**Overview**

Work individually to understand and establish the specifications for a PC dedicated to a specific task or application.

My PC application topic Is: **Gaming Computer**

Answering the student questions will help you to develop a deeper understanding of the main components of a personal computer. It will also help you to identify the features that are most important for your specific PC application topic and the features that are nice to have but are not as critical for your topic.

Preparing a brochure explaining your PC application topic and your selection of personal computer components and features will help you to summarize what you have learned from the student questions. The brochure will also help you to share your findings in a “tradeshow” to be held in class.

The date for the “tradeshow” is: Oct 23

**Student Questions**

1. Think about your PC application topic. Do some research to find general answers to the following questions.
   1. How important is computer speed for my topic ( High / Medium / Low)? Justify your answer using examples of how a computer is used to perform a task related to your application.
      * High computer speed is very important for my topic (Gaming Computer)
      * High speeds are essential for a gaming computer as it must be able to process inputs very quick and output them at a fast pace as well
      * They are made for gaming, which requires many tasks to be done quickly, so it is important that the computer overall isn’t slow
   2. How important is data storage for my topic ( High / Medium / Low)? Justify your answer using examples of how a computer is used to perform a task related to your application.
      * Data storage iis a very high importance for my topic
      * Gaming computer require very large storage amounts as many applications are loaded on them
      * Fast storage (SSD) is also required as many applications are large and take a long time to launch
   3. How important is graphics and sound for my topic ( High / Medium / Low)? Justify your answer using examples of how a computer is used to perform a task related to your application.
      * Graphics are very highly important for my topic as many games are highly graphically intensive
      * High end graphic cards are needed, such as an RTX 2060 or GTX 1080/1070
      * High definition audio is important as well, because audio quality is needed for games, especially headphones for spatial sound
      * Crisp audio is necessary for optimal gaming experience
      * **Speakers are not necessary, though they’re a nice addition**
   4. How important is internet connectivity for my topic ( High / Medium / Low)? Justify your answer using examples of how a computer is used to perform a task related to your application.
      * Internet connectivity is also very highly important for my computer, since all games have to be downloaded using internet from game launchers or a website
      * Also drivers must be installed off the internet, and game/software updates
      * High internet speeds are preferred, but a stable, medium speed connection is all you need
2. CPU Processor Chip
   1. What speed of CPU Chip do you require? (High / Medium / Basic)
      * High or medium speed chip is necessary
      * High speed chips such as an i7 8700k is optimal for high end gaming
      * Mid range CPU are also good, like an AMD Ryzen 5 3600
   2. Provide an example of a high speed CPU using the list of suppliers provided in the appendix. List the Model Number, Price, and Vendor Source. Also list its main features
      * A high speed cpu is the i9 9900k
      * It is $639.99 CAD
      * 3.60GHz base speed, 5.00GHz boost
      * 16mb cache
      * Has Intel UHD 630 Graphics on-board
      * Intel Optane memory supported
      * Very high speed, good for gaming and editing/media production
   3. Provide an example of a medium speed CPU using the list of suppliers provided in the appendix. List the Model Number, Price, and Vendor Source. Also list its main features
      * A mid speed cpu is AMD Ryzen 5 3600
      * It is $264.99 CAD
      * 3.60 GHz base, 4.2 GHz max
      * 32 mb L3 cache
      * No integrated graphics, need separate GPU
      * Very bang-for-the-buck CPU, good for games, 100+ FPS at high settings in most games
   4. Provide an example of a basic speed CPU using the list of suppliers provided in the appendix. List the Model Number, Price, and Vendor Source. Also list its main features
      * Basic cpu is Intel Pentium Gold G5400
      * $93.96 CAD
      * 3.3 GHz base, no boost
      * 2 cores, (cache not given)
      * Integrated intel UHD graphics 630
      * Very cheap processor, good for basic desktops
      * Web surfing, video watching
      * Not good for editing or heavy tasks

What would be the least expensive CPU Chip that meets your requirements? List the Model Number, Price, and Vendor Source.

