

Template Week 3 – Hardware

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Assignment 3.1: Examine your phone

What processor is in your phone?

Octa-core (2x2.4 GHz Cortex-A78 & 6x2.0 GHz Cortex-A55)

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

ARMv8-A Architecture

How much RAM is in it?

6GB

How much storage does your phone have?

128GB

What operating system is running on your phone?

One UI 8.0

Approximately how many applications do you have installed?

192

Which application do you use the most?

Instagram

Can your phone be charged with what type of plug?

USB-C 3

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

oplaadpoort

Assignment 3.2: Examine your laptop

What processor is in your laptop?

Intel Core i7 vPro 9th Gen

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

X64

How much RAM is in it?

64GB

How much storage does your laptop have?

1TB

Which operating system is running on your laptop?

Win 11 25H2 education

Approximately how many applications do you have installed?

119

Which application do you use the most?

Brave

Can your laptop be charged with what type of plug?

HP 150W Smart AC Adapter (4.5mm)

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

1 smart card reader 1 SD media card reader

Left side Security lock slot (lock sold separately) 1 RJ-45 1 USB 3.1 Gen 1 charging port 1 USB 3.1 Gen 1

Right side 1 Power connector 2 USB Type-C™ (Thunderbolt™ 3, pass through support DisplayPort™ 1.43 , USB3.1 Gen 2, with BC 1.2) 1 HDMI 2.0b1,2 1 USB 3.1 Gen 1 1 headphone/microphone combo

Assignment 3.3: Power to the laptop

What is the input voltage?

2.7 A at 90 Vac and Maximum Load

What is the output voltage?

DC output 19.5V

How many watts can your power adapter deliver?

150W

Is the input voltage AC or DC?

AC

Is the output voltage AC or DC?

DC

AC/DC what is that?

AC is voor alternating current (wisselstroom) wat in beide richtingen kan gaan. Dit is normaal gebruikt voor langere afstanden in huizen bv.

DC is voor direct current wat maar naar 1 richting kan gaan. Dit is normaal gebruikt voor batterijen

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

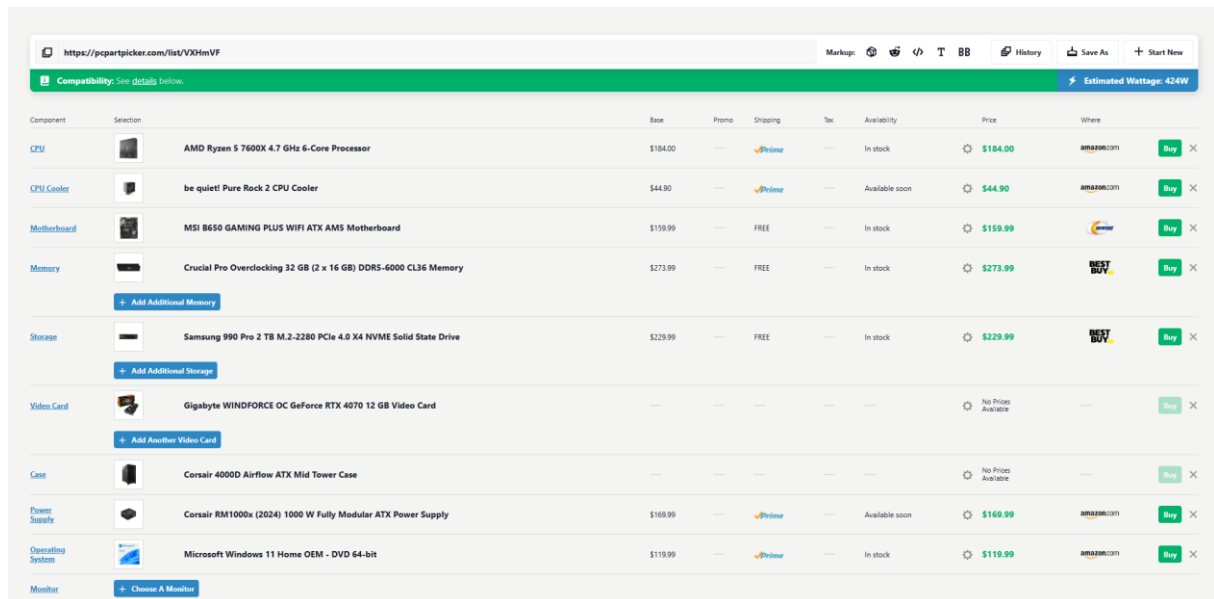
Ja, dit KAN slecht zijn voor je laptop. Meeste laptops hebben hier wel een soort van protection voor maar zo niet dan probeert je oplader juist energie weg te halen.

