Template Week 3 – Hardware

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Assignment 3.1: Examine your phone

What processor is in your phone?
De iPhone 14 Pro heeft de Apple A16 Bionic-chip.

To which architecture family does this processor belong? In other words, which Instruction Set Architecture (ISA) is used?
De A16 Bionic gebruikt de ARM-architectuur

How much RAM is in it?
De iPhone 14 Pro heeft 6 GB LPDDR5 RAM.

How much storage does your phone have?
256GB

What operating system is running on your phone?
De iPhone 14 Pro draait op iOS

Approximately how many applications do you have installed?
Ik denk ongeveer 50.

Which application do you use the most?
Tiktok

Can your phone be charged with what type of plug?

De iPhone 14 Pro gebruikt een Lightning-connector

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

Laad-poort

Speakergrill en microfoon

SIM-kaarthouder

Knoppen

Assignment 3.2: Examine your laptop

What processor is in your laptop?
AMD RYZEN 9 7940HX

To which architecture family does this processor belong? In other words, which Instruction Set Architecture (ISA) is used?
AMD 64

How much RAM is in it?
16GB DDR5

How much storage does your laptop have?
1TB

Which operating system is running on your laptop?
Windows 11 EDUCTION EDITION

Approximately how many applications do you have installed?
30

Which application do you use the most?
Microsoft EDGE

Can your laptop be charged with what type of plug?
DCIN Plug

Which I/O ports can you visually see on your laptop?
Laad-poort
USB-poort
HDMI-poort
Internet kabel poort
USB-C Poort
Headset poort

Assignment 3.3: Power to the laptop

What is the input voltage?
100–240 V AC

What is the output voltage?
20 V DC

How many watts can your power adapter deliver?
280 W

Is the input voltage AC or DC?
AC

Is the output voltage AC or DC?
DC

AC/DC what is that?
AC (wisselstroom): de stroom wisselt voortdurend van richting. Dit komt uit het stopcontact.

DC (gelijkstroom): de stroom loopt continu in één richting. Dit gebruikt je laptop en batterij.

De adapter zet dus AC om naar DC.

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

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.

Het is slecht voor je laptop, Omdat er kortsluiting kan onstaan en bescherming circuits kunnen doorslaan. En in het ergste geval kan je moederbord beschadigt raken

