Template Week 3 – Hardware

Student number:

Assignment 3.1: Examine your phone

What processor is in your phone?

The iPhone 15 Pro is powered by the **A17 Pro chip**. This is Apple's first chip built on the 3-nanometer process.

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

The A17 Pro chip uses the **ARM architecture**. More specifically, it uses **ARMv8-A**, which is a 64-bit instruction set architecture (ISA) designed for high-performance mobile computing.

How much RAM is in it?

8GB RAM

How much storage does your phone have?

512GB

What operating system is running on your phone?

IOS 18.1.1

Approximately how many applications do you have installed?

52

Which application do you use the most?

X

Can your phone be charged with what type of plug?

TYPE C

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

TYPE C

Assignment 3.2: Examine your laptop

What processor is in your laptop?

This laptop is powered by the **AMD Ryzen 7 7730U** processor, which is an 8-core, 16-thread CPU designed for high-performance tasks.

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

The Ryzen 7 7730U is based on the **x86-64 architecture** (also known as **AMD64**). This is the 64-bit instruction set architecture (ISA) used by AMD and Intel processors for desktop and laptop computing.

How much RAM is in it?

It comes with **16GB of DDR4 RAM**, which is great for multitasking and more demanding applications like gaming or video editing.

How much storage does your laptop have?

1TB

Which operating system is running on your laptop?

WINDOWS 11

Approximately how many applications do you have installed?

24

Which application do you use the most?

IntelliJ

Can your laptop be charged with what type of plug?