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.

Niks. Als de laptop maar 15 watt nodig heeft zal hij dat trekken van de adapter.

Assignment 3.4: Build your dream PC

Screenshots PC configuration + motivation:



The screenshot shows a web browser window with the URL <https://pcpartpicker.com/list/VXhmVF>. The page displays a PC configuration table with columns for Component, Selection, Base, Promo, Shipping, Tax, Availability, Price, Where, and a Buy button. The components listed are:

Component	Selection	Base	Promo	Shipping	Tax	Availability	Price	Where	Buy
CPU	AMD Ryzen 5 7600X 4.7 GHz 6-Core Processor	\$184.00	—	Prime	—	In stock	\$184.00	amazon.com	Buy
CPU Cooler	be quiet! Pure Rock 2 CPU Cooler	\$44.90	—	Prime	—	Available soon	\$44.90	amazon.com	Buy
Motherboard	MSI B650 GAMING PLUS WIFI ATX AM5 Motherboard	\$159.99	—	FREE	—	In stock	\$159.99	amazon.com	Buy
Memory	Crucial Pro Overclocking 32 GB (2 x 16 GB) DDR5-6000 CL36 Memory	\$273.99	—	FREE	—	In stock	\$273.99	bestbuy.com	Buy
+ Add Additional Memory									
Storage	Samsung 990 Pro 2 TB M.2-2280 PCIe 4.0 X4 NVME Solid State Drive	\$229.99	—	FREE	—	In stock	\$229.99	bestbuy.com	Buy
+ Add Additional Storage									
Video Card	Gigabyte WINDFORCE OC GeForce RTX 4070 12 GB Video Card	—	—	—	—	No Prices Available	—	—	Buy
+ Add Another Video Card									
Case	Corsair 4000D Airflow ATX Mid Tower Case	—	—	—	—	No Prices Available	—	—	Buy
Power Supply	Corsair RM1000x (2024) 1000 W Fully Modular ATX Power Supply	\$169.99	—	Prime	—	Available soon	\$169.99	amazon.com	Buy
Operating System	Microsoft Windows 11 Home OEM - DVD 64-bit	\$119.99	—	Prime	—	In stock	\$119.99	amazon.com	Buy
Monitor	+ Choose A Monitor								

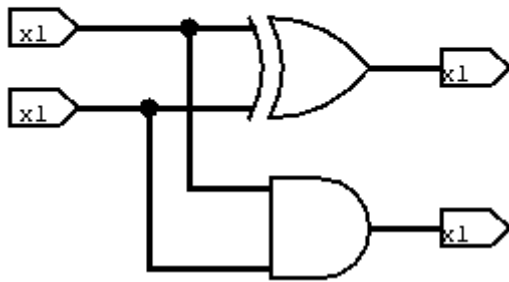
Deze PC hierboven is goed genoeg voor de spellen die ik wil spelen niet al te veel of te overpowered maar goed genoeg voor bijvoorbeeld Minecraft met shaders, GTA V en baldur's gate. in dit geval is mijn dream PC een PC die realistisch te behalen is qua prijs en goed future proof.

