Template Week 3 – Hardware

Student number:

Assignment 3.1: Examine your phone

What processor is in your phone? Apple ’s A19 Pro chip

To which architecture family does this processor belong? In other words, which Instruction Set Architecture (ISA) is used? ARM64

How much RAM is in it? 12GB

How much storage does your phone have? 512GB

What operating system is running on your phone? IOS

Approximately how many applications do you have installed? 50+

Which application do you use the most? Tiktok

Can your phone be charged with what type of plug? Type C

Which I/O ports can you visually see on your phone? USB-C 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? ARM64

How much RAM is in it? 16 GB

How much storage does your laptop have? 256

Which operating system is running on your laptop? MacOS Tahoe

Approximately how many applications do you have installed? 20+

Which application do you use the most? Xcode

Can your laptop be charged with what type of plug? MagSafe 3

Which I/O ports can you visually see on your laptop? 1 MagSafe3, 2 USB-C, 3.5mm Jack

Assignment 3.3: Power to the laptop

What is the input voltage? 100-240 V AC

What is the output voltage? It depends but 20 V

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? AC is Used in buildings and DC is used for one direction flow batteries and electronics

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

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.

Nothing will happen it will charge normally.

Assignment 3.4: Build your dream PC

Screenshots PC configuration + motivation:

PCPartPicker Part List: https://nl.pcpartpicker.com/list/Z7JRZc

CPU: AMD Ryzen 9 3950X 3.5 GHz 16-Core Processor (€637.73 @ Amazon Netherlands)

CPU Cooler: NZXT Kraken Elite RGB (2025) 98.61 CFM Liquid CPU Cooler (€654.79 @ Amazon Netherlands)

Motherboard: Asus ROG Crosshair VIII Extreme EATX AM4 Motherboard (€649.00 @ Amazon Netherlands)

Memory: G.Skill Ripjaws V 128 GB (4 x 32 GB) DDR4-2666 CL19 Memory (€994.72 @ Amazon Netherlands)

Storage: Sabrent Rocket 4 Plus 8 TB M.2-2280 PCIe 4.0 X4 NVME Solid State Drive (€1572.30 @ Amazon Netherlands)

Video Card: Zotac GAMING SOLID OC GeForce RTX 5090 32 GB Video Card (€3947.87 @ Amazon Netherlands)

Case: NZXT H9 Flow RGB+ (2025) ATX Mid Tower Case (€299.90 @ Megekko)

Power Supply: Asus ROG THOR T3 GAMING 1600 W 80+ Titanium Certified Fully Modular ATX Power Supply (€750.00 @ Amazon Netherlands)

