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Project :

Build a PC to customers specifications

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ITOP 1101 – A+ HARDWARE

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CUSTOMER INFORMATION

We would be building a "**Gaming Rig**" for our customer, Chris, who is freelancer and earns with his editing skills on a freelancing website called fiver. Chris also likes to play High end games such as COD Warzone, Apex legends and many more with his friend's. Chris Currently uses his old PC which has RTX 1060 with i3 7th Generation and running Windows 10 Home. Chris has been saving some money up for his new PC as his last crashing in between games and exporting videos very slowly. He has asked me to help him build a PC for his work and gaming purpose.

BUDGET

3,500 CAD

SPECIFIC REQUIRMENT

The customer has specifically requested for 165 Hertz Monitor for gaming purpose and some video editing software's.
The customer has editing software's before hand and has asked not install any of them.

PARTS NEEDED

- Graphics Processing Unit (GPU)
- Central Processing Unit (CPU)
- Motherboard
- RAM
- PC Case
- Power Supply
- Storage
- Cooling Kit
- Keyboard
- Mouse
- Monitor
- Thermal Paste

SOFTWARE NEEDED

- Operating System

Graphical Processing Unit (GPU)

“MSI NVIDIA GeForce RTX 3060 Gaming X”

The GPU is one of the most important components of a computer, as it is utilized for both video editing and heavy gaming. A RTX 3060 would be a wonderful fit for the build based on the program’s my client would be using for his work as well as gaming in his spare time, and it would also help us remain inside budget.

Cost – $ 544^{99}
“ https://www.amazon.ca/MSI-GeForce-RTX-3060-12G/dp/B08WPJ5P4R ”

After analyzing multiple GPUs on the market and reading various forum debates on the best GPU for my client's build, I've decided on the best GPU for my client's build. I've determined that the “**MSI NVIDIA GeForce RTX 3060 Gaming X**” is the finest choice. Many websites suggest that the Nvidia GeForce RTX 3080 Ti is the best option, but in my opinion, it would be spending too much for a single component as my client requirement would be fulfilled by the 3060 itself. There is no need to pay for the extra power. This GPU provides more than adequate processing capability for the tasks at hand.
As per the reviews go for this certain GPU, I visited several sites such as reddit, pcgamer.com, ign.com and found that the MSI 3060 have well balanced architecture, and the 12 GB provides a bit of future proofing as well and that’s why I choose this specific GPU for my build.

Central Processing Unit (CPU)

“Intel Core i7-12700K”

In today’s world, there are several CPU products available from both Intel and AMD. I was able to filter down various possibilities while attempting to find the greatest fit for my customer**.** The search for a perfect CPU for my build came down to two in the high tier range that were i7-12700k and i9-12900K. Because of our budget I decided for the cheaper option in the high tier CPU’s that was a Core i9-12700K.

Cost – $ 519^{98}

“ https://tinyurl.com/2p9c6fc6 ” (Redirect’s to bestbuy.ca)

I feel this was the greatest option within a given price range based on multiple reviews from various sources. The following are the reasons why Intel was chosen over AMD: When comparing AMD vs Intel CPU characteristics, it's clear that Intel provides more affordable choices with higher performance and a more current platform that supports DDR5 and PCIe 5.0. As far the choosing i7 over i9, the reason was i7 is a much better value option for the money than the core i9. Based on the review’s I read on google and tecchspot.com, the core i7 12700K is unlocked and can be overclocked. It Runs nicely and stay’s cool under load compared to the core i9. With all these in mind I choose Core i7-12700K for my build.

Motherboard

“MSI Z690-A PRO DDR5”

The MSI Z690-A PRO DDR5 Motherboard has been chosen for my customer. This motherboard appeared to be the best fit for the processor and GPU I had chosen. I choose this specific motherboard cause of all the compatibility it had with my CPU. Some other features it provides are as follows:

- Built-in USB 3.2 Gen 2X2 port, 4x faster than USB 3.2 Gen 1
- Strengthened built-in M.2 thermal solution
- Detect CPU and GPU temperatures and automatically adjust system fan duty to a proper value

Cost – $ 299^{99}

“ https://tinyurl.com/2p9anyd4 ” (Redirect’s to newegg.ca)

While this motherboard is a little more expensive than other Asus or Gigbyte motherboards, MSI is, in my view, the superior manufacturer. I checked several websites while finding the perfect fit for my build and while searching I found the MSI Z690 which had all the features I was looking for as well was compatible with my CPU as well. The Automatic Temperature detection feature was the one that won me over. The stable functionality and high-quality assembly of this motherboard was perfect for my build.

