

# Template Week 3 – Hardware

Student number: 572121

## Assignment 3.1: Examine your phone

What processor is in your phone?

A14 Bionic

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

ARM 64-bit architecture

How much RAM is in it?

4GB RAM

How much storage does your phone have?

64GB Storage

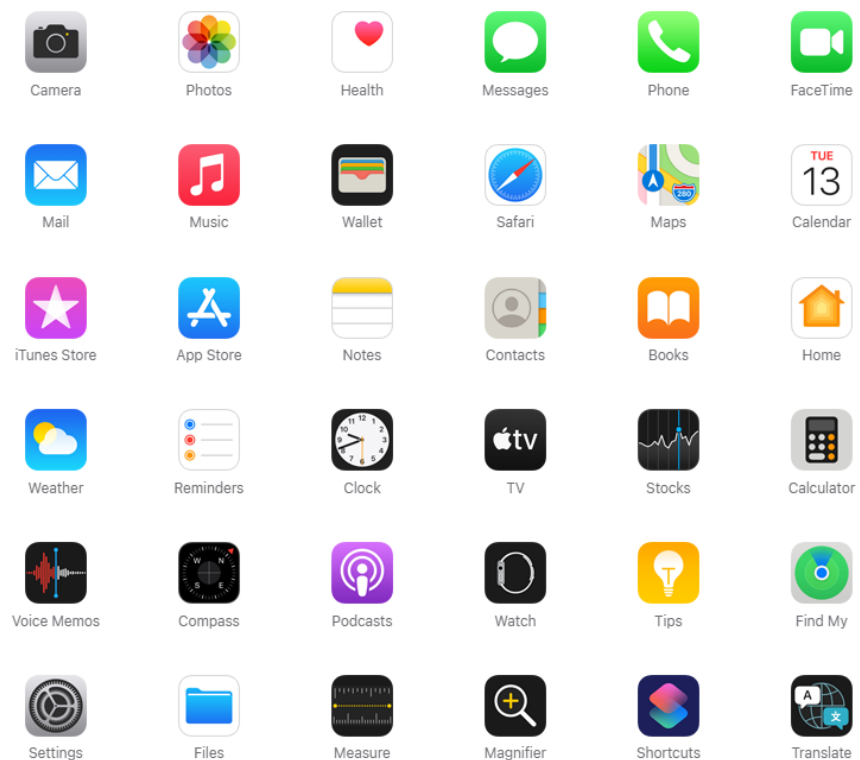
What operating system is running on your phone?

IOS 18

Approximately how many applications do you have installed?

Excluding the built in applications I have 8 other applications installed. With the built in I would have 44 applications installed:

### Built-in Apps



Which application do you use the most?

WhatsApp

Can your phone be charged with what type of plug?

Lightning cable or wireless charging

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

Charging port which also can be used for earphones

Speakers

Microphone holes

sim card slot

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

What processor is in your laptop?

Intel I7-11GEN

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?

I added additional ram up to 32GB RAM

How much storage does your laptop have?

512GB Storage

Which operating system is running on your laptop?

Windows 11 Pro

Approximately how many applications do you have installed?

47

Which application do you use the most?

Firefox

Can your laptop be charged with what type of plug?

Pin

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

HDMI

USB type C

SDCard slot

Pin for charging

USB port

### Assignment 3.3: Power to the laptop

What is the input voltage?

100-240V AC

What is the output voltage?

19.5V DC

How many watts can your power adapter deliver?

45W

Is the input voltage AC or DC?

AC

Is the output voltage AC or DC?

DC

AC/DC what is that?

AC Alternating Current, de stroom verandert van richting dit is de standaard vorm van elektriciteit zoals geleverd door stopcontacten

DC Direct Current, de stroom gaat via 1 richting, bijvoorbeeld laptops werken op gelijk stroom

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

Ja want dan draai je de positieve met de negatieve aansluiting om

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, je kunt de geleende adapter van 50W veilig gebruiken, omdat je laptop slechts 15W nodig heeft en alleen de benodigde hoeveelheid stroom trekt, zolang de spanning en polariteit hetzelfde zijn.








