Template Week 3 – Hardware

Student number: 566107

Assignment 3.1: Examine your phone

What processor is in your phone? Google Tensor G2

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

How much RAM is in it? 8GB

How much storage does your phone have? 128GB

What operating system is running on your phone? Stock android 15

Approximately how many applications do you have installed? Around 165

Which application do you use the most? Spotify, Youtube and discord

Can your phone be charged with what type of plug? It uses USB C

Which I/O ports can you visually see on your phone? It has a USB C port

Assignment 3.2: Examine your laptop

What processor is in your laptop? Intel I7-12650H

To which architecture family does this processor belong? In other words, which Instruction Set Architecture (ISA) is used? X64

How much RAM is in it? 32GB @ 4800mhz

How much storage does your laptop have? 2 x 1TB

Which operating system is running on your laptop? Windows 11 Build 26100.2314

Approximately how many applications do you have installed? Around 152

Which application do you use the most? Mostly discord, VScode, Intellij, PHPStorm and a bit of Magic the gathering online client

Can your laptop be charged with what type of plug? It uses a barrel plug

Which I/O ports can you visually see on your laptop? Ethernet port, 3 USB A ports, Mic and headset in, USB C, HDMI and the barrel jack

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? It can deliver 240W

Is the input voltage AC or DC? The input voltage is AC

Is the output voltage AC or DC? The output voltage is DC

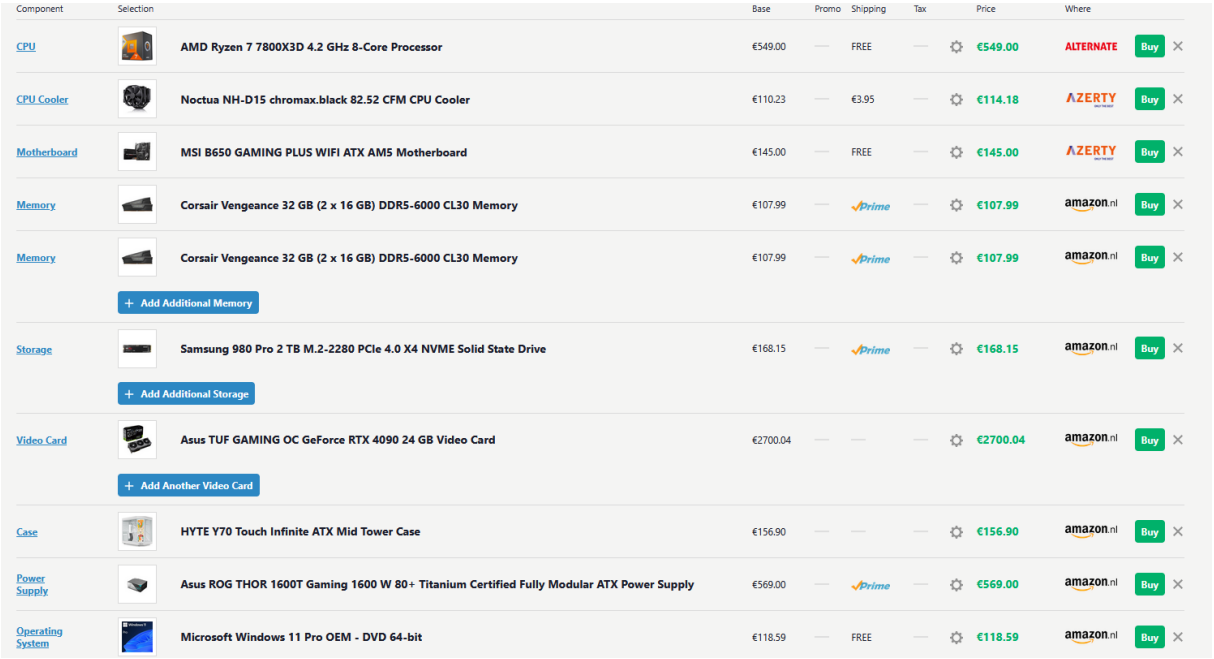
AC/DC what is that? AC stands for Alternating current and DC for direct current this means that the voltage from AC can differ in an amount of time while DC will remain at a constant voltage.

If you reverse the polarity of the output voltage, is that bad for your laptop? Yes, your power supply will die and you might see it catch flames if you are lucky.

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. Yes you can use the adapter, as the laptop will only draw the 15 watt it requires. The adapter is capable of putting out 50 watts but that does not mean it forces the device connected to draw 50 watts.