Assignment 3.4: Build your dream PC
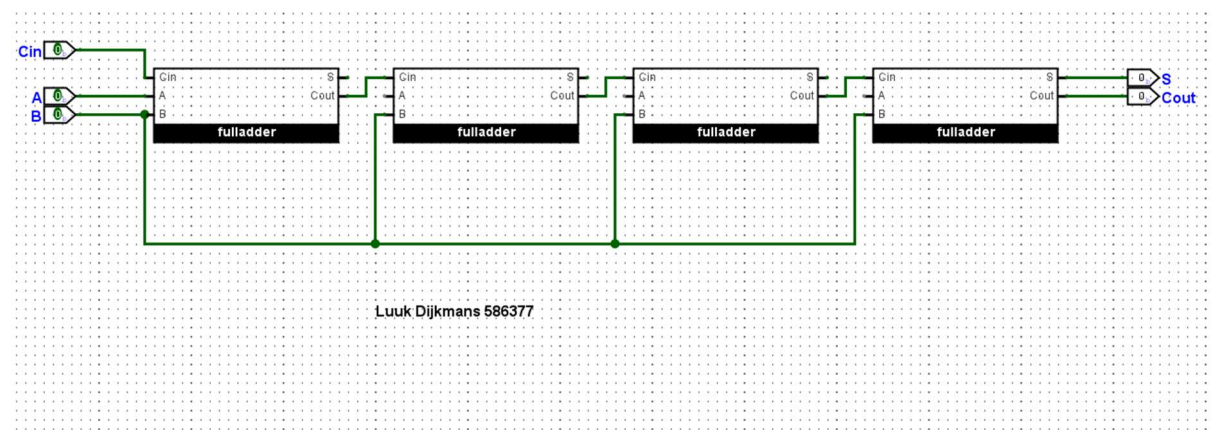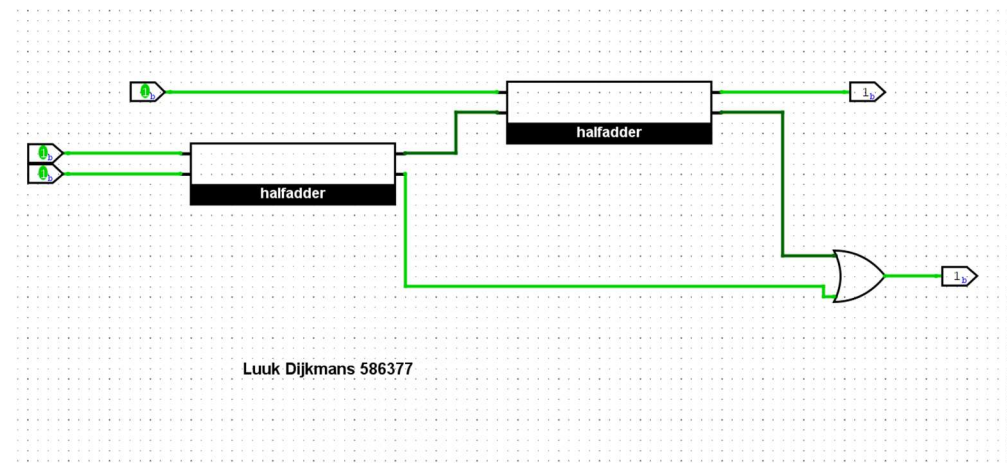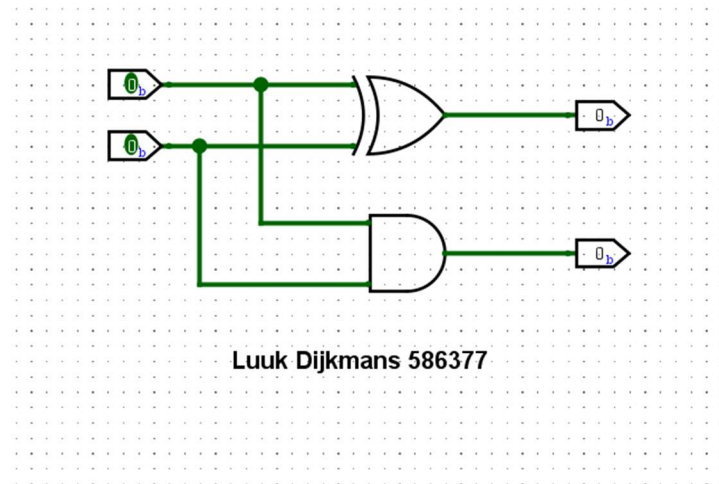
Screenshots PC configuration + motivation:

Component	Selection		Base	Promo	Shipping	Tax	Availability	Price	Where		
CPU		AMD Ryzen 9 PRO 7945 3.7 GHz 12-Core OEM/Tray Processor	€544.98	—	—	—	In stock	€544.98	amazon.nl	Buy	×
CPU Cooler		NZXT Kraken X73 RGB 52.44 CFM Liquid CPU Cooler	€476.99	—	—	—	In stock	€476.99	amazon.nl	Buy	×
Motherboard		Gigabyte B650 AORUS ELITE AX ATX AM5 Motherboard	€428.99	—	Prime	—	In stock	€428.99	amazon.nl	Buy	×
Memory		Corsair Vengeance RGB 128 GB (4 x 32 GB) DDR5-5600 CL40 Memory	€1155.21	—	Prime	—	In stock	€1155.21	amazon.nl	Buy	×
	+ Add Additional Memory											
Storage		Samsung 9100 PRO 8 TB M.2-2280 PCIe 5.0 X4 NVME Solid State Drive	€899.00	—	FREE	—		€899.00	MEGEKKO	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		Lian Li O11 Dynamic EVO XL ATX Full Tower Case	€234.90	—	€5.95	—	In stock	€240.85	ALTERNATE	Buy	×
Power Supply		Asus ROG STRIX 1200P Gaming 1200 W 80+ Platinum Certified Fully Modular ATX Power Supply	€260.52	—	FREE	—		€260.52	PARADIGIT	Buy	×
Operating System		Microsoft Windows 11 Home OEM - DVD 64-bit	€125.00	—	FREE	—		€125.00	PARADIGIT	Buy	×

Ik heb voor deze pc-build gekozen, Omdat de specs van deze pc momenteel de beste zijn die er op de markt zijn er is geen betere video kaart en daarnaast kan je alles mogelijke dingen die je wil doen op deze pc ook daadwerkelijk doen. Hij kan zo goed als aan van videos editen tot zware games.

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