

Template Week 3 – Hardware

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Assignment 3.1: Examine your phone

What processor is in your phone?

Qualcomm 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?

12GB

How much storage does your phone have?

512GB

What operating system is running on your phone?

Android

Approximately how many applications do you have installed?

199 apps

Which application do you use the most?

Kingshot

Can your phone be charged with what type of plug?

USB Type-C

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

USB Type-C en simkaart houder

Assignment 3.2: Examine your laptop

What processor is in your laptop?

Intel Core i7 13th generation

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

ISA is X86-64 en de microarchitecture is Raptor Lake H

How much RAM is in it?

32 GB

How much storage does your laptop have?

1TB

Which operating system is running on your laptop?

Windows

Approximately how many applications do you have installed?

79 apps

Which application do you use the most?

Brave Browser

Can your laptop be charged with what type of plug?

USB Type-C en

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

2x USB Type-B, 2x USB Type-C, HDMI, Ethernet, headphone jack en charging poort

Assignment 3.3: Power to the laptop

What is the input voltage?

100V-240V

What is the output voltage?

20.0V

How many watts can your power adapter deliver?

280W

Is the input voltage AC or DC?

AC

Is the output voltage AC or DC?

DC

AC/DC what is that?

AC is Alternating Current betekent dat de current positief en negatief golft. Dit komt ook uit onze stopcontact en wordt gebruikt voor lange afstanden tussen power transmission en de frequency is vaak tussen de 50 en 60 Hz in.

DC is Direct Current betekent dat het constant positief is of negatief. Dit komt voor in batterijen, mobiele en laptops. Alles wat een constante stroom nodig heeft gebruikt Direct Current

En als dit het niet betekent heb je ook nog de band AC/DC 😊

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














Ja want het kan ervoor zorgen dat je laptoponderdelen kapot maakt zoals je batterij, charging poort en interne componenten

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.

Ik denk dat er niks erg gaat gebeuren met de laptop want de laptop kan zelf kiezen hoeveel watt hij nodig heeft en dat is dus 15 watt maar als je een adapter neemt die minder dan 15 watt geeft zou het kunnen zijn dat het niet laat of de adapter oververhit

Assignment 3.4: Build your dream PC

Screenshots PC configuration + motivation:

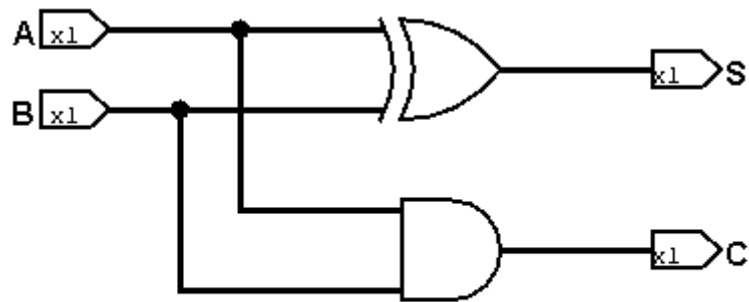
Component	Selection	Base	Promo	Shipping	Tax	Availability	Price	Where	
CPU	 Intel Core i7-14700K 3.4 GHz 20-Core Processor From parametric selection: • Intel Core i7-14700K 3.4 GHz 20-Core Processor	€359.00	—	FREE	—	In stock	€359.00	AZERTY	Buy ✕
CPU Cooler	 Thermalright Peerless Assassin 120 SE 66.17 CFM CPU Cooler From parametric selection: • Thermalright Peerless Assassin 120 SE 66.17 CFM CPU Cooler	€46.90	—		—	In stock	€46.90	amazon.nl	Buy ✕
Motherboard	 Asus ROG STRIX Z790-A GAMING WIFI II ATX LGA1700 Motherboard From parametric selection: • Asus ROG STRIX Z790-A GAMING WIFI II ATX LGA1700 Motherboard	€1477.15	—	FREE	—	In stock	€1477.15	AZERTY	Buy ✕
Memory	 Corsair Vengeance RGB 32 GB (2 x 16 GB) DDR5-6000 CL36 Memory From parametric selection: • Corsair Vengeance RGB 32 GB (2 x 16 GB) DDR5-6000 CL36 Memory + Add Additional Memory	€469.00	—	FREE	—	In stock	€469.00	bol.	Buy ✕
Storage	 Samsung 990 Pro 2 TB M.2-2280 PCIe 4.0 X4 NVME Solid State Drive From parametric selection: • Samsung 990 Pro 2 TB M.2-2280 PCIe 4.0 X4 NVME Solid State Drive + Add Additional Storage	€228.90	—		—	In stock	€228.90	amazon.nl	Buy ✕
Video Card	 Asus ROG Astral OC GeForce RTX 5090 32 GB Video Card From parametric selection: • Asus ROG Astral OC GeForce RTX 5090 32 GB Video Card + Add Another Video Card	€3180.00	—		—	Available soon	€3180.00	amazon.nl	Buy ✕
Case	 Corsair 3500X ARGB ATX Mid Tower Case From parametric selection: • Corsair 3500X ARGB ATX Mid Tower Case	€129.00	—	FREE	—	In stock	€129.00	ALTERNATE	Buy ✕
Power Supply	 Asus TUF Gaming 1000G 1000 W 80+ Gold Certified Fully Modular ATX Power Supply From parametric selection: • Asus TUF Gaming 1000G 1000 W 80+ Gold Certified Fully Modular ATX Power Supply	€145.68	—		—	In stock	€145.68	amazon.nl	Buy ✕
Operating System	 Microsoft Windows 11 Home Retail - USB 64-bit From parametric selection: • Microsoft Windows 11 Home Retail - USB 64-bit	€132.95	—	FREE	—		€132.95	MEGEKKO	Buy ✕
Monitor	From parametric selection: • Asus ROG Swift OLED PG32UCDM 31.5" 3840 x 2160 240 Hz Monitor + Add Another Monitor	—	—	—	—		No Prices Available		Buy ✕