Assignment 3.4: Build your dream PC

Screenshots PC configuration + motivation:



Component	Selection	Base	Promo	Shipping	Tax	Price	Where
CPU	AMD Ryzen 7 7800X3D 4.2 GHz 8-Core Processor	€549.00	—	FREE	—	€549.00	ALTERNATE Buy
CPU Cooler	Noctua NH-D15 chromax.black 82.52 CFM CPU Cooler	€110.23	—	€3.95	—	€114.18	AZERTY Buy
Motherboard	MSI B650 GAMING PLUS WIFI ATX AM5 Motherboard	€145.00	—	FREE	—	€145.00	AZERTY Buy
Memory	Corsair Vengeance 32 GB (2 x 16 GB) DDR5-6000 CL30 Memory	€107.99	—	Prime	—	€107.99	amazon.nl Buy
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	+ Add Additional Memory						
Storage	Samsung 980 Pro 2 TB M.2-2280 PCIe 4.0 X4 NVME Solid State Drive	€168.15	—	Prime	—	€168.15	amazon.nl Buy
	+ Add Additional Storage						
Video Card	Asus TUF GAMING OC GeForce RTX 4090 24 GB Video Card	€2700.04	—	—	—	€2700.04	amazon.nl Buy
	+ Add Another Video Card						
Case	HYTE Y70 Touch Infinite ATX Mid Tower Case	€156.90	—	—	—	€156.90	amazon.nl Buy
Power Supply	Asus ROG THOR 1600T Gaming 1600 W 80+ Titanium Certified Fully Modular ATX Power Supply	€569.00	—	Prime	—	€569.00	amazon.nl Buy
Operating System	Microsoft Windows 11 Pro OEM - DVD 64-bit	€118.59	—	FREE	—	€118.59	amazon.nl Buy

The ryzen 7 is currently the top dog cpu for gaming tasks, personally I find air coolers much safer, so I have chosen the best aircooler in the market. Motherboard is just a random one ngl. I've picked 64GB DDR5-6000mhz ram with a low CL30 timing. I don't use a lot of space on my computer so a 2TB 980 will do just fine, the Samsung 990 PRO has some relatability issues hence why I didn't go for the newer one. And yeah a 4090 just the best card you can get at the moment. Pair that with a nice case which includes a screen. And I chose a big PSU to power the whole pc as you should never spare bucks on a PSU.

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 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.

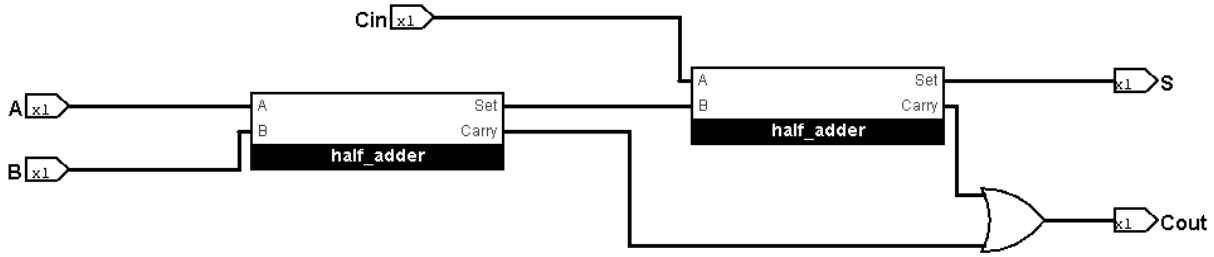

Figure 1full adder

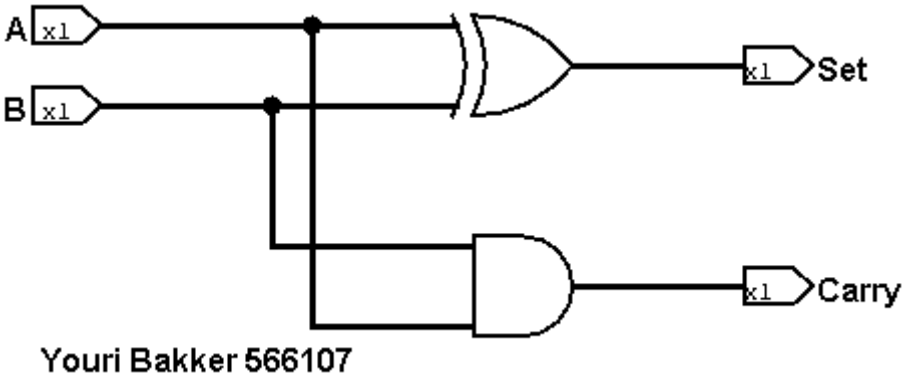

Figure 2 half adder

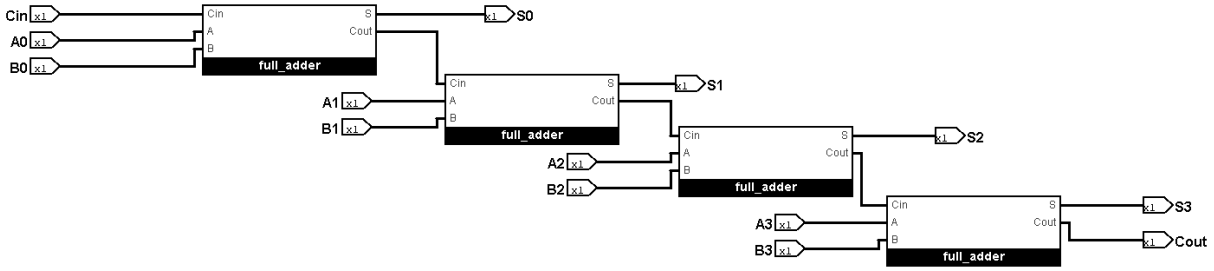

Figure 3 4-bit adder

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