Random Access Memory (RAM)

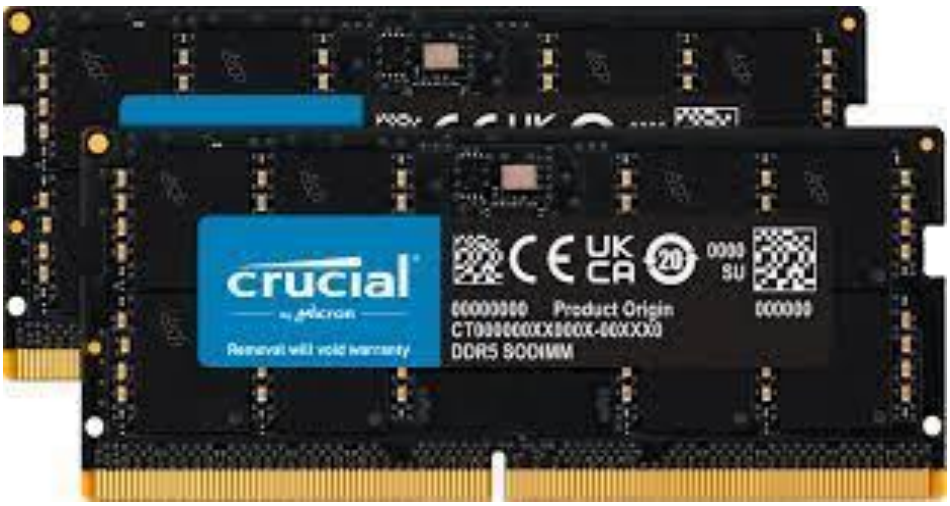
“**Crucial 64 GB (2 X 32 GB) DDR5-4800**”

While I was inclined to go all out and install 128 GB of RAM, I decided to keep it simple and stick with 64 GB. I feel 64 GB will suffice for my client's requirements. A minimum of 32 GB of RAM is required. While we have the choice of adding 4 x 16 GB of RAM to obtain the needed 64 GB, I have yet to see any proof that one is better than the other for my customer.

Cost - $ 599^{99}

“ https://tinyurl.com/mrxyfdsx ” (Redirect’s to newegg.ca)

I discovered that both Crucial and Kingston are reliable organizations after examining a range of RAM providers and accumulating necessary information. When picking between the Crucial and the Kington HyperX Fury, I discovered that they both had quite identical statistics, therefore I decided solely on price.



PC CASE

"**Lian Li LANCOOL 205**"

There are numerous possibilities when it comes to PC cases. While going off the beaten path and buying a fancy case sounded fun, I managed to keep within our budget. Going with some sleek, I chose the Lian Li LANCOOL 205 which offers excellent cooling performance, and the case is based on a stable steel construction with completely removable front cover and side panel made of tempered glass.

Cost – $ 84^{99}

"https://tinyurl.com/u3jrfe" (Redirects to tradeinn.com)

The case itself looks incredible and has masses of drive bays as well. It also provides great cable management as well as great airflow for the heat. It has an integrated PSU shroud and three different 120 mm RGB fans are also included with the case.

Power Supply

"Inland 750w 80 Plus Gold ATX Semi Modular"

Choosing a power supply is interesting because you get to examine all of the different tier levels available and all of the creative ways vendors have tried to make their product shine out. It is rather straightforward once you have a good idea of how the divisions are considered. The 80 Plus programme is a voluntary certification scheme that promotes energy efficiency. The higher the tier, the more effective it is. For our build we have selected Inland's 750w power supply.

Cost - $ 99^{99}

" https://tinyurl.com/nhfd52tz " (Redirects to captaincomputers.com)

After searching and researching different power supply I found this specific one most suitable for our build cause it had 750w output that would be sufficient for the CPU and GPU to work flawlessly. This Power supply unit also uses an active PFC design with a single +12V output rail to give PCs powerful and reliable power. Intel ATX 12V specifications are met. SLI and CrossFire systems require sufficient and consistent current.

Storage

“**Samsung 870 QV0 2 TB SSD**”

Chris will require a large amount of storage space. While a solid state drive outperforms a hard disc drive, it is significantly more costly. However, because this is a need, I chose the Samsung 2 TB SSD.

