Assignment 3

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Computer 1

First thing when looking forward to building a high-end gaming machine capable of gaming up to 200 plus frame-per-seconds at max settings, maybe even at 4k resolution so you can get the most out of everything, is looking at your current budget. For this one I will assume that the client will have almost unlimited budget as long as the parts will improve gaming performance. First thing to pick out is what CPU will the client be needing. I personally recommend the Intel Core i5-10600K for just gaming alone, it have six cores and twelve threads so you can be doing many other things in other monitors while playing games, also overclocking available if the client want more performance (Messer, *CPU Features - CompTIA A+ 220-1001 - 3.5* 2019). From my one source it is one of the best if not the best current year CPU for gaming (Alcorn, 2020). With the 10600k having a LGA1200, we will be looking for a motherboard of that type. The motherboard I recommend is the Asus ROG STRIX Z490-E Gaming ATX motherboard, it have pretty much everything you would need in a motherboard, 4 ram slot (for future upgrades if needed), m.2 slots, 3 PCI-e x16, raid support if needed, and many rear I/O features. For cooling, I would recommend going for air cooling with a Noctua fan or if the client want water cooling, I would recommend the NZXT Kraken Z63. For casing, any casing would be fine, but I do recommend the Fractal Design Define 7 for the best filtration system and as a bonus it has tempered glass side panel (Soderstrom, 2020). With the case picked out I would go for a few 120mm case fan with it, minimum 4. Going to the more important part the hard drives I one hundred percent recommend for gaming is a(n) SSD with a very high storage, as much as 4tb, depends on how many games the client want to run. For now, I would just go with a M.2 SSD with about 256GB for a boot drive and another 2 TB SSD for game storage. The SSD will give the client the fastest gaming performance and since the client said he won’t be using that much storage other than games we won’t be needing that much storage (Messer, *Custom Computer Systems - CompTIA A+ 220-1001 - 3.8* 2019). If the client want a piece of mind about data lost I would just recommend building a cheap 2 storage raid configuration since most if not all of the data will be games. For memory, RGB will be king when talking about gaming and I recommend four sticks of 8GB for a total of 32GB of RAM, it will be DDR4 3200MHz CL16, one of the fastest for gaming out there. Graphics card, the most important part of a gaming PC, I would get the GeForce RTX 2080 Ti or even wait for the newer RTX 3090. Both is two of the most expensive and they have everything a gamer would want; It also have raytracing if the client runs any game that support it. For cheaper option, the GeForce 1660 Super or the GeForce 2070 should cover most if not all the games midrange-wise. For input devices, any kind of keyboards and mouse combo the client is comfortable with, including a webcam and microphone if client is interested in streaming; Also would need to buy a gamepad/joy stick if the client want to use the computer for console gaming (Messer, *Peripherals - CompTIA A+ 220-1001 - 3.6* 2019). For video output, I recommend a 144Hz refresh rate monitor with a full HD resolution, 1 ms respond time. Most high powered, power supply will do with this machine and of course, windows 10 home for the operating system. The total price of this machine will be around $4,000 US dollars with the 2080 Ti card, to the low of $2,400 for the midrange option.

Computer 2

Second client is a businessman and want to store financial data for his business and would rather not lose it. First, I would recommend picking a motherboard with many SATA ports so the client can setup a RAID configuration to save his data for backup if his computer get corrupted, RAID setup are one hundred percent recommended when ones don’t want to lose their important data (Messer, *Custom Computer Systems - CompTIA A+ 220-1001 - 3.8* 2019). I recommend the ASRock x470 Taichi Ultimate ATX AM4 Motherboard, it have 8 SATA ports for all the drives that the client would need. For CPU, I would use any CPU in the AM4 family, since the client does not specify that he will work on the machine, he just says he store data for his business I would go for a cheap option, a(n) AMD Ryzen 5 3400g would be enough for the client to do whatever he needs on the computer. The stock cooler that came with the CPU, the Wraith Spire, is usually enough for the machine since it won’t be needing a lot of CPU cooling. For memory, depends on what the client does we may need more or less but I recommend at least 32GB of RAM, DDR4 and 3000Mhz should be enough. For graphics card, since he won’t be doing any intense graphics activity a cheap/decent one should cover it, the GeForce GT 710 1GB video card just have enough for a office worker’s need (Monckton, 2016). For case choice, any case that can fit everything is good enough I would pick one for less than $100 for money purposes. A decent 650w power supply would be good enough to power everything here. For storage, the most important part, I would go for as many as 8 10TB hard drives, to as low as 4 2TB hard drives, all depends on how big the client needs his storage spaces to be. I would also put the raid on a RAID 1 (data mirror) configuration so that if one drive fails, there will be backup for it. Any mouse and keyboard setup would work here. The whole machine should ring around $1500 US dollars to upward of $3000 dollars depending on the storage size.

Computer 3

For a college student, I would recommend the client to just buy a good laptop but if he insists on having a PC, this is my recommendation. We will start with the AMD Ryzen 7 3700x, with a(n) MSI B450 motherboard. For memory, I would go with 2 sticks of 16GB DDR4 3200MHz, that will cover everything the student plan on doing, video editing or not. For storage I recommend one for boot drive and 2 for raid setup incase data lost since losing data as a student could mean failing the semester. A 250GB m.2 SSD should be good enough for a boot drive and to store all the important data needed for fast access; also 2 2TB HD should be good enough for storage and RAID backup setup. The only video card I recommend is the 1660 super, it pretty much can run any games the student want to and it’s decent enough for virtualization and editing station (can be upgraded if needed). Any case under $100 will do for saving purposes. A decent 700w power supply should cover everything in this build and with a decent headroom to expand on later if needed. Any 60/75hz monitor will do justice for this build and also any keyboard and mouse combo the student is comfortable on. The cooling fan that come with the CPU should be enough for it and if needed, any 3 120mm case fan should be enough to run everything fast, cool and smooth. The total for this build should be around the lower ends of $1000 US dollars to the higher of around $1400.

**References**

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