Template Week 3 – Hardware

Student number: 578688

Assignment 3.1: Examine your phone

What processor is in your phone?

Snapdragon 8 Elite

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?

12

How much storage does your phone have?

256 GB

What operating system is running on your phone?

Android 16

Approximately how many applications do you have installed?

59

Which application do you use the most?

Youtube

Can your phone be charged with what type of plug?

USB-C

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

Power Button, Volume buttons, USB-C charging port, Sim Card Tray

Assignment 3.2: Examine your laptop

What processor is in your laptop?

Intel Core i7-1355u 13th Gen

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?

16 GB

How much storage does your laptop have?

1 TB

Which operating system is running on your laptop?

Windows 11

Approximately how many applications do you have installed?

192

Which application do you use the most?

Chrome

Can your laptop be charged with what type of plug?

USB-C

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

USB-C ports, USB-A, 3.5mm Jack, SD, HDMI port

Assignment 3.3: Power to the laptop

What is the input voltage?

240 V

What is the output voltage?

20 V

How many watts can your power adapter deliver?

65 W

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, Alternating current has an oscillating magnitude.

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

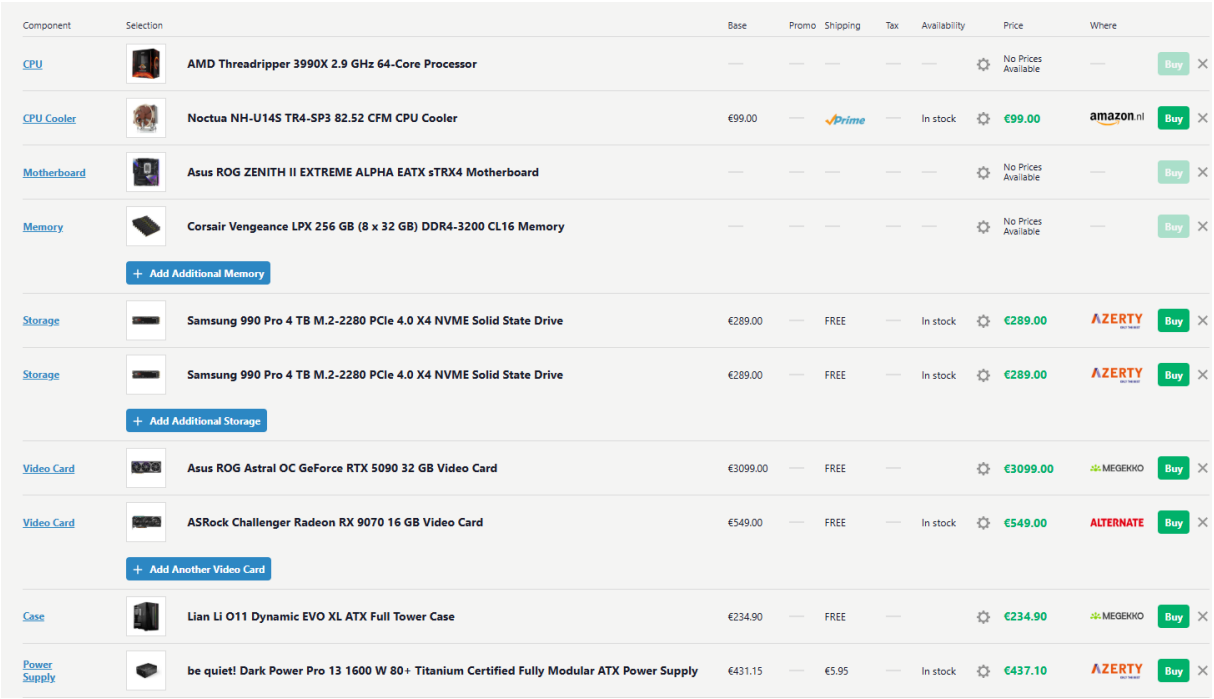
Yes, it would deliver current in the wrong direction therefore ruining the laptop.

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.

My laptop would eventually get damaged since the excess power would cause an excess of heat to be produced therefore ruining the components in the laptop.

Assignment 3.4: Build your dream PC

Screenshots PC configuration + motivation:



