Template Week 3 – Hardware

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Assignment 3.1: Examine your phone

What processor is in your phone? I have the Iphone 13 Pro max which has a 6-core CPU, 5-core GPU, and a 16-core Neural Engine.

To which architecture family does this processor belong? In other words, which Instruction Set Architecture (ISA) is used? I believe Apple A15 Bionic belongs to the ARM architecture family and uses the ARMv8.6-A Instruction Set Architecture (ISA).

How much RAM is in it? I have 6 RAM in iPhone 13 Pro Max.

How much storage does your phone have? I have 1TB in my phone.

What operating system is running on your phone? The operating system is IOS 17.6 on my phone.

How many applications do you have installed? I have 46 installed applications.

Which application do you use the most? I use mostly Telegram, Google Chrome, YouTube, Microsoft teams, Thuisbezorg.

Can your phone be charged with what type of plug? I charge my phone using Lightning, but phone supports Mag safe

Which I/O ports can you visually see on your phone? I can only see Lightning port in the bottom of my phone.

Assignment 3.2: Examine your laptop

What processor is in your laptop? I have **AMD Ryzen 9 6900HS** processor with Radeon Graphics. This is an 8-core, 16-thread CPU with a base clock of 3.30 GHz and a turbo boost up to 4.9 GHz.

To which architecture family does this processor belong? In other words, which Instruction Set Architecture (ISA) is used? I believe x86-64 architecture family, which uses the AMD64 Instruction Set Architecture (ISA).

How much RAM is in it? I have 16 RAM

How much storage does your laptop have? I have 1TB of storage.

Which operating system is running on your laptop? I have Windows 11 Pro Education installled on my laptop.

Approximately how many applications do you have installed? I believe around 40 applications are installed on my laptop.

Which application do you use the most? Mostly I use Google Crome, IntelliJ IDEA, Microsoft Teams, Telegram, VMware Workstation Pro.

Can your laptop be charged with what type of plug? My laptop can be charged with AC adapter plus I can charge with USB-C charger.

Which I/O ports can you visually see on your laptop? I have   2 x USB-C ports (with DisplayPort and power delivery support), 2 x USB-A 3.2 Gen 2 ports, 1 x HDMI 2.0b port, 1 x 3.5mm headphone/microphone combo jack, 1 x DC-in port for the proprietary charger

Assignment 3.3: Power to the laptop

What is the input voltage? I have input voltage for laptop's power adapter is 100-240V.

What is the output voltage? I believe the output voltage is 20V DC.

How many watts can your power adapter deliver? My laptop`s power adapter could deliver up to 240 watts (W).

Is the input voltage AC or DC? As for input voltage is AC used.

Is the output voltage AC or DC? For the output voltage is DC used.

AC/DC what is that? AC-stands for alternative current, DC-stands for direct current.

If you reverse the polarity of the output voltage, is that bad for your laptop? If I reverse the output voltage it can damage my laptop because the DC is one direction only.

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 think my laptop is going to work fine. 50 watts is the maximum the adapter can supply, and my laptop will only draw the power it needs like 15watts. In this case, the power supply regulates the output of energy and is subject to the needs of the device connected (in this case, the laptop). In other words, if the adapter can supply enough current and power the device, then the user does not have to worry too much about the energy being drawn.

Assignment 3.4: Build your dream PC

Screenshots PC configuration + motivation:

Part List - Intel Core i9-14900K | Что нового в Microsoft Edge

https://pcpartpicker.com/list/YCXG89

Overview | Prices By Merchant

https://pcpartpicker.com/list/YCXG89   Markup: History   Save As   Edit This Part List

