

# mmmTemplate Week 3 – Hardware

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## Assignment 3.1: Examine your phone

What processor is in your phone?

Qualcomm Snapdragon 730

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

Snapdragon 730 uses the ARM Cortex architecture, the ISA is ARMv8-A

How much RAM is in it?

8GB

How much storage does your phone have?

128GB

What operating system is running on your phone?

Android 13

Approximately how many applications do you have installed?

40

Which application do you use the most?

Firefox

Can your phone be charged with what type of plug?

USB-C

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

USB-C and an audio jack

### **Assignment 3.2: Examine your laptop**

What processor is in your laptop?

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

x86-64 architecture family, based on the Intel 64 Instruction Set Architecture

How much RAM is in it?

16

How much storage does your laptop have?

512

Which operating system is running on your laptop?

Windows 11

Approximately how many applications do you have installed?

40

Which application do you use the most?

Opera

Can your laptop be charged with what type of plug?

Barrel-type DC adapter

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

2x USB-C

2x USB-A

1x HDMI

Audio and microphone jacks, 1 each

Ethernet port

SD card reader

DC barrel port

### **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?

180W

Is the input voltage AC or DC?

AC

Is the output voltage AC or DC?

DC

AC/DC what is that?

AC: alternating current

DC: direct current

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

Yes











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.

The laptop will work fine. It will only draw the 15 watts it needs, regardless of the adapter's 50-watt capacity, as long as voltage, polarity, and connector match

### Assignment 3.4: Build your dream PC

Screenshots PC configuration + motivation:

<a href="#">CPU</a>		AMD Ryzen 7 9800X3D 4.7 GHz 8-Core Processor	€649.00	—	FREE	—	⚙️	€649.00	ALTERNATE	Buy	×
<a href="#">CPU Cooler</a>		NZXT Kraken X73 RGB 52.44 CFM Liquid CPU Cooler	€479.19	—	—	—	⚙️	€479.19	amazon.nl	Buy	×
<a href="#">Motherboard</a>		Asus ROG STRIX X870-A GAMING WIFI ATX AM5 Motherboard	€419.00	—	Prime	—	⚙️	€419.00	amazon.nl	Buy	×
<a href="#">Memory</a>		Corsair Dominator Titanium 64 GB (4 x 16 GB) DDR5-6400 CL32 Memory	€386.00	—	Prime	—	⚙️	€386.00	amazon.nl	Buy	×
	+ Add Additional Memory										
<a href="#">Storage</a>		Samsung 990 EVO 2 TB M.2-2280 PCIe 5.0 X2 NVME Solid State Drive	€121.99	—	Prime	—	⚙️	€121.99	amazon.nl	Buy	×
	+ Add Additional Storage										
<a href="#">Video Card</a>		Asus ROG STRIX GAMING OC GeForce RTX 4090 24 GB Video Card	€3982.32	—	—	—	⚙️	€3982.32	amazon.nl	Buy	×
	+ Add Another Video Card										
<a href="#">Case</a>		Fractal Design North XL ATX Full Tower Case	€145.94	—	Prime	—	⚙️	€145.94	amazon.nl	Buy	×
<a href="#">Power Supply</a>		Corsair RM850e (2023) 850 W 80+ Gold Certified Fully Modular ATX Power Supply	€106.90	—	Prime	—	⚙️	€106.90	amazon.nl	Buy	×
<a href="#">Operating System</a>		Microsoft Windows 11 Pro Retail - Download 64-bit	€79.00	—	—	—	⚙️	€79.00	amazon.nl	Buy	×
<a href="#">Monitor</a>		LG UltraGear 34G595QE-B 34.0" 3440 x 1440 240 Hz Monitor	€799.00	—	FREE	—	⚙️	€799.00	ALTERNATE	Buy	×
	+ Add Another Monitor										