Component	Selection	Base	Promo	Shipping	Tax	Availability	Price	Where
CPU	AMD Threadripper 3990X 2.9 GHz 64-Core Processor	—	—	—	—	—	No Prices Available	—
CPU Cooler	Noctua NH-U14S TR4-SP3 82.52 CFM CPU Cooler	€99.00	—	Prime	—	In stock	€99.00	amazon.nl
Motherboard	Asus ROG ZENITH II EXTREME ALPHA EATX sTRX4 Motherboard	—	—	—	—	—	No Prices Available	—
Memory	Corsair Vengeance LPX 256 GB (8 x 32 GB) DDR4-3200 CL16 Memory	—	—	—	—	—	No Prices Available	—
	+ Add Additional Memory							
Storage	Samsung 990 Pro 4 TB M.2-2280 PCIe 4.0 X4 NVME Solid State Drive	€289.00	—	FREE	—	In stock	€289.00	AZERTY
Storage	Samsung 990 Pro 4 TB M.2-2280 PCIe 4.0 X4 NVME Solid State Drive	€289.00	—	FREE	—	In stock	€289.00	AZERTY
	+ Add Additional Storage							
Video Card	Asus ROG Astral OC GeForce RTX 5090 32 GB Video Card	€3099.00	—	FREE	—		€3099.00	MEGEKKO
Video Card	ASRock Challenger Radeon RX 9070 16 GB Video Card	€549.00	—	FREE	—	In stock	€549.00	ALTERNATE
	+ Add Another Video Card							
Case	Lian Li O11 Dynamic EVO XL ATX Full Tower Case	€234.90	—	FREE	—		€234.90	MEGEKKO
Power Supply	be quiet! Dark Power Pro 13 1600 W 80+ Titanium Certified Fully Modular ATX Power Supply	€431.15	—	€5.95	—	In stock	€437.10	AZERTY

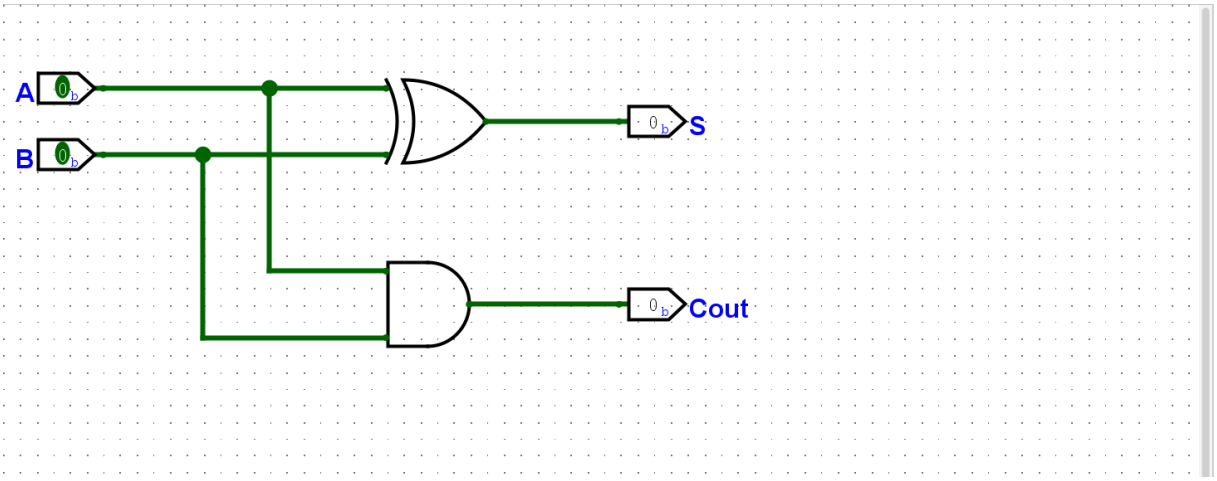
I put this PC together since it's powerful enough to do almost anything and everything that I might need from a PC.

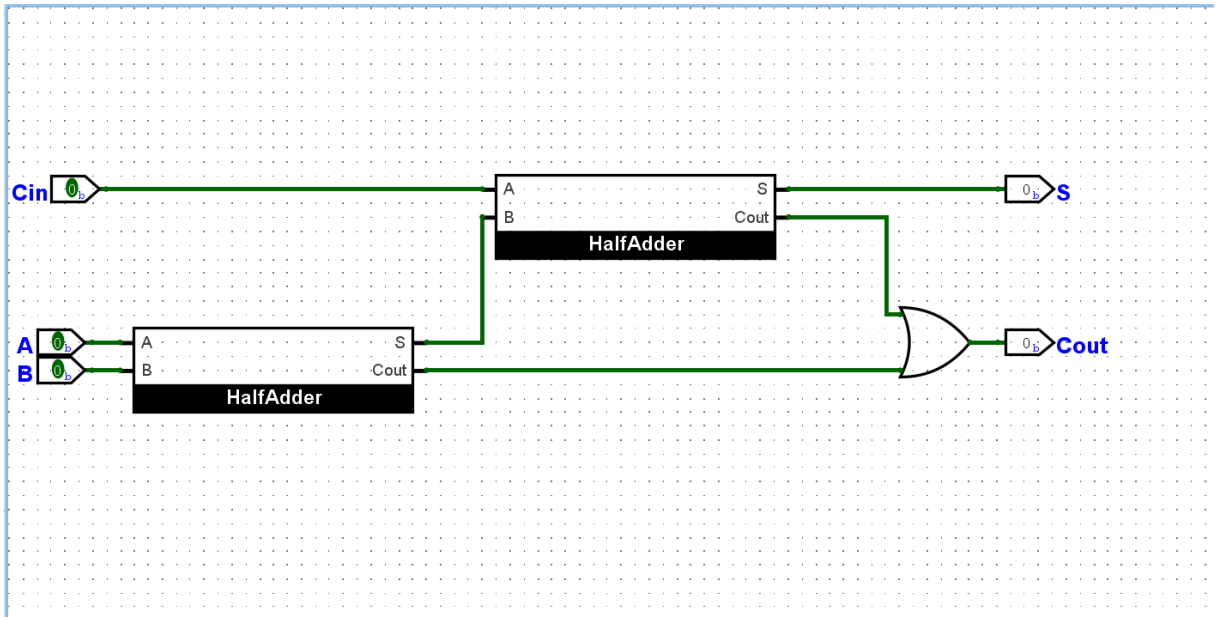
My laptop has 10 cores and 12 Threads, whereas the AMD Threadripper 3990X 2.9 GHz 64-Core Processor has 64 cores and 128 threads and is capable of simultaneous multithreading, making it capable of performing many processes at the same time. Furthermore, my laptop has 16 GB of RAM whereas this PC has 256 GB of RAM which compliments the powerful CPU allowing it to work near its limits and allowing me to perform multiple functions concurrently without any lag. I also chose 2 M.2 4TB SSD for storage since M.2 is the fastest when it comes to reading and writing info, I also chose 2 Graphics cards, each one dedicated for different functions, the RTX 5090 being a lot better than the RX 9070, it is dedicated for anything that is graphic intensive whereas the RX 9070 can be used to be able to multitask with a graphic intensive process without any latency related issues.