Er zit een betere gpu erin en grotere geheugen want deze laptop heeft een 4080 rtx erin en 1 tb geheugen

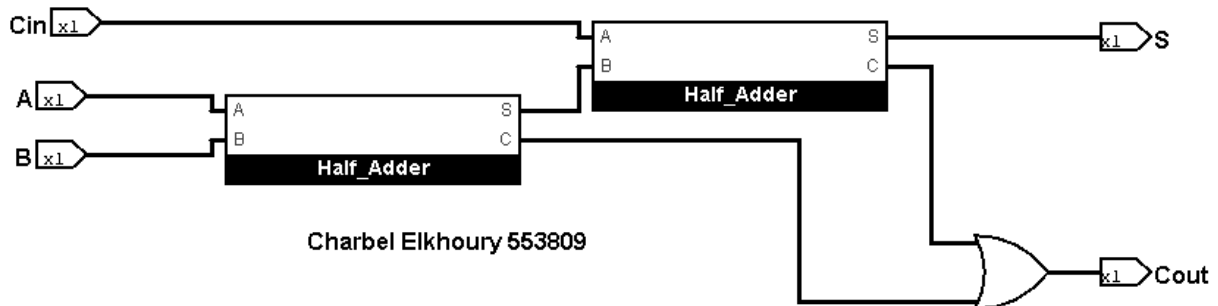
Assignment 3.5: Adders

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.

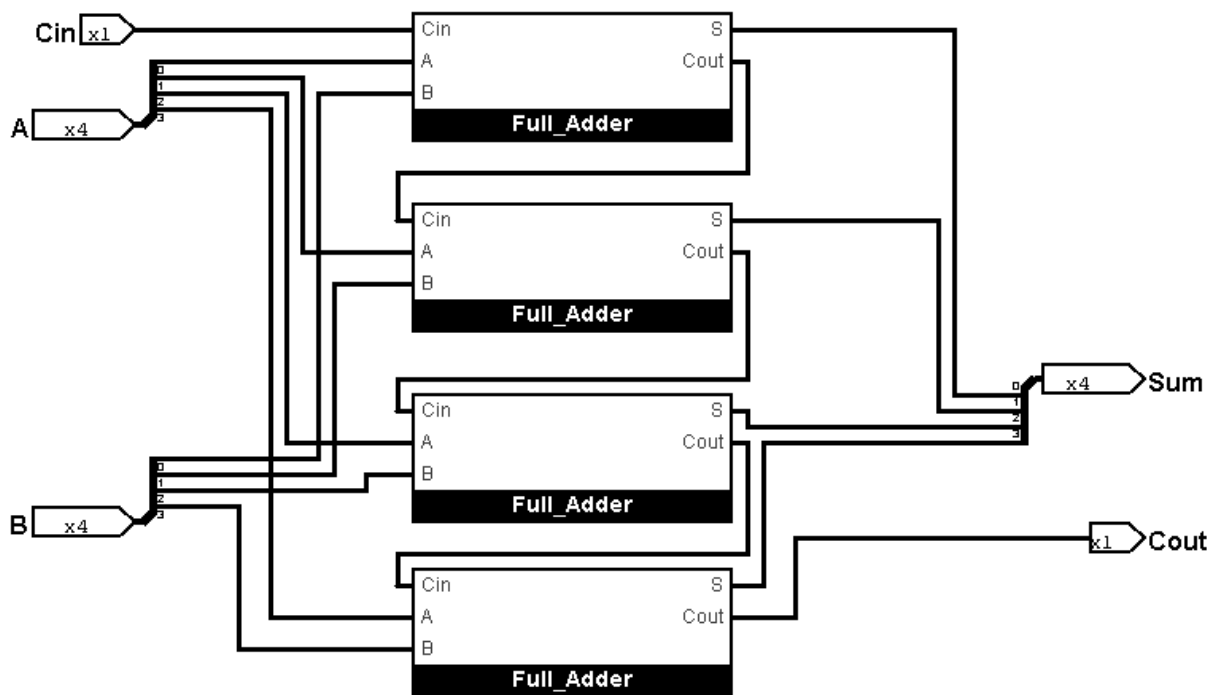
Paste the three exported PNG pictures in here.



Charbel Elkhoury 553809



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