Cost - $ 289^{99}

“ https://tinyurl.com/342v82xc ” (Redirects to newegg.ca)

The Samsung SSD was chosen since it is a well-known, trustworthy brand that has been providing internal and external storage drives for many years. I believe this drive was a wonderful pick based on various evaluations on the Newegg website and Canadian computers. I choose this specific SSD cause Samsung has enhanced it in every way by improving random access speed and sustained performance. Based on the reviews I read on newegg.ca, this SSD is known for it’s easy installation and is reliable and sustainable.

Cooling Kit

“**Lian Li Galahad 240 mm RGB Water Cooling Kit**”

While the case we choose has two built-in fans, we'll need to add a CPU fan. Although the stock standard fan may suffice, I believe we should make this simple adjustment to maximise cooling while also gaining the benefit of a quieter fan and for our build, I choose Lian Li Galahad 240 mm Water cooling kit.

Cost - $ 176^{97}

“ https://tinyurl.com/yckpsjd8 ” (Redirects to amazon.ca)

According to reviews, the Lian Li Galahad fan would be quieter and provide better cooling than the factory model. While there were other suggested fans to choose from, I went with this one because of its low price. It also comes with a removable magnetic aluminum cap and includes different customizable RGB lightning. Another feature that caught my eye was rotatable block housing . With all these in mind and other reviews I saw on the web I choose this specific Water cooling kit for my build.

Keyboard

"**Razer BlackWidow Tournament Edition**"

The Razor BlackWidow Tournament Edition V2 is an outstanding gaming keyboard with it's sleek design. I specifically Choose this keyboard because of the low pre-travel distance and the minimal force needed for keys to actuate. We can also customize the RGB backlight in the companion software. As Chris would gaming on his PC in the free time, this would the perfect keyboard to have.

Cost - $ 80^{99}

" https://tinyurl.com/fs8cbah2 " (Redirects to Razor.com)

Mouse

"**Razor Basilisk V3**"

With its superior textured surface and design, as well as an innovative scroll wheel with several modes and great programmability, the Razer Basilisk V3 stands out among gaming mice. Although there are less expensive alternatives, the Basilisk V3 is clearly superior among other mice in the same range. Mouse plays an important role in any game and would be great addition to the build and would help Chris as well.

Cost – $ 89^{99}
" https://tinyurl.com/2p89s3rw " (Redirects to Razor.com)

Monitor

“ASUS TUF Gaming VG27VQ 27” Curved Gaming Monitor 165Hz Full HD (1920 x 1080) 1ms”

This is a difficult decision to make with so many monitor alternatives available nowadays. It is mostly determined by client preference. I've narrowed down a recommendation based on my experience and the manufacturer's reputation after analysing numerous models and goods available. For this build I choose ASUS TUF monitor.

Cost – $ 299^{98}

“ https://tinyurl.com/4dxhj9sy ” (Redirects to amazon.ca)

I would suggest Asus TUF Gaming monitor cause of all the features it has such as the input lag is remarkably low and the high resolution and screen real estate allow you to see more details of your gaming arena as well the colours while video editing. It has an excellent refresh rate that ensures smooth motion. It is an excellent monitor for gaming as well as any other editing related work.

Thermal Paste

"**Arctic MX-4**"

There's nothing special about thermal paste, so there's no need to overcomplicate things to justify spending $30 on a tube. Arctic MX-4 was my choice.

Cost - $ 11^{25}

" https://tinyurl.com/4ea34cek " (Redirects to amazon.ca)

Operating System

"**Windows 10 Professional**"

I have chosen Windows 10 Professional Version because it would be able to complete any task thrown at it. Chris would easily be able to edit high end videos as well as play high end games on this version of windows.

Cost – $ 199^{99}

" https://www.microsoft.com/en-us/d/windows-10-pro/df77x4d43rkt?activetab=pivot:overviewtab "

Budget Calculation

Parts	**Price (in $)**
GPU	544.99
CPU	519.99
Motherboard	299.99
RAM	599.99
PC Case	84.99
Power Supply	99.99
Storage	289.99
Cooling Kit	176.97
Keyboard	80.99
Mouse	89.99
Monitor	299.98
Thermal Paste	11.25
Operating System	199.99
Total :	***3209.13***

We Stayed within our dedicated budget of 3,500 CAD

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