Compatibility: See notes below.   ⚡ Estimated Wattage: 972W

Component	Selection	Base	Promo	Shipping	Tax	Price	Where	
CPU	Intel Core i9-14900K 3.2 GHz 24-Core Processor	$437.85	—	Prime	—	$437.85	amazon.com	Buy
CPU Cooler	Asus ROG Ryujin III 70.07 CFM Liquid CPU Cooler	$279.99	—	Prime	—	$279.99	amazon.com	Buy
Motherboard	Asus ROG MAXIMUS Z790 FORMULA ATX LGA1700 Motherboard	—	—	—	—	No Prices Available	—	Buy
Memory	Corsair Dominator Titanium 64 GB (2 x 32 GB) DDR5-6600 CL32 Memory	$299.99	—	Prime	—	$299.99	amazon.com	Buy
Memory	Corsair Dominator Titanium 64 GB (2 x 32 GB) DDR5-6600 CL32 Memory	$299.99	—	Prime	—	$299.99	amazon.com	Buy
Storage	Samsung 980 Pro 2 TB M.2-2280 PCIe 4.0 X4 NVME Solid State Drive	$169.99	—	Prime	—	$169.99	amazon.com	Buy
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Storage	Samsung 980 Pro 2 TB M.2-2280 PCIe 4.0 X4 NVME Solid State Drive	$169.99	—	Prime	—	$169.99	amazon.com	Buy
Video Card	Asus ROG STRIX GAMING OC GeForce RTX 4090 24 GB Video Card	$2646.70	—	—	—	$2646.70	amazon.com	Buy
Case	NZXT H9 Flow ATX Mid Tower Case	$129.99	—	Prime	—	$129.99	amazon.com	Buy
Power Supply	Corsair HX1500i (2023) 1500 W 80+ Platinum Certified Fully Modular ATX Power Supply	$359.98	—	Prime	—	$359.98	amazon.com	Buy
Sound Card	Creative Labs Sound BlasterX AE-5 Plus 32-bit 384 kHz Sound Card	$119.99	—	FREE	—	$119.99	B&H	Buy
Case Fan	Corsair iCUE LINK QX120 RGB Starter Kit 63.1 CFM 120 mm Fans 3-Pack	$157.99	—	Prime	—	$157.99	amazon.com	Buy
Case Fan	Corsair iCUE LINK QX120 RGB Starter Kit 63.1 CFM 120 mm Fans 3-Pack	$157.99	—	Prime	—	$157.99	amazon.com	Buy

Total: **$5230.44**

Buy From Amazon

I really wanted to create a beast for gaming, rendering videos for TikTok and YouTube and streaming in mentioned platforms.

CPU: Intel Core i9-14900K (24 cores, 32 threads) is perfect for rendering, gaming, and streaming.

CPU Cooler: Asus ROG Ryujin III (liquid cooling) ensures optimal temperatures for high workloads.

Motherboard: Asus ROG MAXIMUS Z790 FORMULA supports PCIe 5.0, DDR5, and overclocking, with built-in Wi-Fi for seamless connectivity.

RAM: Corsair Dominator Titanium 64 GB DDR5-6600 offers exceptional speed and capacity for video projects and gaming.

Storage: Samsung 980 Pro 2 TB (x2) provides 4 TB of ultra-fast NVMe storage for quick file transfers and large video projects.

GPU: Asus ROG STRIX RTX 4090 (24 GB VRAM) excels at 4K gaming, video rendering, and streaming with top-tier performance.

Case: NZXT H9 Flow ensures great airflow, modern aesthetics, and space for components.

PSU: Corsair HX1500i (1500W, 80+ Platinum) guarantees efficient power delivery for demanding components.

Sound Card: Creative Labs Sound BlasterX AE-5 Plus enhances audio for gaming and streaming.

Fans: Corsair iCUE LINK QX120 (x2) ensures optimal cooling with RGB customization.

