

# Template Week 3 – Hardware

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## Assignment 3.1: Examine your phone

What processor is in your phone?

Apple A16 Bionic / A17 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?

6 GB / 8 GB

How much storage does your phone have?

128 GB, 256 GB, 512 GB, 1 TB

What operating system is running on your phone?

iOS 17

Approximately how many applications do you have installed?

Ongeveer 50-60

Which application do you use the most?

Social media

Can your phone be charged with what type of plug?

USB-C

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

USB-C, speakergrille, microfoonopeningen

## Assignment 3.2: Examine your laptop

What processor is in your laptop?

Intel Core i7-12700H (or similar, depending on the exact model).

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

x86-64 (Intel architecture).

How much RAM is in it?

Typically 16 GB or 32 GB, depending on configuration.

How much storage does your laptop have?

1TB SSD

Which operating system is running on your laptop?

Windows 11 Home

Approximately how many applications do you have installed?

15

Which application do you use the most?

Google

Can your laptop be charged with what type of plug?

Barrel-type power plug (standard for ASUS TUF series).

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

☐ USB-A ports

☐ USB-C port(s)

☐ HDMI port

☐ Ethernet (RJ-45) port

☐ 3.5 mm headphone/microphone combo jack

☐ Charging port

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

What is the input voltage?

What is the output voltage?

How many watts can your power adapter deliver?

Is the input voltage AC or DC?

Is the output voltage AC or DC?

AC/DC what is that?

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.

### Assignment 3.4: Build your dream PC

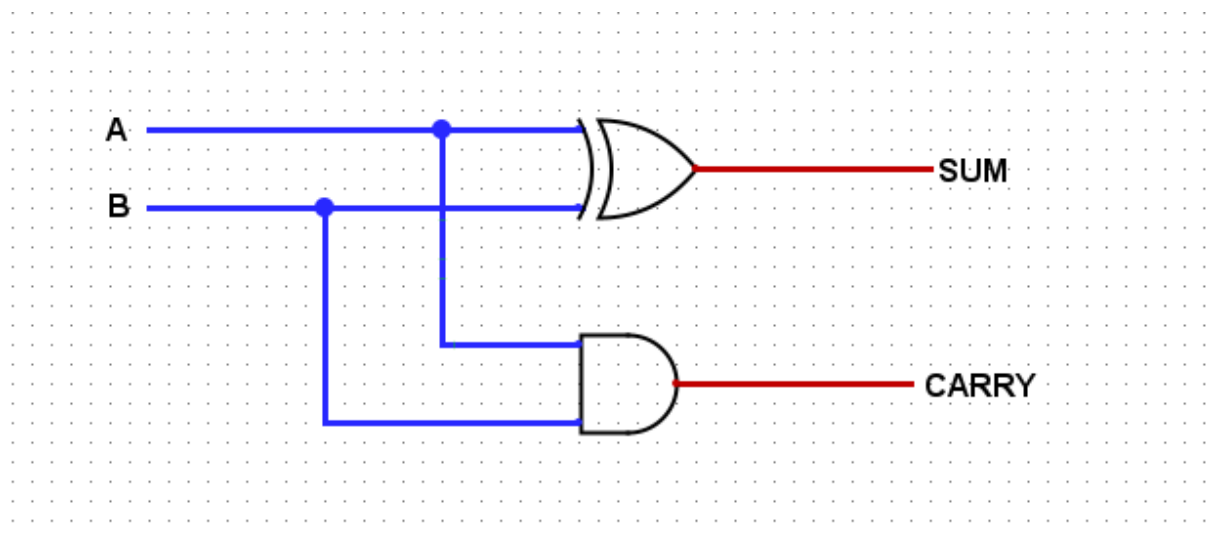
Screenshots PC configuration + motivation:

### Bonus point assignment – week 3

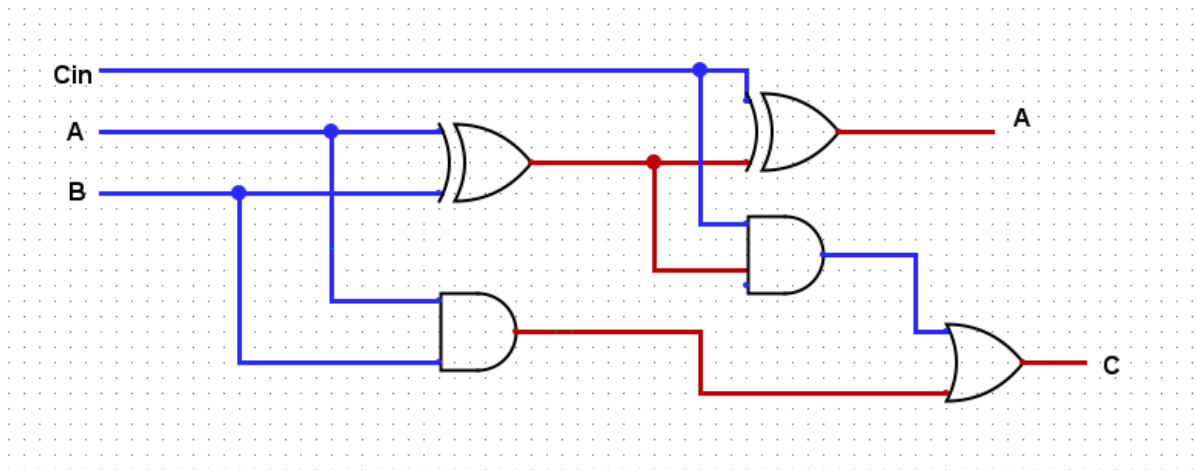
Complete the **half adder**, **full adder** and **4-bit adder** assignment as described in the PowerPoint slides of week 3 in Logisim. Save the chip design and also export three PNG pictures of the separate finished designs. See the PowerPoint slides of week 3.

Paste the three exported PNG pictures in here.

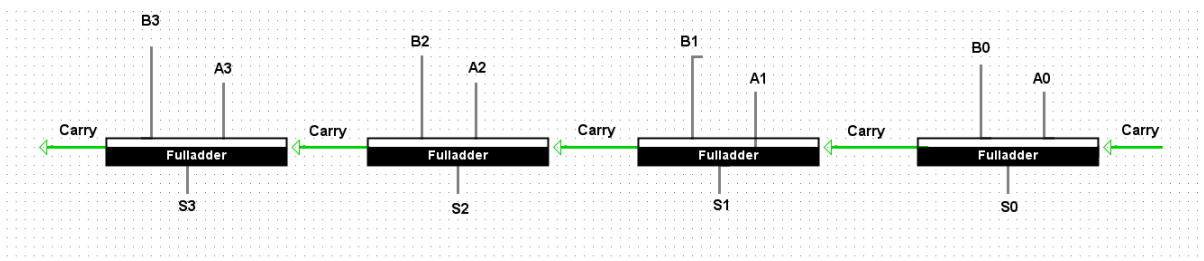
### Half Adder



### Full Adder



## 4-Bit Adder



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