Template Week 3 – Hardware

Student number: 568681

Assignment 3.1: Examine your phone

What processor is in your phone?

A15 Bionic, it's a hexa-core(6-core) CPU.

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

Apple.

How much RAM is in it?

4GB

How much storage does your phone have?

512 GB

What operating system is running on your phone?

iOS 18.1

Approximately how many applications do you have installed?

Exactly 31

Which application do you use the most?

YouTube/WhatsApp

Can your phone be charged with what type of plug?

USB-C to Lightning

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

Lightning charging port, Speaker grilles, SIM card slot.

Assignment 3.2: Examine your laptop

What processor is in your laptop?

12th Gen Intel® Core™ i5-12500H

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

Intel

How much RAM is in it?

16

How much storage does your laptop have?

512GB

Which operating system is running on your laptop?

Windows 11

Approximately how many applications do you have installed?

20+

Which application do you use the most?

Chrome, League of Legends, Valorant

Can your laptop be charged with what type of plug?

USB-C with a Power Delivery.

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

USB ports, HDMI port, Audio Jack.

Assignment 3.3: Power to the laptop

What is the input voltage?

100-240V AC

What is the output voltage?

19V DC

How many watts can your power adapter deliver?

65 watts

Is the input voltage AC or DC?

The input voltage is AC

Is the output voltage AC or DC?

The output voltage is DC

AC/DC what is that?

AC (Alternating Current) = Electric current that reverses direction periodically.

DC (Direct Current) = Electric current that flows in one direction.

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

Yes, reversing the polarity is harmful. Most laptops and adapters are designed with a specific polarity.

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.

The borrowed power adapter will work fine because the wattage indicates the maximum power the adapter can deliver. Since the voltage, polarity and connector type are compatible, the laptop will only draw the power it needs.

The laptop power regulator manages the power drawn based on its requirements. The adapter's high capacity only indicates its maximum delivery capability.

Assignment 3.4: Build your dream PC

Screenshots PC configuration + motivation:

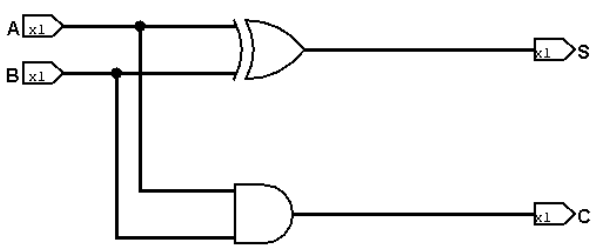
Bonus point assignment – week 3

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.

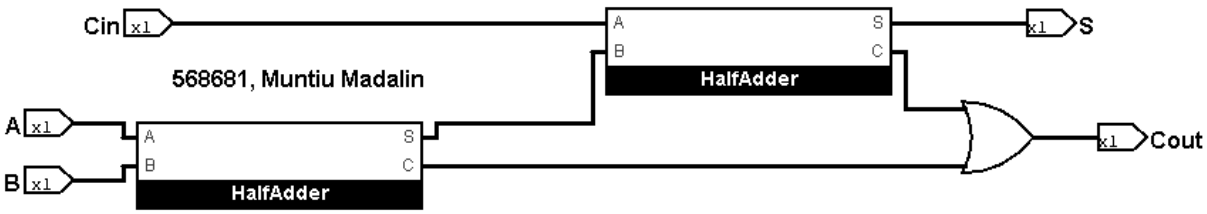
Paste the three exported PNG pictures in here.

Half Adder :

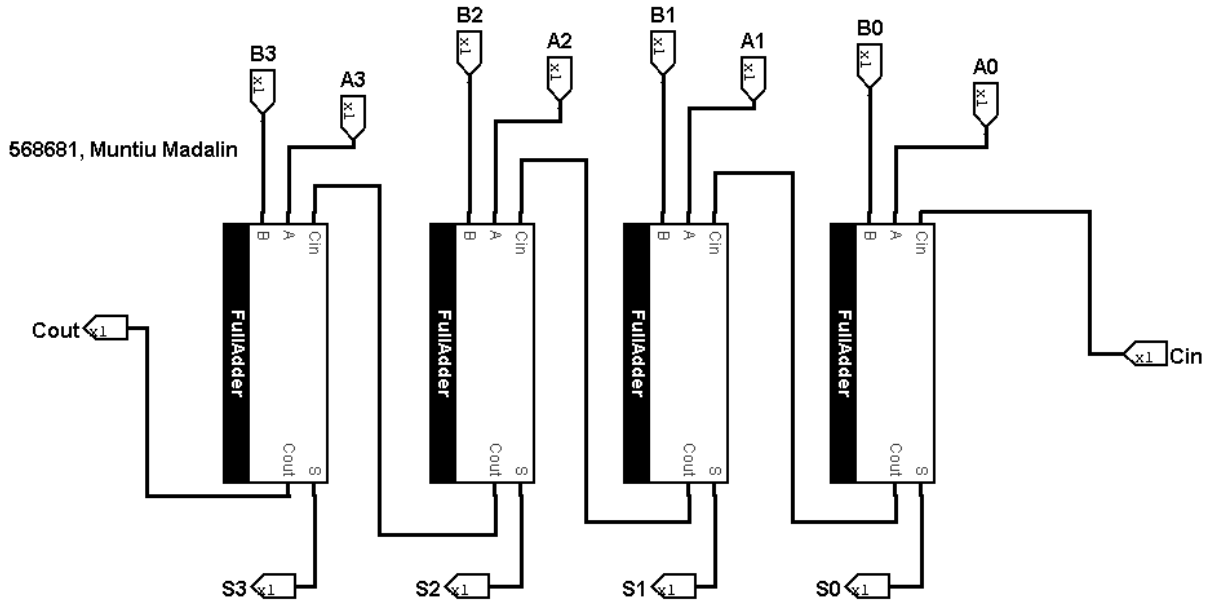
568681, Muntiu Madalin



Full Adder :



4-Bit Adder :



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