### Assignment 3.4: Build your dream PC


Screenshots PC configuration + motivation:

## System Builder













Home > System Builder









<https://pcbuilder.net/rigs/JThy2g/>

Markup:       

Select Country:  United States

Compatibility: No issues or incompatibilities found. Estimated Wattage: 300W

Component	Product	Title	Price	Product Link	Remove
Processor	 ★★★★☆	<b>AMD Ryzen™ 9 7950X 16-Core, 32-Thread Unlocked Desktop Processor</b> Brand: AMD Cores: 16 Threads: 32 Base Speed: 4.5 GHz Model: Ryzen 9 7950X Socket Type: AM5 Turbo Speed: 5.7 GHz <a href="#">View More Details</a>	\$466.99	<a href="#">Buy from Amazon</a>	
Motherboard	 ★★★★☆	<b>GIGABYTE X670E AORUS Xtreme (LGA 1718/ Quad M.2/USB 3.2 Gen2X2 Type-C/Intel WiFi 6E/ AQUANTIA 10GbE LAN/Q-Flash Plus)</b> Brand: Gigabyte Chipset: AMD X670 Form Factor: Extended ATX Model: X670E AORUS XTREME Socket Type: AM5 <a href="#">View More Details</a>	\$957.90	<a href="#">Buy from Amazon</a>	
CPU Cooler	 ★★★★★	<b>Cooler Master Hyper 212 EVO V2 CPU Air Cooler with SickleFlow 120, PWM Fan, Direct Contact Technology, 4 Copper Heat Pipes</b> Brand: Cooler Master Model: Hyper 212 EVO V2	\$109.99	<a href="#">Buy from Amazon</a>	
Case	 ★★★★★	<b>Cooler Master HAF 700 E-ATX High Airflow PC Case, Mesh Front Panel, Dual 200mm Sickleflow Customizable ARG Fans</b> Brand: Cooler Master Side Panel: Tempered Glass Color: Black Model: 9B11-119-437 Cabinet Type: ATX Full Tower	\$299.99	<a href="#">Buy from Amazon</a>	
Graphics Card	 ★★★★☆	<b>MSI Gaming GeForce RTX 4090 24GB GDDR6X 384-Bit HDMI/DP Nvlink Tri-Frozr 3 Ada Lovelace Architecture OC Graphics Card</b> Brand: MSI Memory: 24 GB Interface: PCIe x16 Model: GeForce RTX 4090 GAMING X TRIO 24G Memory Interface: GDDR6X Length: 337 mm Chipset: GeForce RTX 4090 <a href="#">View More Details</a>	\$1,999.99	<a href="#">Buy from Amazon</a>	
RAM	 ★★★★★	<b>G.SKILL Trident Z5 RGB Series (Intel XMP 3.0) DDR5 RAM 48GB (2x24GB) 8000MT/s CL40-48-48-128 1.35V Desktop Computer Memory UDIMM - Metallic Silver (F5-8000J4048F24GX2-TZ5RS)</b> Brand: G.Skill RAM Size: 48 GB Quantity: 2 x 24 GB Model: F5-8000J4048F24GX2-TZ5RS RAM Type: DDR5 <a href="#">View More Details</a>	\$249.99	<a href="#">Buy from Amazon</a>	