The least expensive CPU that meets the minimum requirements is the AMD Ryzen 3 2200G. The price is $118.70 on Amazon. It has 4 cores and a base speed of 3.5 GHz and it has integrated Vega 8 Graphics,

1. RAM Memory
   1. What size of RAM Memory do you require? (Large / Medium / Basic)
      * Medium amount of RAM is the requirement, although large amount of RAM is a nice addition
      * 16GB is all that is required, though 32GB is also good
   2. Provide an example of a large size RAM using the list of suppliers provided in the appendix. List the Model Number, Price, and Vendor Source. Also list its main features
      * Corsair Vengeance 64gb RAM
      * 2666MHz speed
      * 4x16 GB
   3. Provide an example of a medium size RAM using the list of suppliers provided in the appendix. List the Model Number, Price, and Vendor Source. Also list its main features
      * Corsair Vengeance LPX 32GB DDr4 RAM
      * 3200MHz speed
      * 4x8GB
   4. Provide an example of a basic size RAM using the list of suppliers provided in the appendix. List the Model Number, Price, and Vendor Source. Also list its main features
      * HyperX Fury 16GB DDr4 RAM
      * 2133 MHz speed
      * 2x8 GB
   5. What would be the least expensive RAM Memory that meets your requirements? List the Model Number, Price, and Vendor Source.

HyperX Fury 16GB 2133 MHz ram. $120.67 on Amazon.

1. Graphics Card
   1. What graphics speed and resolution do you require? (High / Medium /Basic - On Motherboard)
      * The preferable graphics card is Medium range
      * Though, I would like the NVIDIA GeForce GTX 1080 which is a very high-end GPU
      * 1080P is all that is needed, though 1440p is preferred, 4K being upper end
   2. Provide an example of a high-end Graphics Card using the list of suppliers provided in the appendix. List the Model Number, Price, and Vendor Source. Also list its main features
      * NVIDIA GeForce GTX 1080 Ti
      * $744.60 on Amazon
      * 11GB GDDR5x RAM
      * 1582HMz boost clock
   3. Provide an example of a medium-end Graphics Card using the list of suppliers provided in the appendix. List the Model Number, Price, and Vendor Source. Also list its main features
      * NVIDIA GeForce GTX 1060
      * $359.25 on Amazon
      * 1280 CUDA cores
      * 6 GB GDDR5
      * Boost Clock 1708 MHz
   4. What would be the least expensive Graphics Card that meets your requirements (or do you just need basic graphics provided by the motherboard)? List the Model Number, Price, and Vendor Source.
      * NVIDIA GeFroce GTX 1050
      * $211.20 on Amazon
      * 768 CUDA Cores
      * 4 GB GDDR5 RAM
      * 1392 MHz boost clock
2. Sound Card
   1. Do you require special sound support? (High / Medium /Basic - On Motherboard)
      * Basic needs
      * Do not require extra sound card
      * Motherboard sound card is good enough
   2. Provide an example of a high-end Sound Card using the list of suppliers provided in the appendix. List the Model Number, Price, and Vendor Source. Also list its main features

- ASUS Sound Card Essence STX II

- $330 on Amazon

* 1. Provide an example of a medium-end Sound Card using the list of suppliers provided in the appendix. List the Model Number, Price, and Vendor Source. Also list its main features
     + [EVGA Nu Audio Card](https://www.amazon.ca/EVGA-Audio-712-P1-AN01-KR-Lifelike-Designed/dp/B07MSQJ3GY/ref=sr_1_1?camp=2025&creative=165953&creativeASIN=B07MSQJ3GY&imprToken=Is.IHiVLr8u83rvEnnD4ag&keywords=EVGA+Nu+Audio+Card%2C+712-P1-AN01-KR%2C+Lifelike+Audio%2C+PCIe%2C+RGB+LED%2C+Designed+with+Audio+Note&linkCode=g13&qid=1571514204&sr=8-1)
     + $246 on Amazon
  2. What would be the least expensive Sound Card that meets your requirements (or do you just need basic sound provided by the motherboard)? List the Model Number, Price, and Vendor Source.
     + Just need motherboard sound

