Template Week 3 – Hardware

Student number:

Assignment 3.1: Examine your phone

What processor is in your phone?
Chipset: MediaTek Dimensity 7200 Pro.
CPU configuration: Octa-core — 2 × Cortex-A715 @ 2.8 GHz, 6 × Cortex-A510 @ 2.0 GHz.
GPU: ARM Mali-G610 MC

To which architecture family does this processor belong? In other words, which Instruction Set Architecture (ISA) is used?
ISA is part of the ARM (A-profile) 64-bit family

How much RAM is in it?
12GB

How much storage does your phone have?
256GB

What operating system is running on your phone?
Android 14 running on Nothing OS 2.5.

Approximately how many applications do you have installed?
Between 30 and 40.

Which application do you use the most?
HayDay or Whatsapp.

Can your phone be charged with what type of plug?
USB-C.

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

Assignment 3.2: Examine your laptop

What processor is in your laptop?
Intel Core i9-14900HX, 2,2 GHz basis, tot 5,8 GHz boost.

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?
16GB DDR5-5600 SO-DIMM

How much storage does your laptop have?
1TB SSD

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

Approximately how many applications do you have installed?
Tussen de 20 en 30.

Which application do you use the most?
Discord en Red Dead Redemption (en Chrome)

Can your laptop be charged with what type of plug?
DC-in-jack

Which I/O ports can you visually see on your laptop?
1x HDMI 2.1, 2x USB-A, 1x USB-C, 1x RJ-45 en 3,5mm audio jack

Assignment 3.3: Power to the laptop

What is the input voltage?
100-240 volt

What is the output voltage?
19-20 volt

How many watts can your power adapter deliver?
240-280 watt

Is the input voltage AC or DC?
AC

Is the output voltage AC or DC?
DC

AC/DC what is that?
AC: Alternative Current, wat letterlijk betekend wisselspanning.
DC: Direct Current, wat letterlijk betekend gelijkspanning.

If you reverse the polarity of the output voltage, is that bad for your laptop?
Ja, best wel slecht. Hierdoor kunnen interne componenten doorbranden.

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.
Ja dat kan wel, al seen laptop maar 15 watt nodig heeft, en maar 15 watt zal gebruiken van de 50 watt.

Assignment 3.4: Build your dream PC

Screenshots PC configuration + motivation:

CPU: AMD Ryzen 7 7800X3D
GPU: NVIDIA GeForce RTX 4080 Super
Motherboard: ASUS ROG Strix B650E-F Gaming WiFi
RAM: 32 GB DDR5 6000 MHz (2×16 GB)
Storage (SSD 1): 1 TB Samsung 990 Pro NVMe
Storage (SSD 2): 2 TB Crucial P3 Plus NVMe
PSU: Corsair RM850x (850 W, 80+ Gold)
Case: Fractal Design Meshify 2
CPU Cooler: Noctua NH-D15 Black
Fans: 3× Arctic P14 PWM
OS: Windows 11 Pro
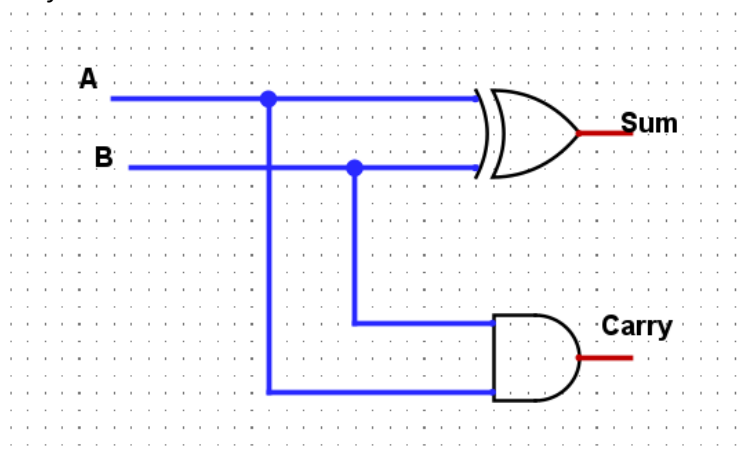*Monitor: 27" 1440p 165 Hz IPS (e.g., MSI G273QF)*