Assignment 3.5: Adders

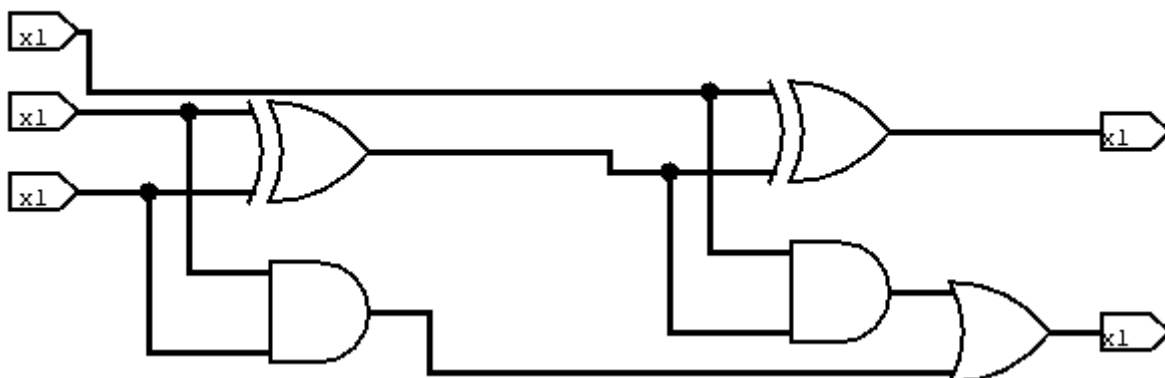
Complete the **half adder**, **full adder** and **4-bit adder** assignment as described in the PowerPoint slides of week 3 in Logisim. Save the chip design and also export three PNG pictures of the separate finished designs. See the PowerPoint slides of week 3.

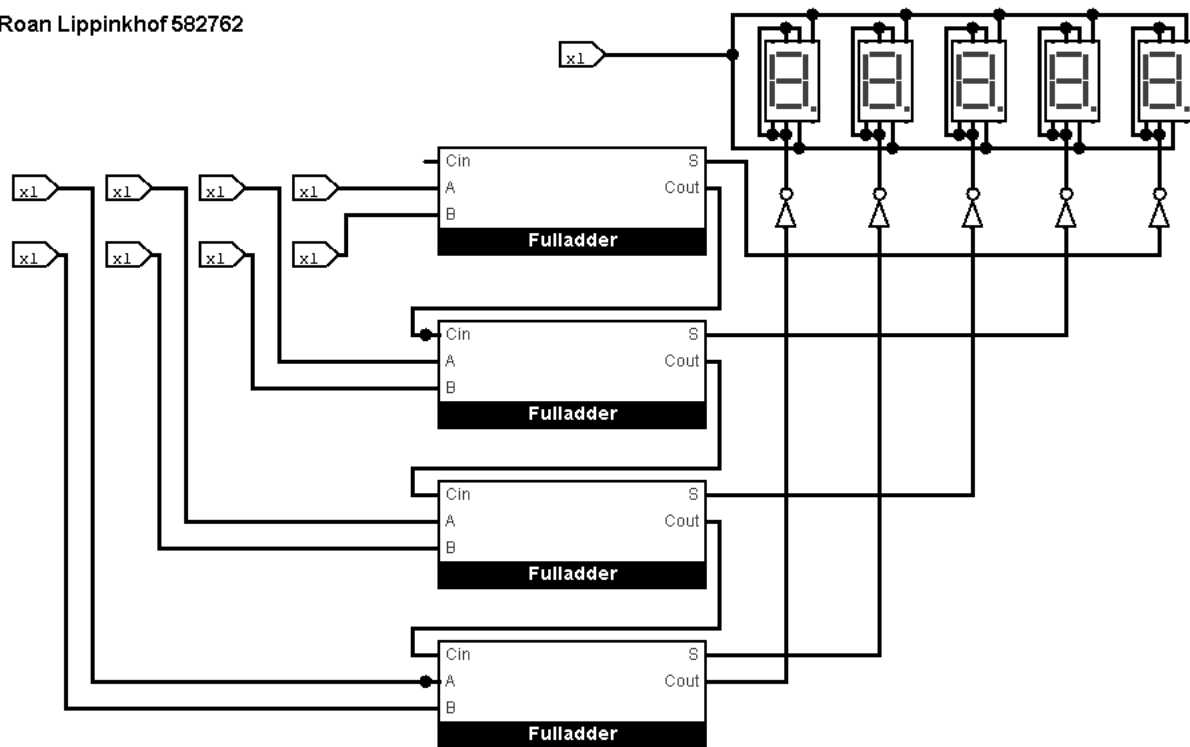
Paste the three exported PNG pictures in here.

Roan 582762



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