Storage		<b>Samsung EVO 970 1TB PCIe Gen3 x4 NVMe M.2-2280 Internal Solid State Drive with V-NAND Technology &amp; 1024MB Cache</b> Brand: Samsung Capacity: 1 TB Interface: PCIe 3.0 x4 Form Factor: M.2-2280 Model: 970 EVO Type: SSD Cache Memory: 1024 MB	\$129	<a href="#">Buy from Amazon</a>	
Storage	<a href="#">+ Add Another Storage</a>				
Case Cooler		<b>ARCTIC P12 PWM PST - 120 mm Case Fan with PWM Sharing Technology (PST) Pressure-optimised Quiet Motor Computer Fan Speed: 200-1800 RPM</b> Brand: ARCTIC Fan RPM: 1800 RPM Airflow: 56.3 CFM Noise Level: N/A Model: ACFAN00170A	\$10.49	<a href="#">Buy from Amazon</a>	
Power Supply		<b>Thermaltake Toughpower PF1 750W 80+ Platinum Single Side SMD Compact Design Ultra Quiet 120mm Hydraulic Bearing Smart Zero Fan</b> Brand: Thermaltake Power: 750 W Efficiency: 80+ Platinum Color: Black Model: Toughpower PF1	\$224.99	<a href="#">Buy from Amazon</a>	
Monitor		<b>Acer SB270 Bbix 27" Full HD (1920 x 1080) IPS Ultra-Thin Zero Frame Monitor with AMD Radeon FREESYNC Technology - 1ms 75Hz Refresh (HDMI &amp; VGA Ports)</b> Brand: Acer Screen Size: 27" Resolution: 1920 x 1080 Response Time: 1 ms Panel Type: IPS Aspect Ratio: 16:9 Refresh Rate: 75 Hz Model: SB270 Bbix	\$189.99	<a href="#">Buy from Amazon</a>	

Ik heb deze onderdelen gekozen omdat ik een snelle en krachtige PC wil bouwen die geschikt is voor gamen, multitasken en creatieve dingen zoals videobewerking en virtualisatie. De AMD Ryzen 9 7950X processor is een beest, met 16 kernen en 32 threads, ideaal voor zware programma's. Het GIGABYTE X670E AORUS XTREME moederbord is gekozen omdat het de nieuwste tech ondersteunt, zoals PCIe 5.0 en DDR5, waardoor ik in de toekomst makkelijk kan upgraden. De Cooler Master Hyper 212 EVO V2 zorgt dat de CPU goed koel blijft en is lekker stil. Voor de case heb ik de Cooler Master HAF 700 gekozen, omdat die lekker ruim is, goede airflow heeft en ook nog eens cool uitziert met RGB-verlichting.

De videokaart, de MSI GeForce RTX 4090, is een monster. Hiermee kan ik alle games op ultra-instellingen spelen en het is ook top voor 3D-rendering. Het werkgeheugen, G.SKILL Trident Z5 RGB DDR5 (2x24GB), is super snel en 48 GB is meer dan genoeg voor alles wat ik wil doen. Voor opslag heb ik gekozen voor de Samsung EVO 970 1TB, een betrouwbare en snelle SSD voor mijn besturingssysteem en programma's. De voeding, Thermaltake Toughpower PF1 750W, geeft genoeg power voor de hele build. Als laatste heb ik gekozen voor de Acer SB270 Bbix 27" monitor, omdat deze een mooie resolutie heeft en chill is voor werk en gamen.

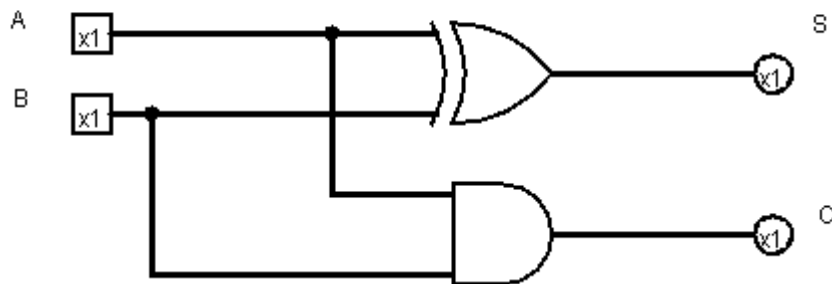
### Bonus point assignment – week 3

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 export three PNG pictures of the separate finished designs. See the PowerPoint slides of week 3.