Total: €9506.31

Prices include shipping, taxes, and discounts when available

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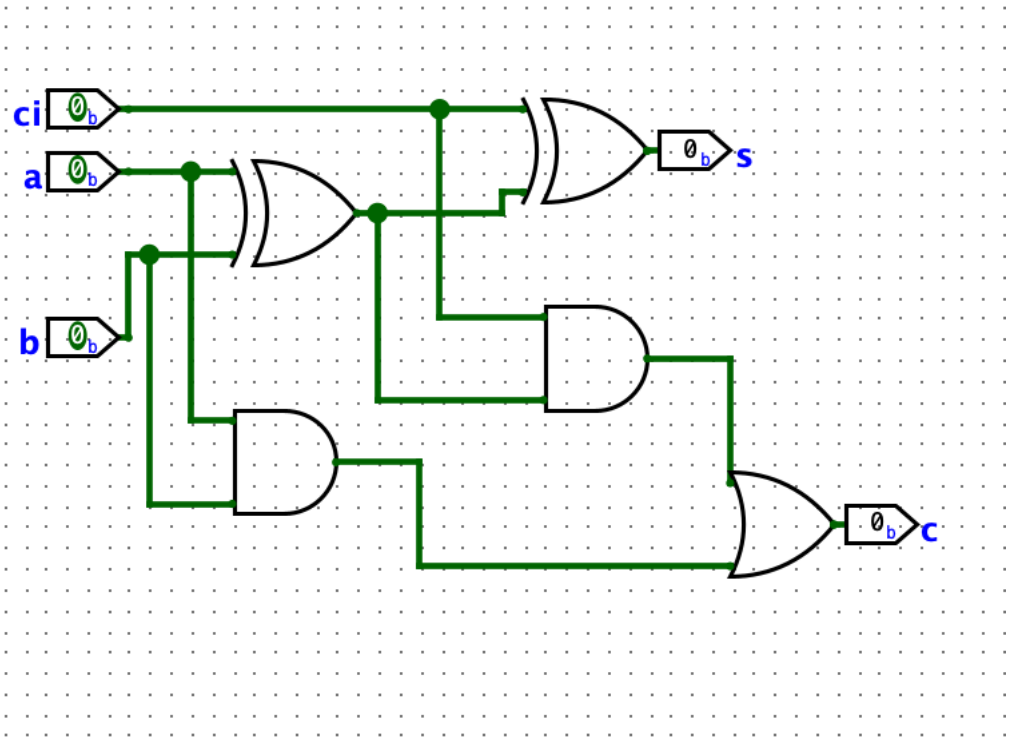
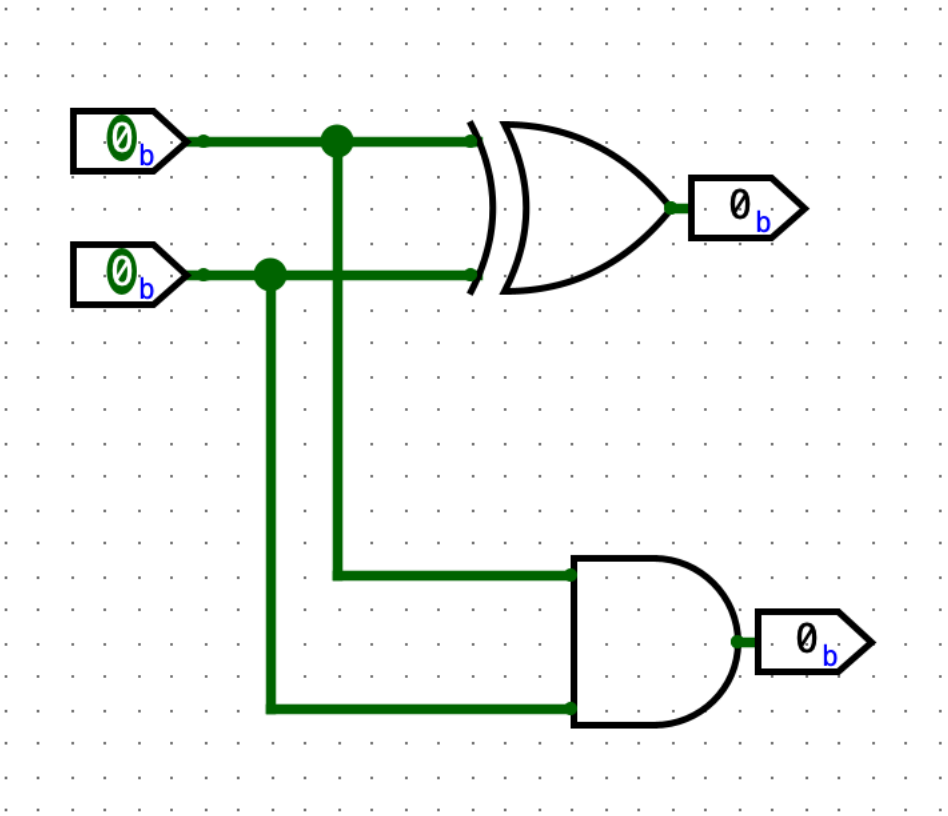
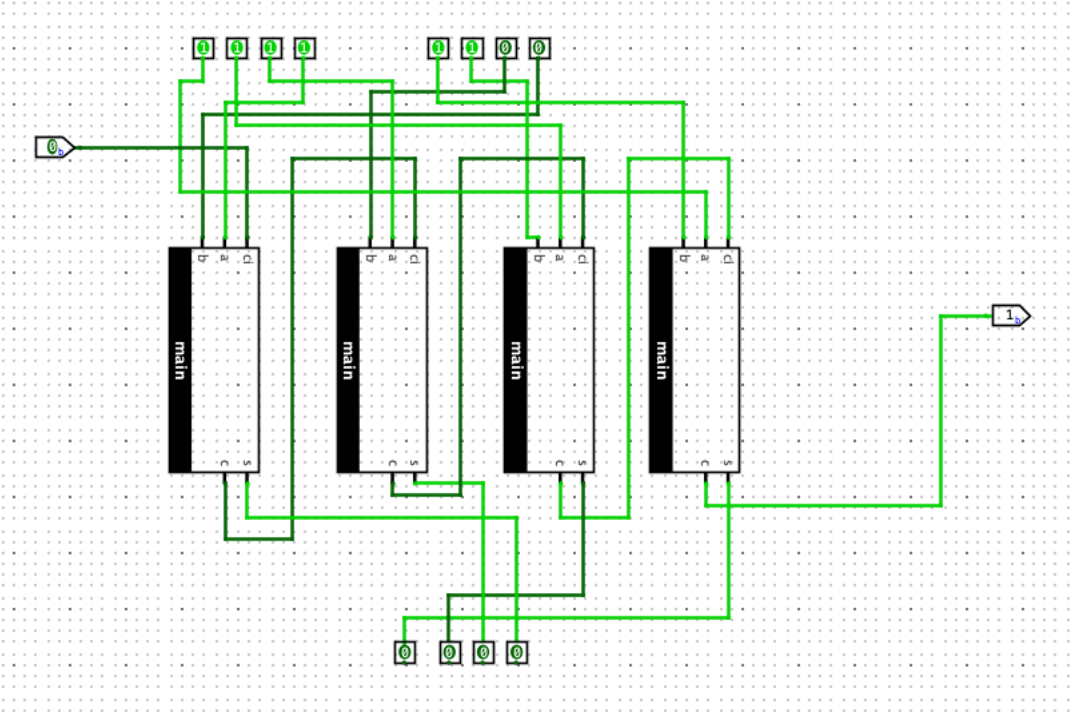
Assignment 3.5: Adders

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.







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