Both Type C / 3.5 jack

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

Type C/ HDMI/ 3.5 jack/ 2 usb ports

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.
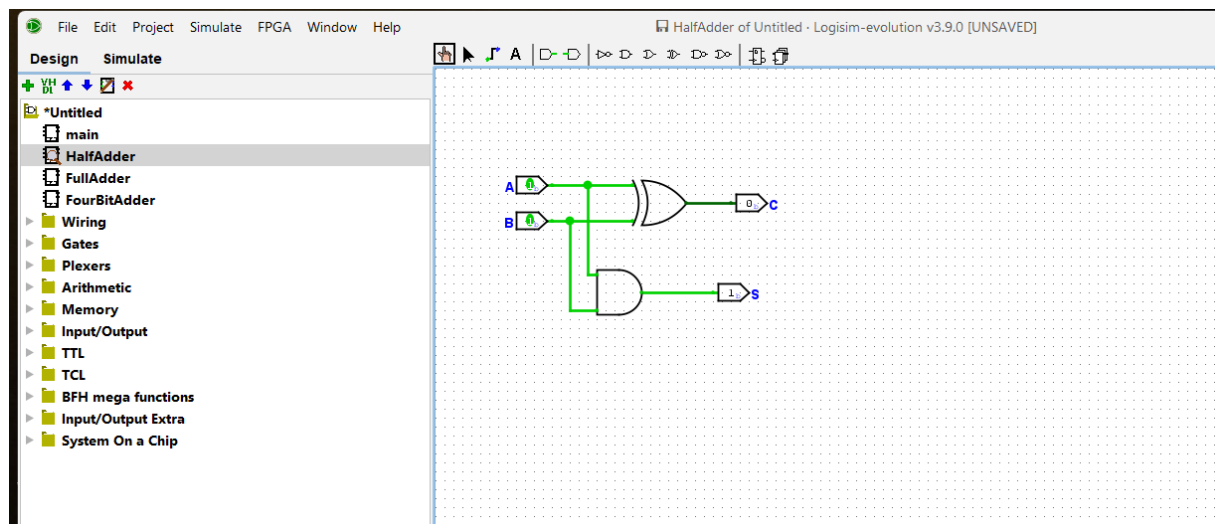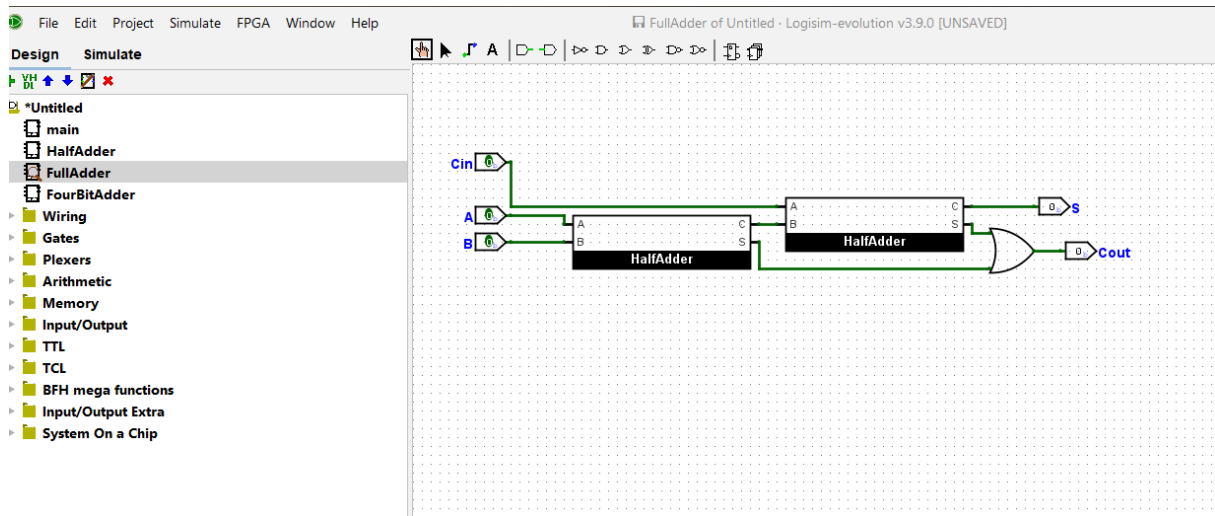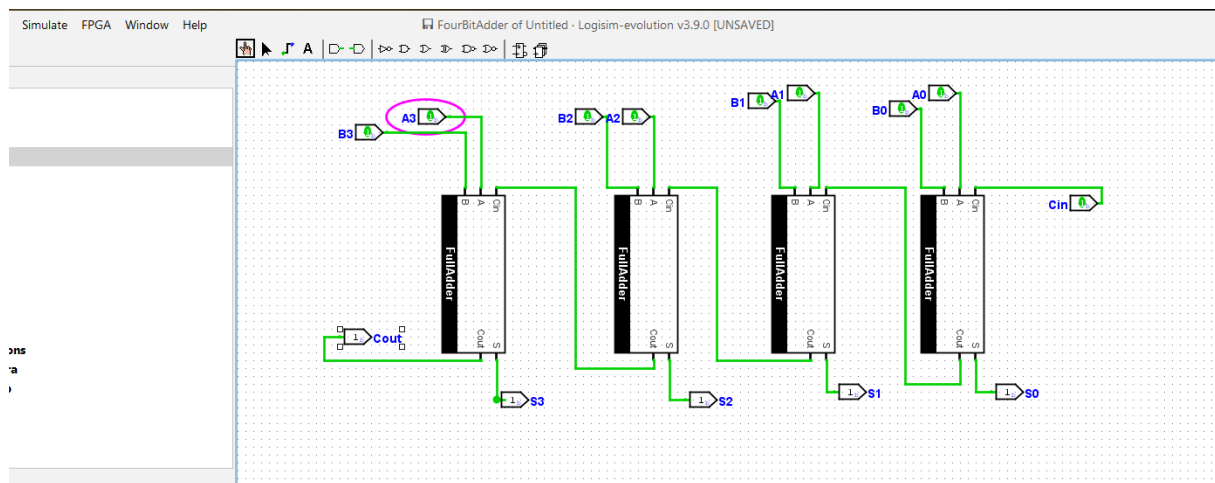
Assignment 3.4: Build your dream PC

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.

Ready? Save this file and export it as a pdf file with the name: **week3.pdf**