Template Week 3 – Hardware

Student number: 582031

Assignment 3.1: Examine your phone

What processor is in your phone? Apple Silicon A18 Pro

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? 8GB

How much storage does your phone have? 128GB

What operating system is running on your phone? IOS 26.2

Approximately how many applications do you have installed? 67

Which application do you use the most? Discord

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

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

Assignment 3.2: Examine your laptop

What processor is in your laptop? Apple Silicon M3

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? 16GB

How much storage does your laptop have? 512GB

Which operating system is running on your laptop? MacOS

Approximately how many applications do you have installed? 60

Which application do you use the most? Brave Browser

Can your laptop be charged with what type of plug? Magsafe & Usb type c

Which I/O ports can you visually see on your laptop? 2 Thunderbolt USB Type C

Assignment 3.3: Power to the laptop

What is the input voltage? 100-240AV AC

What is the output voltage? Around 13V

How many watts can your power adapter deliver? 65W

Is the input voltage AC or DC? AC

Is the output voltage AC or DC? DC

AC/DC what is that? AC = heen-en-weer stroom DC = een richtings stroom

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

Ja, omdat de + en – dan omgedraaid kunnen worden

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.

Vermogen (Watt) = V x A
De spanning (V) is vast -> die moet exact kloppen.
De laptop bepaalt vervolgens hoeveel stroom (A) hij vraagt.

Assignment 3.4: Build your dream PC

Screenshots PC configuration + motivation:

| Component	Selection		Base	Promo	Shipping	Tax	Availability	Price	Where		
CPU		AMD Ryzen 9 7950X 4.5 GHz 16-Core Processor	€865.82	—	—	—	In stock	€865.82	amazon.nl	Buy	×
CPU Cooler		Asus ROG RYUJIN II ARGB 70.07 CFM Liquid CPU Cooler	€551.00	—	Prime	—	In stock	€551.00	amazon.nl	Buy	×
Motherboard		MSI MEG X870E GODLIKE EATX AM5 Motherboard	€1249.00	—	FREE	—	In stock	€1249.00	AZERTY	Buy	×
Memory		Corsair Vengeance 128 GB (4 x 32 GB) DDR5-5600 CL40 Memory	€2153.31	—	—	—	In stock	€2153.31	amazon.nl	Buy	×
	+ Add Additional Memory										
Storage		Samsung 860 Pro 4 TB 2.5" Solid State Drive	€1589.95	—	—	—	In stock	€1589.95	amazon.nl	Buy	×
	+ Add Additional Storage										
Video Card		PNY OC GeForce RTX 5090 32 GB Video Card	€3847.00	—	FREE	—	In stock	€3847.00	bol.	Buy	×
	+ Add Another Video Card										
Case		Thermaltake View 71 ARGB ATX Full Tower Case	€1041.40	—	—	—	In stock	€1041.40	amazon.nl	Buy	×
Power Supply		SeaSonic PRIME PX 1600 W 80+ Platinum Certified Fully Modular ATX Power Supply	€813.44	—	—	—	In stock	€813.44	amazon.nl	Buy	×
Operating System		Microsoft Windows 11 Pro Retail - Download 64-bit	€258.00	—	FREE	—	In stock	€258.00	bol.	Buy	×

Ik heb bewust voor de duurste en krachtigste onderdelen gekozen om een extreem krachtige en volledig future proof pc samen te stellen. Het doel was een systeem dat elke zware taak aankan, van gaming tot AI en contentcreatie, zonder beperkingen.