Dit omdat ik best wel gewend ben aan een ASUS en het een fijne laptop vindt. Ook is de extra storage wel fijn voor grote games zoals Red Dead Redemption 2.
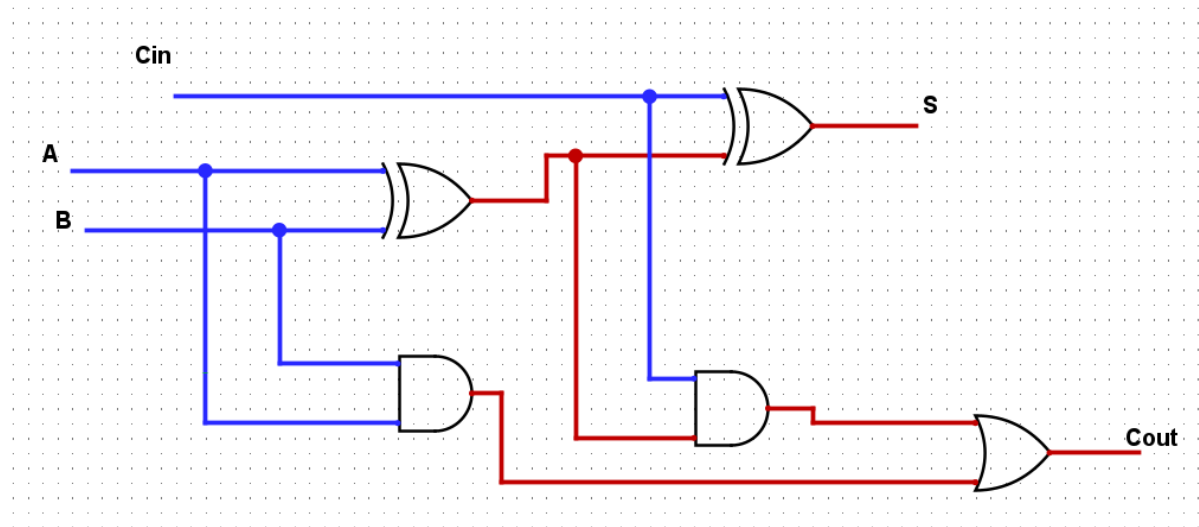
Assignment 3.5: Adders

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.
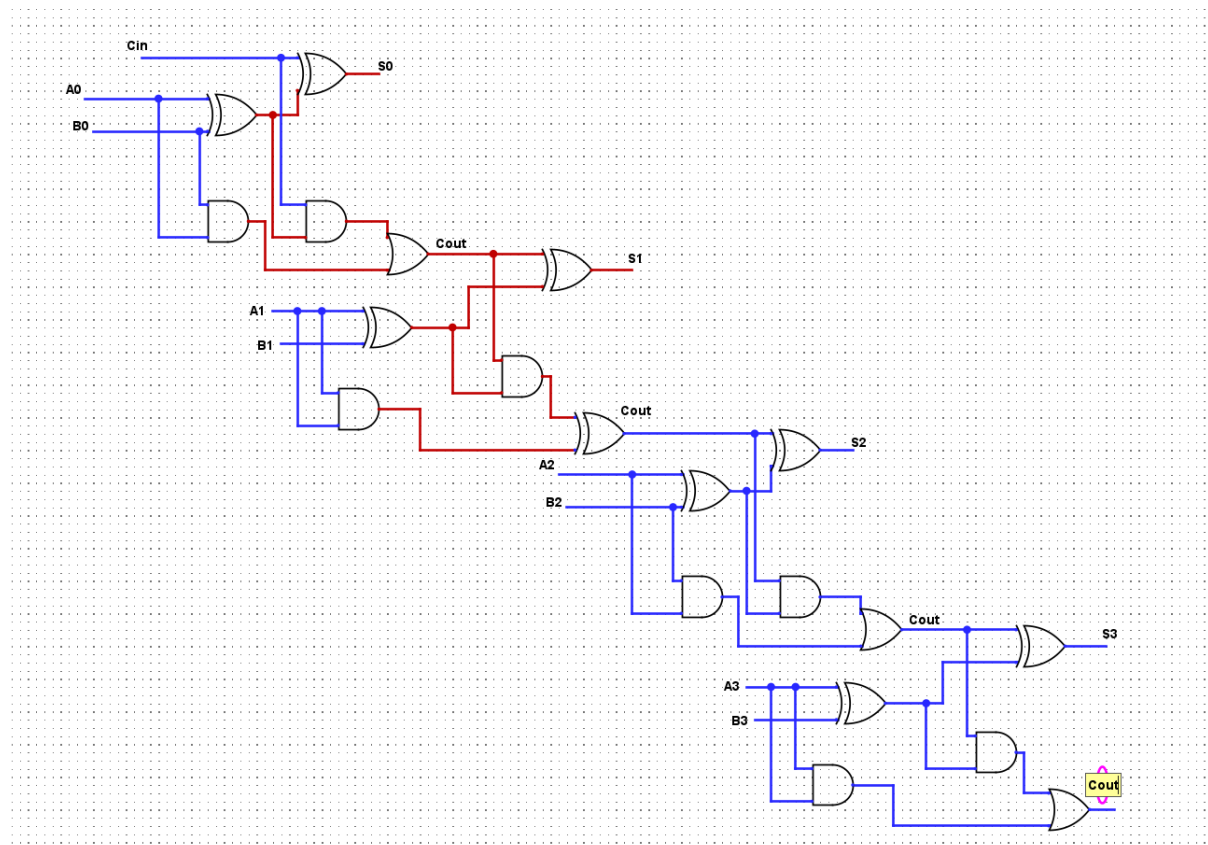
Paste the three exported PNG pictures in here.
Half adder:

Full adder:

4-bit adder:

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