

Template Week 3 – Hardware

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Assignment 3.1: Examine your phone

What processor is in your phone? **Apple A16 Bionic**

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? **6GB**

How much storage does your phone have? **128GB**

What operating system is running on your phone? **IOS 26.1**

Approximately how many applications do you have installed? **Around 100 apps**

Which application do you use the most? **Tiktok**

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 C port**

Assignment 3.2: Examine your laptop

What processor is in your laptop? **Ryzen 7 4800H**

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? **24GB**

How much storage does your laptop have? **1TB**

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

Approximately how many applications do you have installed? **208**

Which application do you use the most? **Google Chrome**

Can your laptop be charged with what type of plug? **ASUS barrel-type DC connector / Type C**

Which I/O ports can you visually see on your laptop? **Type C, USB2 and 3, RJ45 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? **20 x 9 = 180W**

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 its used to transmit power long distances since its direction changes periodically. DC is Direct current is when the current flows in one direction**

If you reverse the polarity of the output voltage, is that bad for your laptop? **Yes its very bad as reversing polarity means swapping the Positive and negative meaning it could damage internal components.**

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 connect it since the laptop will only draw the amount needed from the power adapter, as long as the polarity match. The 50W is just extra capacity so the adapter can supply more if needed.

Assignment 3.4: Build your dream PC

Screenshots PC configuration + motivation:

Component	Selection	Base	Promo	Shipping	Tax	Availability	Price	Where	
CPU	 AMD Ryzen 7 9800X3D 4.7 GHz 8-Core Processor	€419.90	—	✓Prime	—	In stock	€419.90	amazon.nl	<button>Buy</button> X
CPU Cooler	 ARCTIC Liquid Freezer III Pro 360 77 CFM Liquid CPU Cooler	€84.99	—	✓Prime	—	Available soon	€84.99	amazon.nl	<button>Buy</button> X
Motherboard	 MSI MAG B850 TOMAHAWK MAX WIFI ATX AM5 Motherboard	€253.99	—	✓Prime	—	In stock	€253.99	amazon.nl	<button>Buy</button> X
Memory	 Corsair Vengeance RGB 64 GB (2 x 32 GB) DDR5-6000 CL30 Memory	€849.00	—	FREE	—	—	€849.00	MEGEKRO	<button>Buy</button> X
	+ Add Additional Memory								
Storage	 Samsung 990 Pro 2 TB M.2-2280 PCIe 4.0 X4 NVME Solid State Drive	€159.00	—	✓Prime	—	In stock	€159.00	amazon.nl	<button>Buy</button> X
Storage	 Samsung 990 Pro 4 TB M.2-2280 PCIe 4.0 X4 NVME Solid State Drive	€289.00	—	FREE	—	—	€289.00	PARADIGIT	<button>Buy</button> X
	+ Add Additional Storage								
Video Card	 Asus TUF GAMING GeForce RTX 5090 32 GB Video Card	€2899.00	—	FREE	—	—	€2899.00	MEGEKRO	<button>Buy</button> X
	+ Add Another Video Card								
Case	 HYTE Y70 Touch Infinite ATX Mid Tower Case	€212.48	—	—	—	In stock	€212.48	amazon.nl	<button>Buy</button> X
Power Supply	 Corsair RM1000x (2024) 1000 W Fully Modular ATX Power Supply	€159.90	—	✓Prime	—	In stock	€159.90	amazon.nl	<button>Buy</button> X

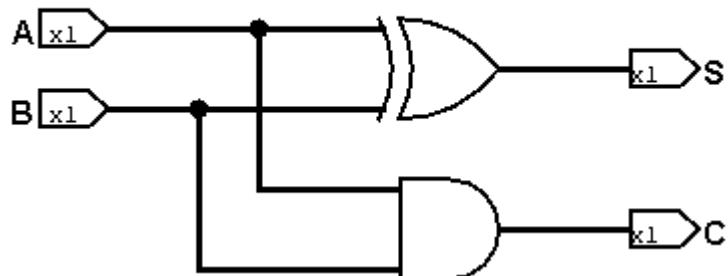
Motivation for this build is that its an overkill pc for streaming and gaming. I've always wanted to play games at high fps and stream at the same time and with a Ryzen 7 9800X3D and a 5090 it could do the job very easily. 2TB drive for OS, document, and windows applications and the rest 4TB as a game drive.

Assignment 3.5: Adders

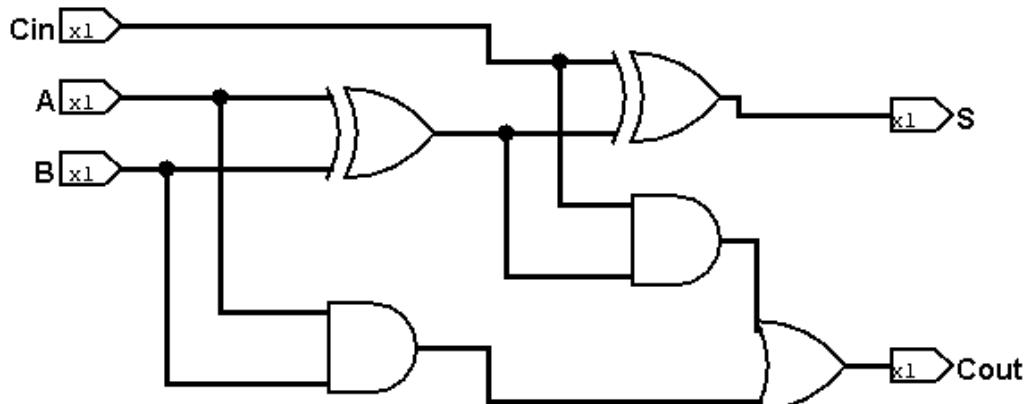
Complete the **half adder**, **full adder** and **4-bit adder** assignment as described in the PowerPoint slides of week 3 in Logisim. Save the chip design and also export three PNG pictures of the separate finished designs. See the PowerPoint slides of week 3.

Paste the three exported PNG pictures in here.

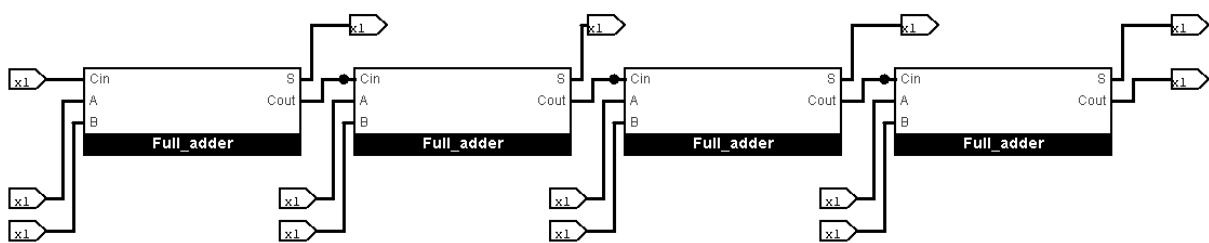
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