

Research Project: Building a computer

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1. (a) What are the tasks involved in building a PC?

- i. Decide what the PC will be used for understand hardware required.
- ii. Research parts and pricing.
- iii. Buy/Order parts and start to organize your build area as things arrive.
- iv. Ensure your work area is Electro-Static free (as electro-static can damage parts.)
- v. Do a 'moc assembly' to make sure all parts are in functioning correctly.
- vi. Assemble parts in correct order, use one of the many online/videos guides if unsure how to build a PC
- vii. After assembly, check to make sure the computer posts (Power On Self Test).

(b) Identify one by one the components required for building a PC - ensure you separate the required and optional!

- i. CPU (Central Processing Unit)
- ii. Motherboard
- iii. Memory - RAM
- iv. Graphics card - **PLEASE NOTE: Several of the new CPUs include graphics capabilities, depending on needs this may be not needed.
- v. Storage - This is where things will be stored. This is commonly referred to as a hard drive.
- vi. Power Supply - Depending on system demands this may vary in size and wattage.
- vii. Case - you need something to hold all the parts together.

(c) List each component with the cost of purchasing them.

Table 1: List of Parts.		
Part:	Part:	Price:
1. CPU	AMD - Threadripper 1950X 3.4 GHz 16-Core	717.00
2. CPU Cooler	Corsair - H100i v2 70.7 CFM Liquid CPU Cooler	109.18
3. Motherboard	Asus - ROG ZENITH EXTREME EATX TR4 Motherboard	489.89
4. Memory	Corsair - Vengeance LPX 32GB (2 x 16GB) DDR4-3200 Memory	349.99
5. Storage	Samsung - 970 Evo 500GB M.2-2280 Solid State Drive	167.99
6. Video Card	EVGA - GeForce GTX 1080 Ti 11GB FTW3 GAMING iCX Video Card	804.88
7. Case	Corsair - 750D ATX Full Tower Case	149.99
8. Power Supply	Corsair - Professional 1200W 80+ Fully-Modular ATX Power Supply	194.99
9. Motherboard	Asus - ROG ZENITH EXTREME EATX TR4 Motherboard	489.89
10. Operating System (OS)	Microsoft - Windows 10 Pro OEM 64-bit	124.79
11. Case Fans	Corsair - LL120 RGB LED x3 43.2 CFM 120mm Fans	109.58
11. Monitor	Dell - U2718Q 27.0" 3840x2160 60Hz Monitor	509.99
12. External Storage	Seagate - Expansion 4TB External Hard Drive	84.00
	Total:	4322.26

*Please note: I already have keyboard & mouse, these items were not taken into account when I built out this PC, please take this in consideration if using my build guide as a template.

- (d) **Explain where and how or where each component can be purchased or acquired.**

These parts were looked up and sourced on one of my favorite websites. The website www.pcpartpicker.com will check for part compatibility and will make sure you have required parts via pop-ups (ie: your PC does not seem to have a power supply, are you sure you want to continue?) The site will look at a number of online sources (ie amazon, walmart, newegg ...) and give you a price list of your computer, it will also give you the cheapest days to buy 'X' part based on price trends.

- (e) **What are those things in terms of services can you use your home PC to perform?**

I am an avid PC gamer, this machine is built to handle some pretty aggressive PC games. I also stream (play games online so people can watch), So I need a little extra horsepower when gaming to allow me to crunch the video encoding as well as push the video to the streaming service and still play games at the same time. I am also an aspiring coder, some of the AI programming I am currently working on requires extra horsepower to really chew on the data I feed it.

2. (a) **Look for an illustrated design of how a Microprocessor looks like and paste it, provide the type and maker.**
- (b) **Draw out the attributes of it - meaning what are the functional areas of the microprocessor - draw this out and explain what each attribute area does. explain the relationship between each attribute.**