Template Week 3 – Hardware

Student number: 569681

Assignment 3.1: Examine your phone

What processor is in your phone?

Octa-core (2x2.0 GHz Cortex-A75 & 6x1.8 GHz Cortex-A55) - Version A

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?

4GB

How much storage does your phone have?

64GB

What operating system is running on your phone?

Android 13.0

Approximately how many applications do you have installed?

35

Which application do you use the most?

WhatsApp

Can your phone be charged with what type of plug?

USB-C

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

Screen, volume up button, volume down button, lock screen button, speaker, front camera, back camera

Assignment 3.2: Examine your laptop

What processor is in your laptop?

AMD Ryzen 7 7435HS

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

X86

How much RAM is in it?

16GB

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?

104

Which application do you use the most?

IntelliJ Idea

Can your laptop be charged with what type of plug?

USB-C

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

USB ports, SD card reader, Audio in, HDMI, RJ-45

Assignment 3.3: Power to the laptop

What is the input voltage?

100-240V

What is the output voltage?

20V

How many watts can your power adapter deliver?

230W

Is the input voltage AC or DC?

AC

Is the output voltage AC or DC?

DC

AC/DC what is that?

AC is an oscillating current, DC is a current that flows in one direction

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

Yes, because it short-circuits the power input.

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, because the strength of the adapter is what it theoretically *can* produce. If the laptop usage doesn't exceed 15W, it falls in the range of the available 50W.

Assignment 3.4: Build your dream PC

Screenshots PC configuration + motivation:

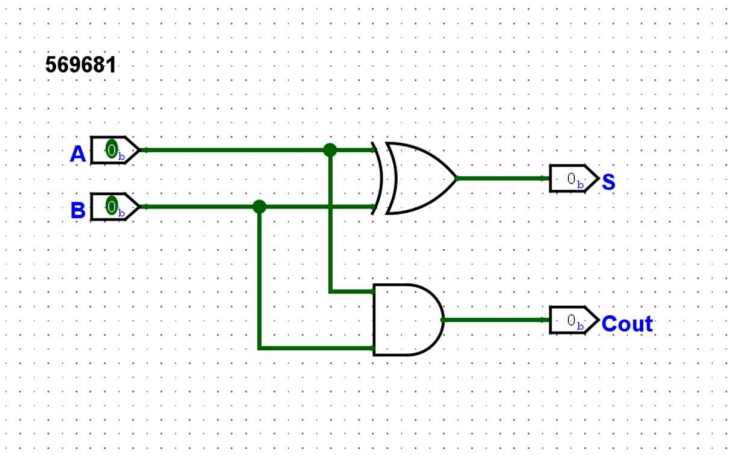
Component	Selection	Base	Promo	Shipping	Tax	Price	Where
CPU	AMD Ryzen 7 9800X3D 4.7 GHz 8-Core Processor	$479.99	—	FREE	—	$479.99	Buy
CPU Cooler	Corsair iCUE H150i ELITE CAPELLIX XT 65.57 CFM Liquid CPU Cooler	$124.99	—	FREE	—	$124.99	Buy
Motherboard	Gigabyte X870E AORUS ELITE WIFI7 ATX AM5 Motherboard	$290.92	—	—	—	$290.92	Buy
Memory	G.Skill Trident Z5 RGB 64 GB (2 x 32 GB) DDR5-6400 CL32 Memory	$209.99	-$20.00 [1]	FREE	—	$189.99	Buy
	+ Add Additional Memory						
Storage	Samsung 990 Pro 4 TB M.2-2280 PCIe 4.0 X4 NVME Solid State Drive	$269.99	—	Prime	—	$269.99	Buy
	+ Add Additional Storage						
Video Card	Asus TUF GAMING OC GeForce RTX 4090 24 GB Video Card	$1959.99	—	FREE	—	$1959.99	Buy
	+ Add Another Video Card						
Case	Thermaltake CTE C750 Air ARGB ATX Full Tower Case	$149.99	—	$4.99	—	$154.98	Buy
Power Supply	Corsair RM1000x (2021) 1000 W 80+ Gold Certified Fully Modular ATX Power Supply	$129.99	—	Prime	—	$129.99	Buy
Operating System	Microsoft Windows 11 Home OEM - DVD 64-bit	$119.99	-$15.00 [2]	FREE	—	$104.99	Buy