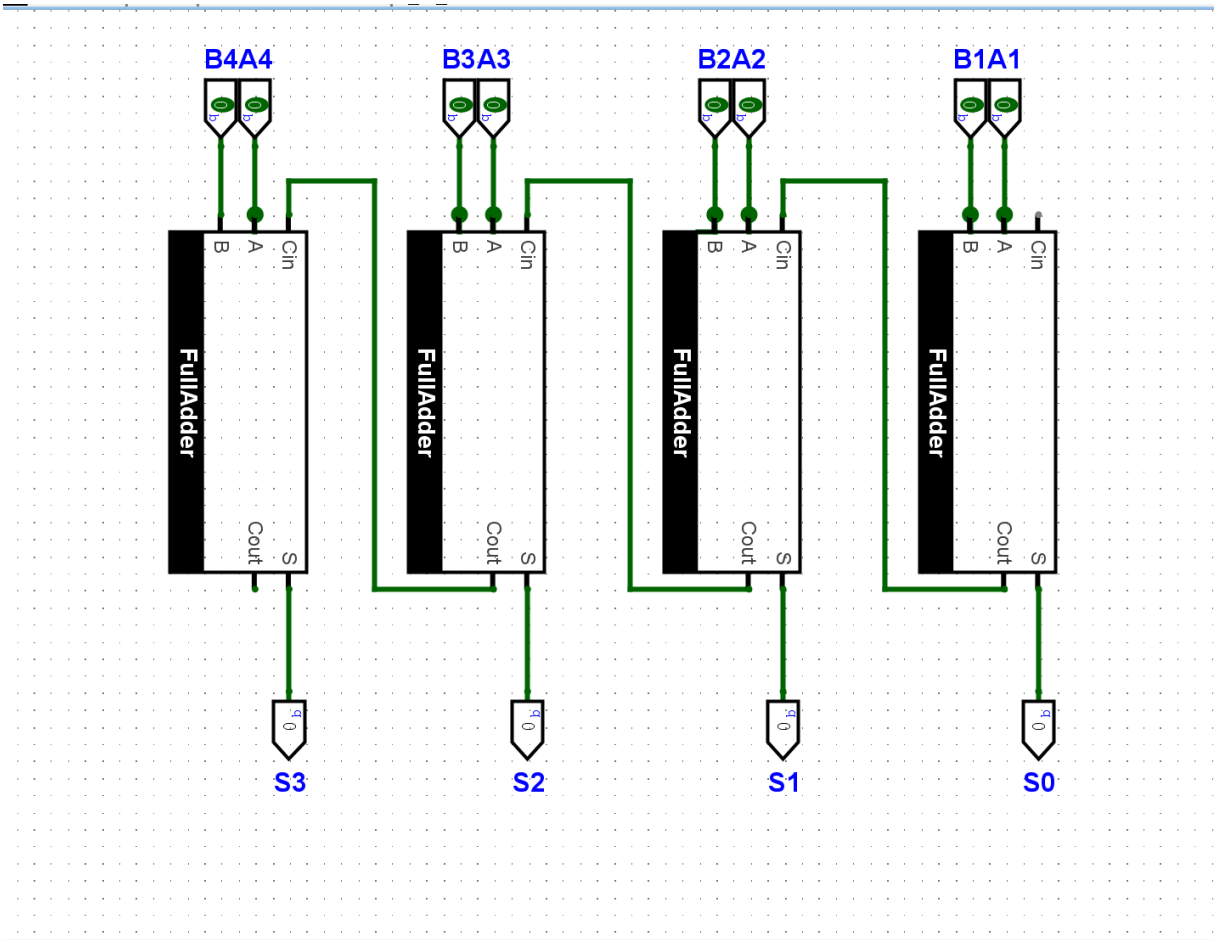
Assignment 3.5: Adders

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.







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