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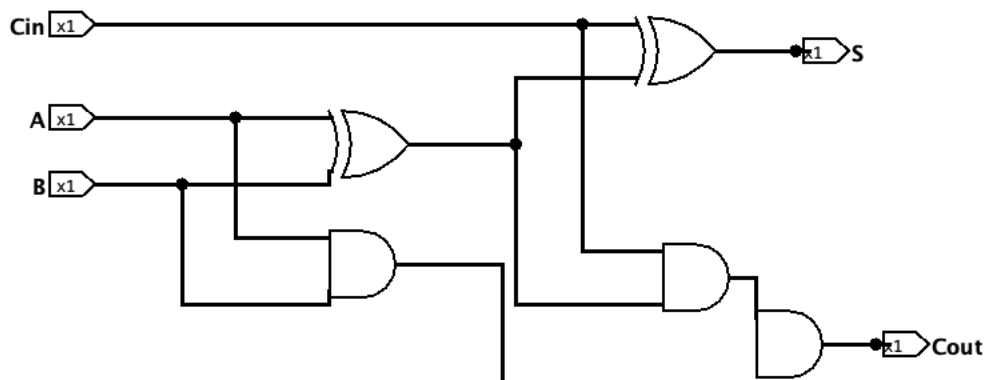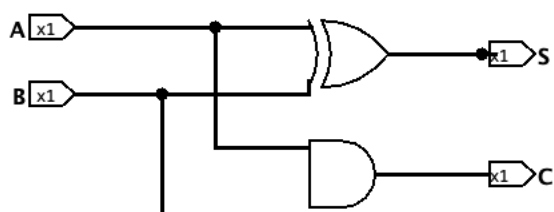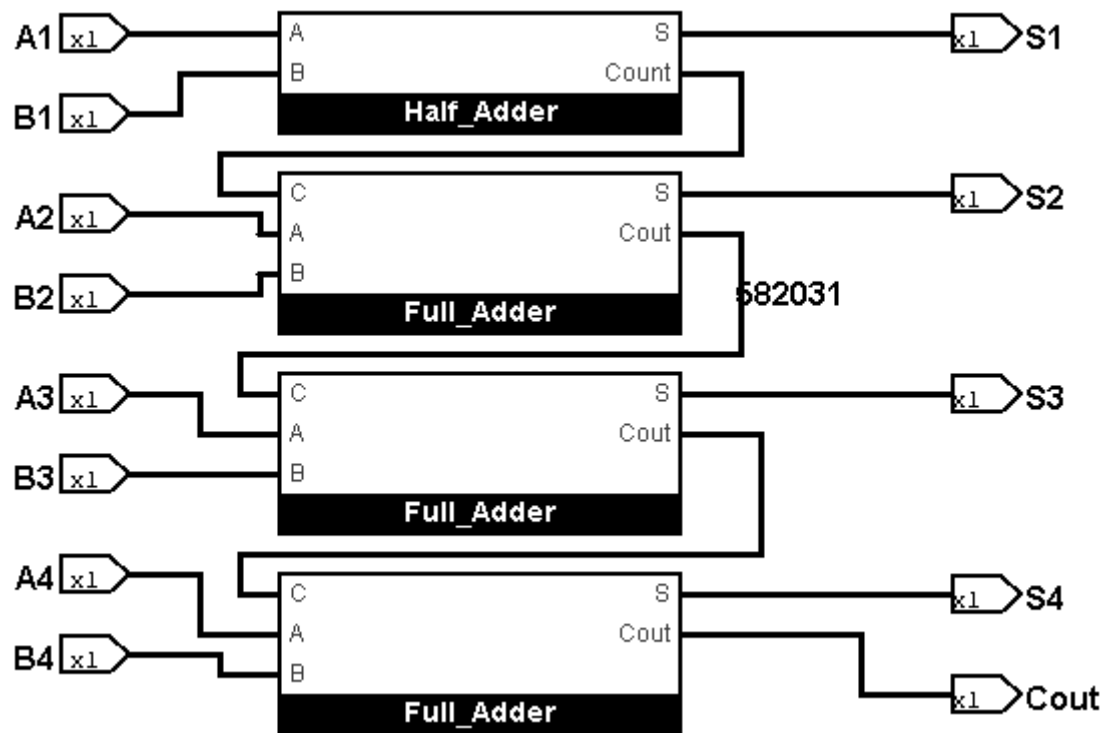
Ready? Save this file and export it as a pdf file with the name: **week3.pdf**