

Week 3 – Hardware

Student number: 579444

Assignment 3.1: Examine your phone

What processor is in your phone?

Dimensity 8400-Ultra Octa-core Max 3,25GHz

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

ARMv9.2

How much RAM is in it?

12 + 6 GB

How much storage does your phone have?

512 + 16 GB

What operating system is running on your phone?

Xiaomi's HyperOS 2

Approximately how many applications do you have installed?

~161 installed apps

Which application do you use the most?

Instagram and YouTube

Can your phone be charged with what type of plug?

It can be charged with USB-C.

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

Only the charging port – it doesn't have a jack on the upper side.

Assignment 3.2: Examine your laptop

What processor is in your laptop?

AMD Ryzen 7 Pro 4750U

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?

477 GB

Which operating system is running on your laptop?

Windows 11 Pro

Approximately how many applications do you have installed?

~80 applications

Which application do you use the most?

Discord

Can your laptop be charged with what type of plug?

It can be charged with USB-C.

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

I have 2 USB ports, 1 USB-C port, 1 HDMI port, 1 jack, 1 SD Card port and 1 other that I don't know what exactly it is.

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?

65 W

Is the input voltage AC or DC?

AC

Is the output voltage AC or DC?

DC

AC/DC what is that?

AC/DC stands for Alternating Current/Directive Current.

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

Yes, it's really bad, because some of the components allow current flow in only one direction.



























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.

It will work, because the laptop will get the 15 watts it needs, because the 50 watts the adapter provides is just available power, not forced power.

Assignment 3.4: Build your dream PC

Screenshots PC configuration + motivation:

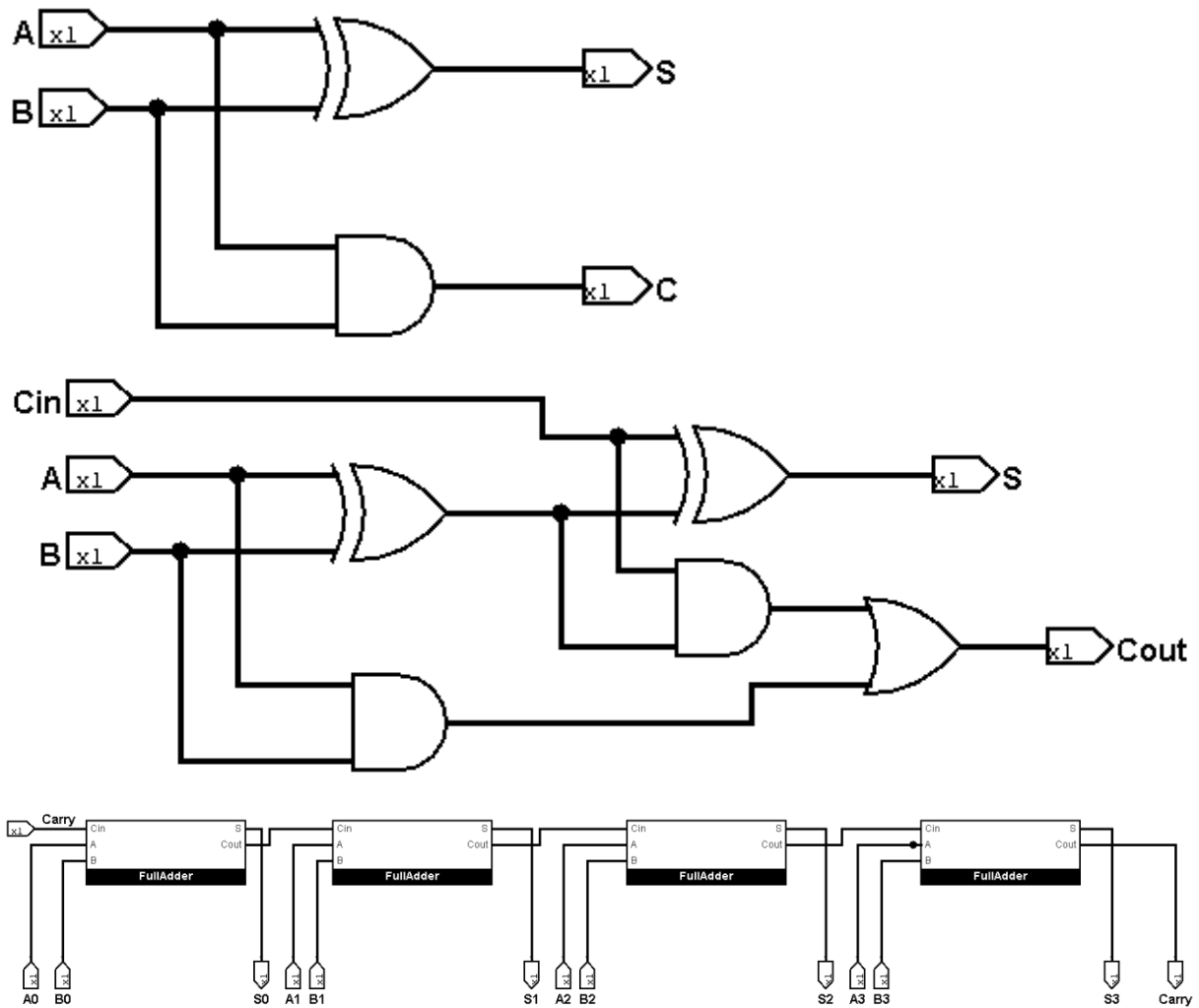
<https://nl.pcpartpicker.com/list/Ty2VqH>

Component	Selection	Base	Promo	Shipping	Tax	Availability	Price	Where	
CPU	 AMD Ryzen 5 7600X 4.7 GHz 6-Core Processor	€179.90	—		—	In stock	€179.90		Buy
CPU Cooler	 Thermalright Peerless Assassin 120 SE 66.17 CFM CPU Cooler	€45.90	—		—	In stock	€45.90		Buy
Motherboard	 Asus TUF GAMING B850-PLUS WIFI ATX AM5 Motherboard	€209.00	—	FREE	—	In stock	€209.00		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	€469.00	—	FREE	—	In stock	€469.00		Buy
Storage	 Samsung 990 Pro 2 TB M.2-2280 PCIe 4.0 X4 NVME Solid State Drive	€219.00	—		—	In stock	€219.00		Buy
Video Card	 Gigabyte WINDFORCE OC SFF GeForce RTX 5070 12 GB Video Card From parametric selection: • Gigabyte WINDFORCE OC SFF GeForce RTX 5070 12 GB Video Card	€619.00	—	FREE	—	In stock	€619.00		Buy
Case	 Corsair 3500X ARGB ATX Mid Tower Case	€129.00	—	FREE	—	In stock	€129.00		Buy
Case	 Corsair 3500X ARGB ATX Mid Tower Case	€129.00	—	FREE	—	In stock	€129.00		Buy
Power Supply	 MSI MAG A750GL PCIE5 750 W 80+ Gold Certified Fully Modular ATX Power Supply	€119.03	—	—	—	In stock	€119.03		Buy
Operating System	 Microsoft Windows 11 Pro Retail - Download 64-bit	€258.00	—	FREE	—	In stock	€258.00		Buy
Monitor	 Asus TUF Gaming VG27AQ 27.0" 2560 x 1440 165 Hz Monitor	€269.44	—		—	In stock	€269.44		Buy
Total:							€2517.27		

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.



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