

# Template Week 3 – Hardware

Student number:

## Assignment 3.1: Examine your phone

Iphone 13:

What processor is in your phone?

Apple A15 Bionic chip

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?

4GB LPDDR4X RAM

How much storage does your phone have?

128 GB

Which operating system is running on your phone?

iOS 16.1

Approximately how many applications do you have installed?

Ongeveer 35 app heb ik geinstalleerd.

Which application do you use the most?

Tiktok en Yahoo finance

Your phone can be charged with which type of plug? • Which I/O ports can you visually see on your phone?

Iphone 13 gebruikt lightning connector om op te laden, verder is dit ook de enige poort die zichtbaar is.

### **Assignment 3.2: Examine your laptop**

#### **Macbook pro**

What processor is in your laptop?

Apple M3 MAX

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?

36 GB

How much storage does your laptop have?

1 TB

Which operating system is running on your laptop?

Tahoe IOS 26.1

Approximately how many applications do you have installed?

Met de apps die bij de mac al geïnstalleerd zijn ongeveer 30.

De apps die ik heb geïnstalleerd zijn er ongeveer 15.

Which application do you use the most?

Phpstorm, Webstorm, Hyper, Arc.

Your laptop can be charged with what type of plug?

Magsafe 3 port en USB C

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

- 3x USB C ports
- MagSafe 3 charging port
- SDXC-card slot
- HDMI port
- 3.5 mm headphone jack

### **Assignment 3.3: Power to the laptop**

What is the input voltage?

100 – 240C AC

What is the output voltage?

19 – 19.5 V DC

How many watts can your power adapter deliver?

45W – 120W

Is the input voltage AC or DC?

AC

Is the output voltage AC or DC?

DC

AC/DC what is that?

AC is wissel stroom, de stroom wissel in Nederland is dit 50x per seconde

DC is gelijkstroom, deze stroom output blijft gelijk er zitten geen schommelingen in, dit wordt gebruikt voor elektronische apparaten.

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

Ja, als je de min en de plus omwissel kan dit heel erg zijn voor de laptop, kan dodelijk zijn voor een 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.

Dit zou geen problemen geven, de laptop pakt alleen het aantal WATT wat hij nodig heeft.  
En zou dan alleen 15W vragen van de opladen.

## Assignment 3.4: Build your dream PC

Screenshots PC configuration + motivation:

Dit is een echte game pc waar je eigenlijk alle AAA games op kan spelen, een case die mooi op mijn bureau kan staan, en geen doorn in het oog is. met een mooie uitstraling, verder is er ook veel ventilatie mogelijk.

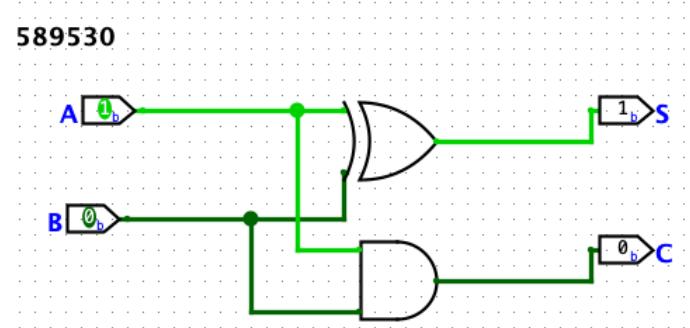
Component	Selection	Base	Promo	Shipping	Tax	Availability	Price	Where	
CPU	 <b>AMD Ryzen 7 7800X3D 4.2 GHz 8-Core Processor</b> From parametric selection: <ul style="list-style-type: none"><li>AMD Ryzen 7 7800X3D 4.2 GHz 8-Core Processor</li></ul>	€365.00	—	FREE	—	In stock	🔒 €365.00	AZERTY 	X
CPU Cooler	 <b>Corsair NAUTILUS 360 RS ARGB 74.37 CFM Liquid CPU Cooler</b>	€99.00	—	 Prime	—	In stock	☀️ €99.00	amazon.nl 	X
Motherboard	 <b>Asus B650E MAX GAMING WIFI W ATX AM5 Motherboard</b>	€169.90	—	FREE	—	—	☀️ €169.90	MEGEKKO 	X
Memory	 <b>Crucial Pro Overclocking 32 GB (2 x 16 GB) DDR5-6000 CL36 Memory</b>	€289.99	—	 Prime	—	In stock	☀️ €289.99	amazon.nl 	X
<a href="#">+ Add Additional Memory</a>									
Storage	 <b>Samsung 990 Pro 2 TB M.2-2280 PCIe 4.0 X4 NVME Solid State Drive</b>	€199.90	—	FREE	—	In stock	☀️ €199.90	<b>bol.</b> 	X
<a href="#">+ Add Additional Storage</a>									
Video Card	 <b>XFX Swift OC Radeon RX 9060 XT 16 GB Video Card</b>	€399.00	—	FREE	—	—	☀️ €399.00	MEGEKKO 	X
<a href="#">+ Add Another Video Card</a>									
Case	 <b>HYTE Y70 Touch Infinite ATX Mid Tower Case</b>	€213.34	—	—	—	In stock	☀️ €213.34	amazon.nl 	X

### Assignment 3.5: Adders

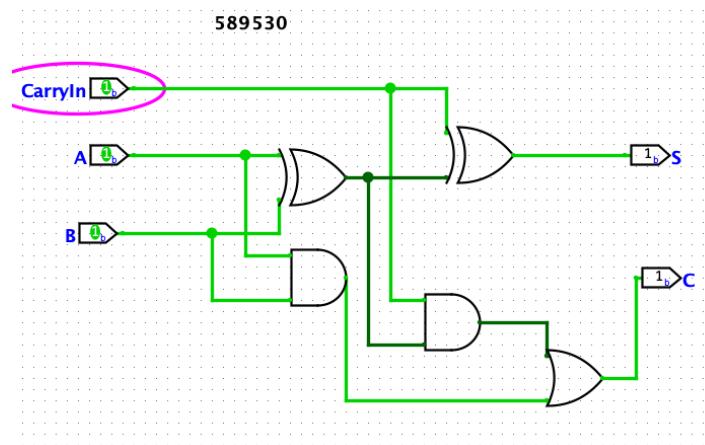
Complete the **half adder**, **full adder** and **4-bit adder** assignment as described in the PowerPoint slides of week 3 in Logisim. Save the chip design and also export three PNG pictures of the separate finished designs. See the PowerPoint slides of week 3.

Paste the three exported PNG pictures in here.

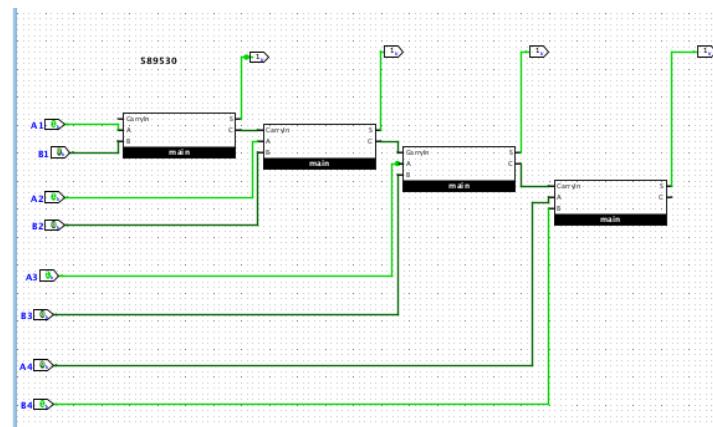
Half adder:



Full Adder:



Full Adder 4 bits:



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