

Template Week 3 – Hardware

Student number: 592964

Assignment 3.1: Examine your phone

What processor is in your phone?

A15 Bionic chip

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

ARM architecture

How much RAM is in it?

6GB

How much storage does your phone have?

128GB

What operating system is running on your phone?

IOS

Approximately how many applications do you have installed?

Around 40 or 50

Which application do you use the most?

Instagram

Can your phone be charged with what type of plug?

Lightning

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

Only one – Lightning charging port

Assignment 3.2: Examine your laptop

What processor is in your laptop?

Apple M4

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?

500GB

Which operating system is running on your laptop?

MacOS Sequoia version 15.6.1

Approximately how many applications do you have installed?

Around 30

Which application do you use the most?

School related apps such as word or similar

Can your laptop be charged with what type of plug?

Magsafe

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

1x Magsafe, 2X USB-C, 1x AUX

Assignment 3.3: Power to the laptop

What is the input voltage?

200-240V

What is the output voltage?

20V

How many watts can your power adapter deliver?

35W

Is the input voltage AC or DC?

AC

Is the output voltage AC or DC?

DC

AC/DC what is that?

Outlet is Alternating current, it goes into power adapter and it transfer to Direct current which leads through the rest of charger to device

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

It would instantly destroy my 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.

I believe voltage is the dangerous part about electricity, watts shouldn't be the issue. My guess would be that even though power adapter is 50 watts, it's the maximum supply it can deliver but the laptop itself will take 15 watts only. So I think it's safe.

Assignment 3.4: Build your dream PC

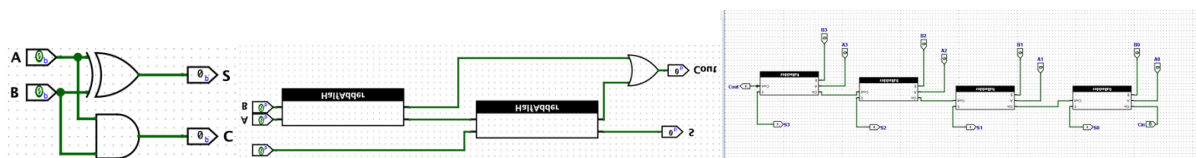
Screenshots PC configuration + motivation:

Component	Selection	Base	Promo	Shipping	Tax	Availability	Price	Where
CPU	AMD Ryzen 7 7800X3D 4.2 GHz 8-Core Processor	€339.90	—	—	—	In stock	€339.90	amazon.de Buy ×
CPU Cooler	Thermalright Peerless Assassin 120 SE 66.17 CFM CPU Cooler	€43.90	—	€5.95	—	In stock	€49.85	amazon.de Buy ×
Motherboard	MSI B650 GAMING PLUS WIFI ATX AM5 Motherboard	€147.99	—	—	—	In stock	€147.99	amazon.de Buy ×
Memory	Corsair Vengeance RGB 32 GB (2 x 16 GB) DDR5-6000 CL36 Memory	€335.00	—	—	—	In stock	€335.00	amazon.de Buy ×
Add Additional Memory								
Storage	Crucial P3 Plus 1 TB M.2-2280 PCIe 4.0 X4 NVME Solid State Drive	€99.00	—	FREE	—	In stock	€99.00	amazon.de Buy ×
Storage	Samsung 990 Pro 2 TB M.2-2280 PCIe 4.0 X4 NVME Solid State Drive	€159.00	—	—	—	In stock	€159.00	amazon.de Buy ×
Add Additional Storage								
Video Card	Asus TUF GAMING OC GeForce RTX 4070 12 GB Video Card	€1695.83	—	—	—	In stock	€1695.83	amazon.de Buy ×
Add Another Video Card								
Case	Montech XR ATX Mid Tower Case	€49.99	—	€5.95	—	In stock	€55.94	amazon.de Buy ×
Power Supply	MSI MAG A750GL PCIES 750 W 80+ Gold Certified Fully Modular ATX Power Supply	€104.00	—	—	—	In stock	€104.00	amazon.de Buy ×
Operating System	Microsoft Windows 11 Home OEM - DVD 64-bit	€125.00	—	FREE	—	In stock	€125.00	amazon.de Buy ×
Monitor	Asus TUF Gaming V027AQ 27.0" 2560 x 1440 165 Hz Monitor	€229.00	—	FREE	—	In stock	€229.00	bol.com Buy ×
Monitor	Asus TUF Gaming V027AQ 27.0" 2560 x 1440 165 Hz Monitor	€229.00	—	FREE	—	In stock	€229.00	bol.com Buy ×
Add Another Monitor								
Expansion Cards / Networking	Sound Cards, Wired Network Adapters, Wireless Network Adapters							
Peripherals	Headphones, Keyboards, Mice, Speakers, Webcams							
Accessories / Other	Case Accessories, Case Fans, Fan Controllers, Thermal Compound, External Storage, Optical Drives, UPS Systems							
Base Total:							€3567.61	
Shipping:							€11.90	
Total:							€3569.51	

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**