heeft en alleen de benodigde hoeveelheid stroom trekt, zolang de spanning en polariteit hetzelfde zijn.

Assignment 3.4: Build your dream PC

Screenshots PC configuration + motivation:







Ik heb deze onderdelen gekozen omdat ik een snelle en krachtige PC wil bouwen die geschikt is voor gamen, multitasken en creatieve dingen zoals videobewerking en virtualisatie. De AMD Ryzen 9 7950X processor is een beest, met 16 kernen en 32 threads, ideaal voor zware programma's. Het GIGABYTE X670E AORUS XTREME moederbord is gekozen omdat het de nieuwste tech ondersteunt, zoals PCIe 5.0 en DDR5, waardoor ik in de toekomst makkelijk kan upgraden. De Cooler Master Hyper 212 EVO V2 zorgt dat de CPU goed koel blijft en is lekker stil. Voor de case heb ik de Cooler Master HAF 700 gekozen, omdat die lekker ruim is, goede airflow heeft en ook nog eens cool uitziet met RGB-verlichting.

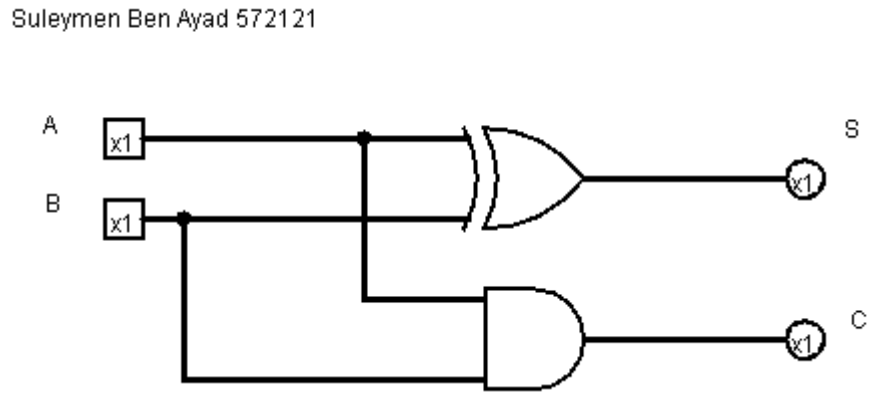
De videokaart, de MSI GeForce RTX 4090, is een monster. Hiermee kan ik alle games op ultra-instellingen spelen en het is ook top voor 3D-rendering. Het werkgeheugen, G.SKILL Trident Z5 RGB DDR5 (2x24GB), is super snel en 48 GB is meer dan genoeg voor alles wat ik wil doen. Voor opslag heb ik gekozen voor de Samsung EVO 970 1TB, een betrouwbare en snelle SSD voor mijn besturingssysteem en programma's. De voeding, Thermaltake Toughpower PF1 750W, geeft genoeg power voor de hele build. Als laatste heb ik gekozen voor de Acer SB270 Bbix 27" monitor, omdat deze een mooie resolutie heeft en chill is voor werk en gamen.

Bonus point assignment – week 3

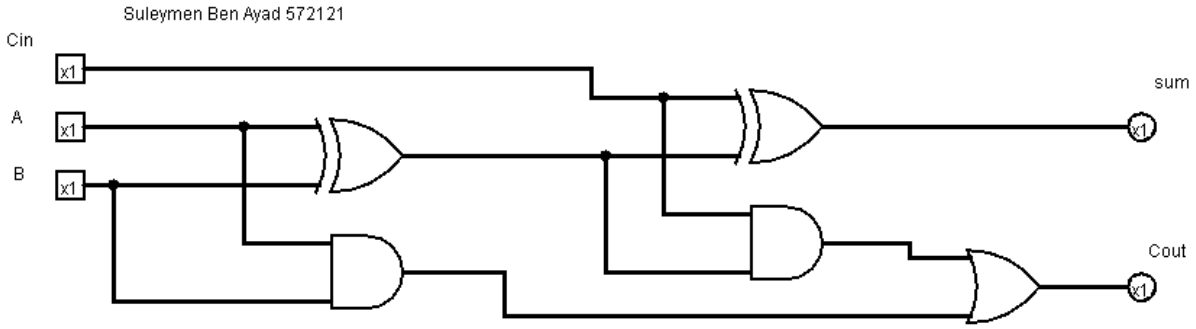
Complete the **half adder**, **full adder** and **4-bit adder** assignment as described in the PowerPoint slides of week 3 in Logisim. Save the chip design and export three PNG pictures of the separate finished designs. See the PowerPoint slides of week 3.

Paste the three exported PNG pictures in here.

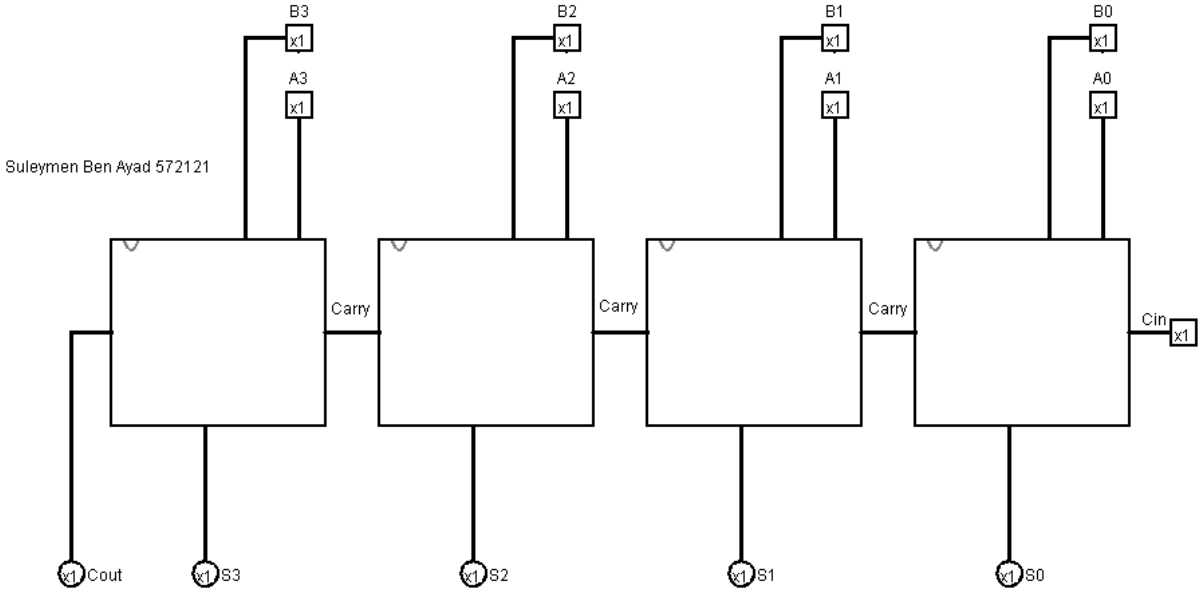
Half Adder



Full Adder



4-bit Adder



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