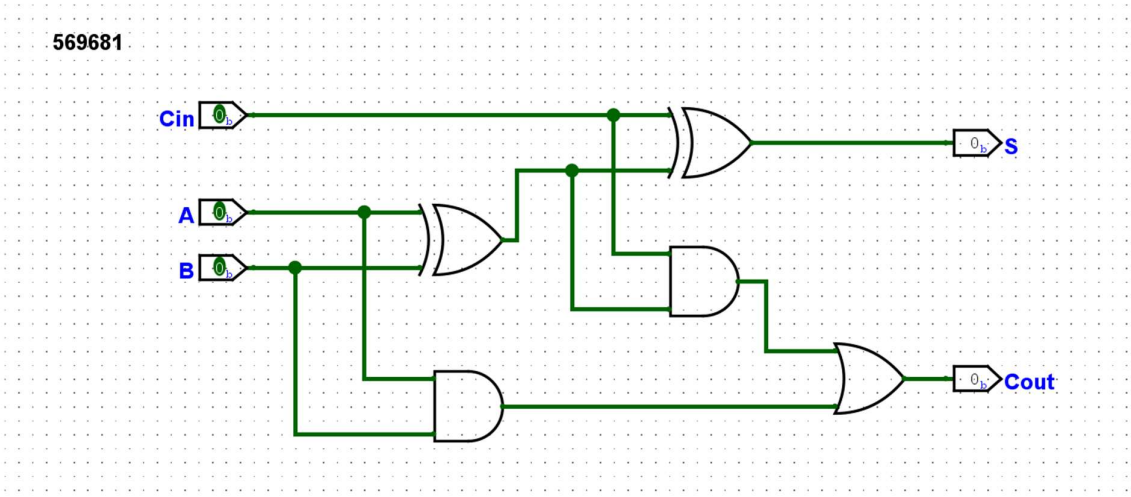
These are currently the newest and best components available.

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 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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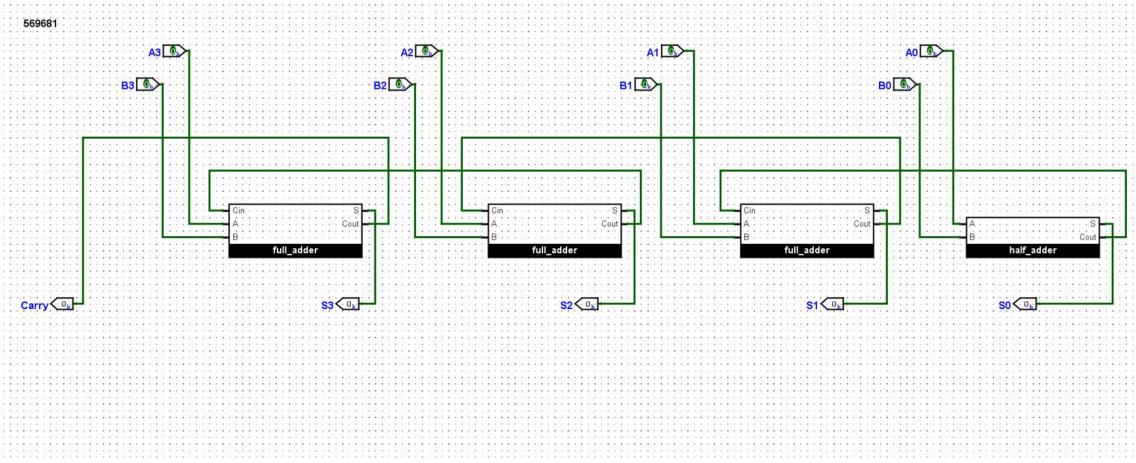
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A3
B3
A2
B2
A1
B1
A0
B0
Carry
S3
S2
S1
S0
full_adder
full_adder
full_adder
half_adder