Paste the three exported PNG pictures in here.

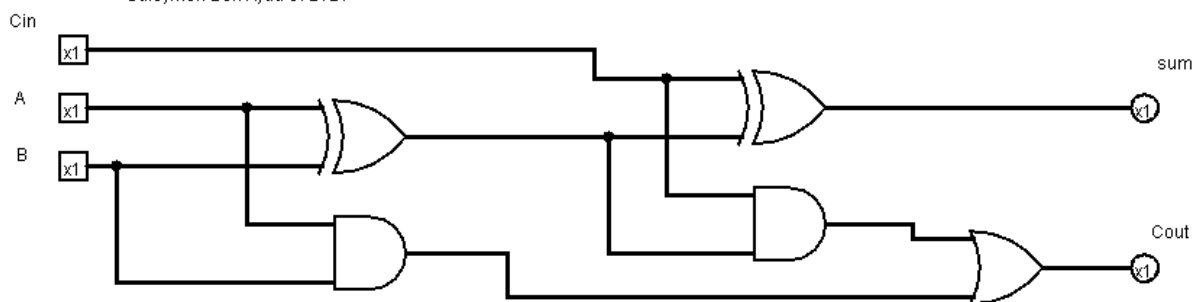
#### Half Adder

Suleymen Ben Ayad 572121

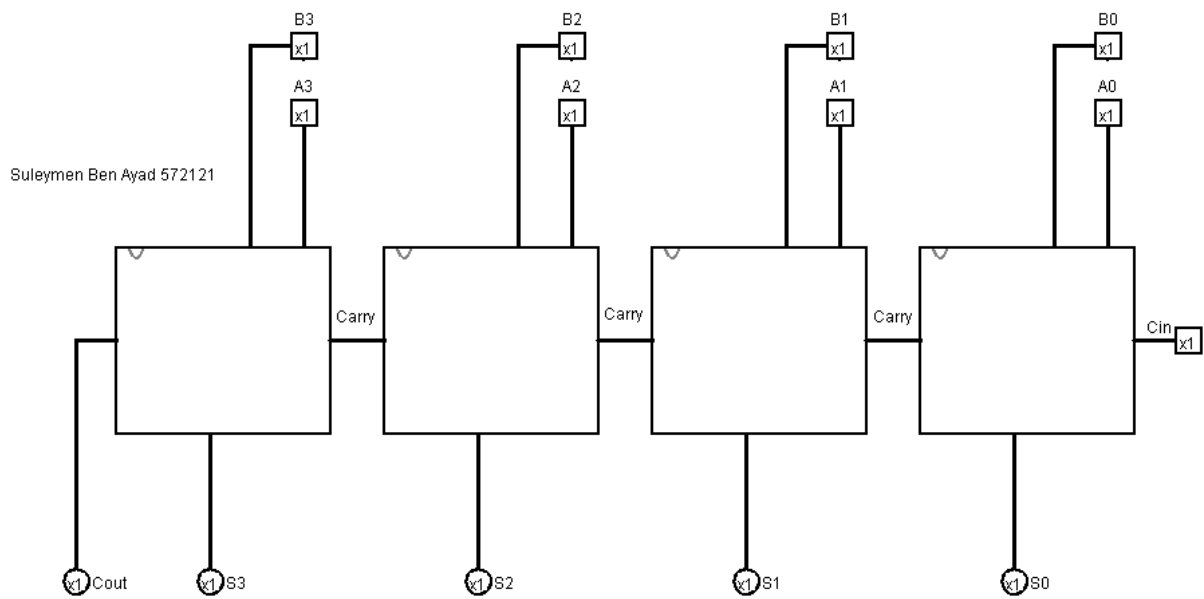


#### Full Adder

Suleymen Ben Ayad 572121



## 4-bit Adder



Ready? Save this file and export it as a pdf file with the name: [week3.pdf](#)