Template Week 3 – Hardware

Student number:

Assignment 3.1: Examine your phone

What processor is in your phone?

Samsung Exynos 2200

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

ARMv9-A

How much RAM is in it?

12 GB

How much storage does your phone have?

512 GB

What operating system is running on your phone?

Android 16

Approximately how many applications do you have installed?

395 (Including system ones 750)

Which application do you use the most?

Free Adblocker Browser

Can your phone be charged with what type of plug?

C-Kabel

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

-Charge port

Assignment 3.2: Examine your laptop

What processor is in your laptop?

Intel(R) Core(TM) Ultra 7 155H

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

x86

How much RAM is in it?

16GB

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?

109

Which application do you use the most?

Firefox Developer Edition

Can your laptop be charged with what type of plug?

C-Kabel

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

-Charge Port

-HDMI port

-USB-A port 2x

-Headphone port

Assignment 3.3: Power to the laptop

What is the input voltage?

100-240V

What is the output voltage?

5-20V

How many watts can your power adapter deliver?

100W

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 get more watts that it needs to have. There are multiple possibilities, One the power port cant handle it and will break, Two the is some kind of limiter for the amount of watts and third it won't really matter that much and everything will just work fine.

Assignment 3.4: Build your dream PC

Screenshots PC configuration + motivation:

PC:

Component	Selection		Base	Promo	Shipping	Tax	Availability		Price	Where		
CPU		AMD Ryzen 9 9950X 4.3 GHz 16-Core Processor	€549.00	—	FREE	—	In stock	⚙	€549.00	ALTERNATE	Buy	×
CPU Cooler		ARCTIC Liquid Freezer III Pro 360 77 CFM Liquid CPU Cooler	€91.00	—	—	—	In stock	⚙	€91.00	amazon.nl	Buy	×
Motherboard		Asus ROG CROSSHAIR X870E EXTREME EATX AM5 Motherboard	€949.00	—	FREE	—	In stock	⚙	€949.00	ALTERNATE	Buy	×
Memory		G.Skill Trident Z5 Neo RGB 64 GB (2 x 32 GB) DDR5-6000 CL30 Memory	€689.00	—	FREE	—	In stock	⚙	€689.00	ALTERNATE	Buy	×
	+ Add Additional Memory											
Storage		Samsung 9100 PRO 8 TB M.2-2280 PCIe 5.0 X4 NVME Solid State Drive	€894.93	—	✓Prime	—	In stock	⚙	€894.93	amazon.nl	Buy	×
	+ Add Additional Storage											
Video Card		Asus ROG Astral OC GeForce RTX 5090 32 GB Video Card	€3099.00	—	FREE	—		⚙	€3099.00	MEGEKKO	Buy	×
	+ Add Another Video Card											
Case		HYTE Y70 Touch Infinite ATX Mid Tower Case	€399.00	—	€5.95	—	In stock	⚙	€404.95	AZERTY	Buy	×
Power Supply		Corsair RM1000x (2024) 1000 W Fully Modular ATX Power Supply	€159.90	—	FREE	—	Preorder	⚙	€159.90	ALTERNATE	Buy	×
Operating System		Microsoft Windows 11 Pro OEM - DVD 64-bit	€157.00	—	FREE	—		⚙	€157.00	PARADIGIT	Buy	×

Motivation:

CPU: Chose AMD for gaming purposes.

CPU Cooler: Liquid cooling, I find that it looks really good and it also good for cooling.

Motherboard: Overall everything that you need for the power of this PC. A max of 256 GB of Ram, up to DDR-5-9000 speed. Supports Wi-Fi 7 and can hold 5 M2 slots for storage, and it has a nice black/silver colour.

Memory: 64 GB, always have enough and no need to upgrade for a while.

Storage: 8TB, enough storage to store a lot of games.

Video Card: Able to run every game with a lot of FPS

Case: Just like the looks and has a little screen in the case.

Power Supply: 1000W, with everything I chose it needs a lot of power Estimated 932W.

OS: Windows 11 Pro, Handy for remote access etc.

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.
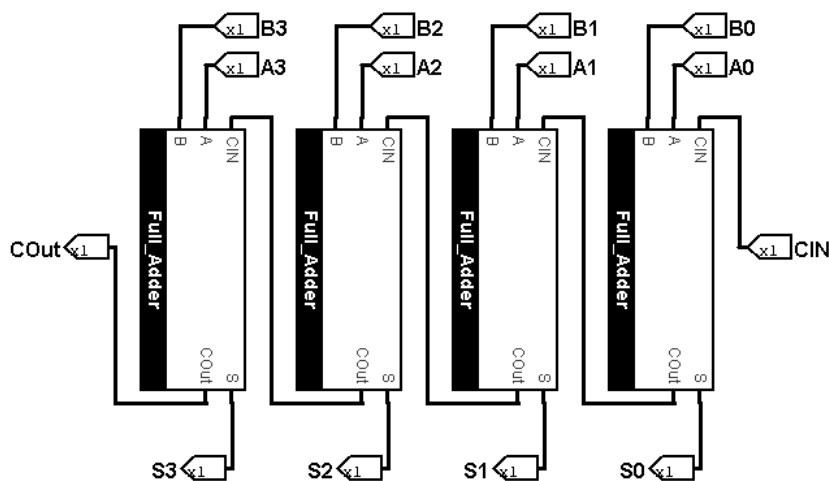
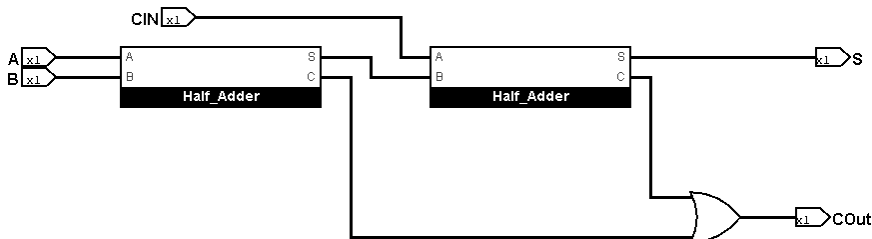Paste the three exported PNG pictures in here.

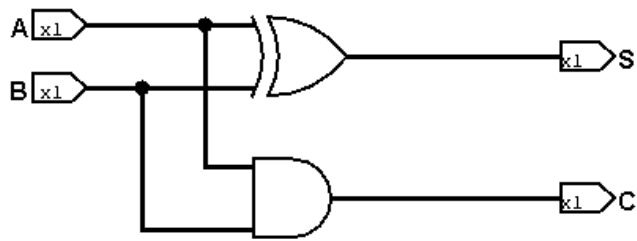*Figure 1 4-Bit adder*

Figure 2 Full adder

Figure 3 Half adder

Ready? Save this file and export it as a pdf file with the name: **week3.pdf**