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.
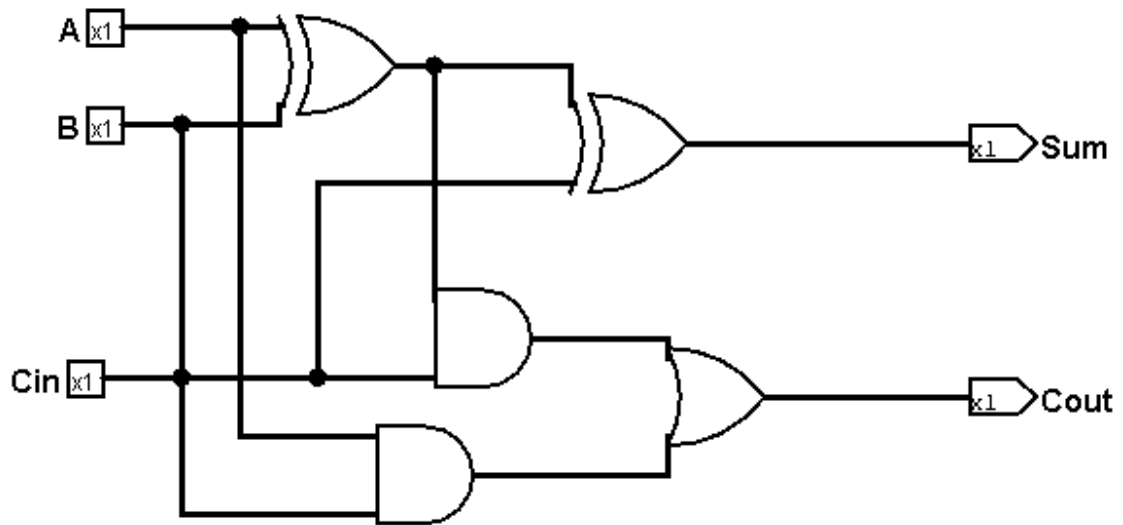
Paste the three exported PNG pictures in here.

Half Adder
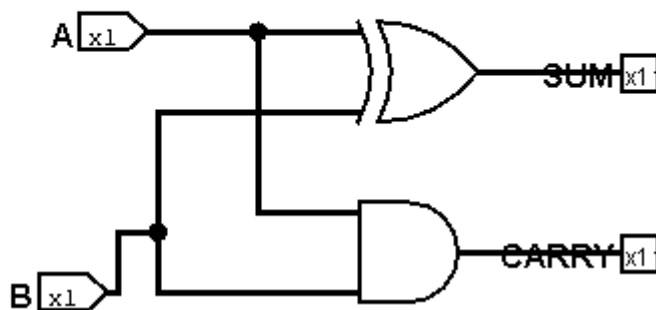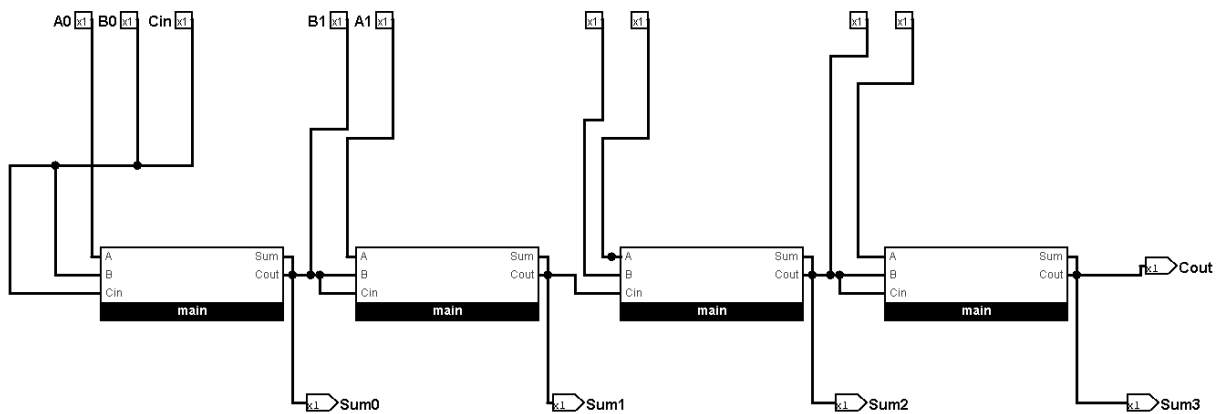

Full Adder

566741 Lozovan

4-bit Adder

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