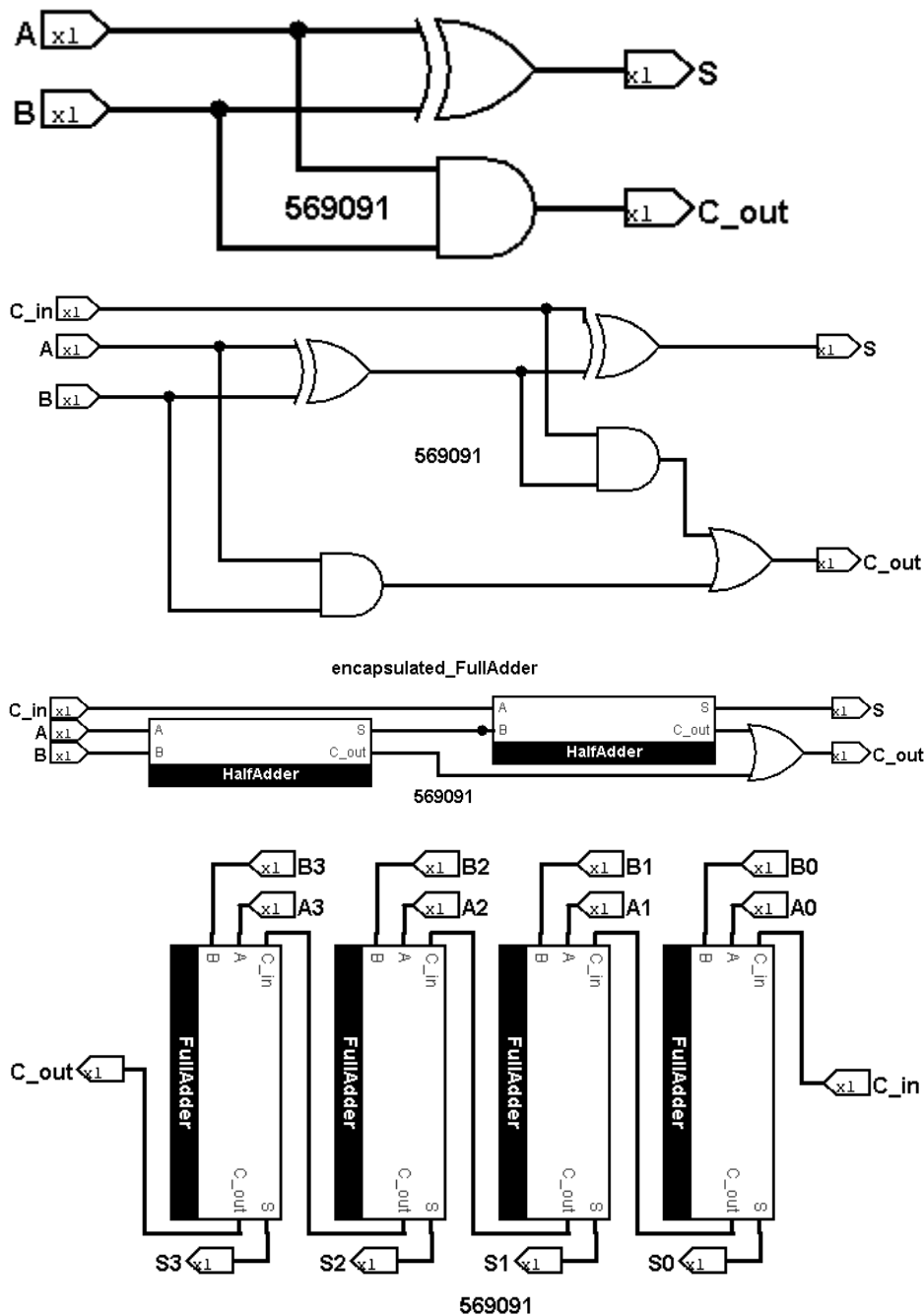
Expensive components good.

Serious explanation: These are some of the current generations best components, no budget thought was done here.

### 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.



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