1. Motherboard
   1. Do you require any special motherboard features (based on your answers to the above questions)?
      * No, nothing special is needed
   2. Provide an example of a high-end Motherboard using the list of suppliers provided in the appendix. List the Model Number, Price, and Vendor Source. Also list its main features
      * ASUS Prime Z390-A Motherboard
      * $239 Amazon
   3. Provide an example of a basic Motherboard using the list of suppliers provided in the appendix. List the Model Number, Price, and Vendor Source. Also list its main features
      * ASRock B450M PRO4 MicroATX
      * $105 Amazon
   4. What would be the least expensive Motherboard that meets your requirements? List the Model Number, Price, and Vendor Source.
      * ASRock B450M PRO4 MicroATX
      * $105 Amazon
2. HDD (Hard Disk Drive or Solid State Drive)
   1. Do you require any special Hard Disk Drive features (based on your answers to the above questions)?
      * No special hard drive features are needed
      * Just high storage space
      * And an SSD for high-speed storage
   2. Provide an example of a high-end HDD using the list of suppliers provided in the appendix. List the Model Number, Price, and Vendor Source. Also list its main features
      * Samsung 970 EVO 1TB NVMe M.2 SSD
      * $230 Amazon
   3. Provide an example of a basic HDD using the list of suppliers provided in the appendix. List the Model Number, Price, and Vendor Source. Also list its main features
      * 1 TB Western Digital Blue Harddrive, 7200 RPM
      * $49 Amazon
   4. What would be the least expensive Hard Disk Drive that meets your requirements? List the Model Number, Price, and Vendor Source.
      * 1 TB Western Digital Blue Harddrive, 7200 RPM
      * $49 Amazon
3. Removable Media (DVD / USB / Flash)
   1. Do you require any special Removable Media features? Explain what extra features are required for your PC application topic.
      * No, it is not required
   2. If so, List the Model Number, Price, and Vendor Source for any of these extra features.
4. Network Interface (Ethernet /Fiber / Wi-Fi / Bluetooth)
   1. Do you require any special Network Interface features? Explain what extra features are required for your PC application topic.
      * On-board motherboard ethernet port is all that is needed
      * **Though, a wifi card could be a nice-to-have**
   2. If so, List the Model Number, Price, and Vendor Source for any of these extra features.
      * TP-Link Archer T4E AC1200 PCie Wifi Card
      * $39.99 on Amazon
5. Monitor, Mouse, Keyboard
   1. Do you require any special Monitor, Mouse, Keyboard, etc. add-ons? Explain what extra features are required for your PC application topic.
      * Normal monitor 1808p 60 Hz can be used
      * Normal mouse, and keyboard too
      * **However, a 1440p/1808p 144Hz monitor is much better**
      * **Also, a gaming mouse and gaming keyboard is much better than regular**
   2. If so, List the Model Number, Price, and Vendor Source for any of these extra features.
      * Acer V277U 1440p monitor, $300 Newegg
      * Corsair K68 Keyboard ($105 Amazon)
      * Logitech G502 Proteus Spectrum ($70 Amazon)
6. Portability / Mobility
   1. Will you be using your PC in one place, do you need some portability, or do you need a high degree of mobility? Explain the need for portability your PC application topic.
      * PC will be used in one place
      * Does not need to be mobile or portable
   2. Do you require a Desktop / Laptop / Notebook or other PC format?
      * Desktop
   3. How will this affect the cost of your dream machine.
      * If it is a desktop, a mouse, keyboard and monitor will need to be bought
7. Rank each personal computer component in order of priority (1-lowest, 10-highest) based on your research above. Each component must have its own priority number… no duplications.
   * CPU Processor Chip 9
   * RAM Memory 8
   * Graphics Card 10
   * Sound Card 3
   * Motherboard 7
   * HDD (Hard Disk Drive or Solid State Drive) 6
   * Removable Media (DVD / USB / Flash) 2
   * Network Interface (Ethernet /Fiber / Wi-Fi / Bluetooth) 4
   * Monitor, Mouse, Keyboard 5
   * Portability / Mobility 1

**Brochure**

Work individually to create a 4 page brochure according to the following guideline.

**Page 1 – Your Application Topic**

Describe your topic and the top PC components for your topic.

Include the following on this page:

* Describe your application topic and how a PC is used
* In general terms, describe what the best PC for this application would look like (e.g. speed vs portability)
* Describe in more detail the top three most important PC components and explain why they are important for your application

**Page 2 – Would-Be-Nice Features**

Describe your decisions about what PC components are less important but would be nice to upgrade if you had the money.

Include the following on this page:

* Describe the would-be-nice components (just below your top 3 priorities) and what your options for upgrading them would be.
* Describe the components / features at the bottom of your priority list and why you would not spend extra money on them.
* Provide some details about different vendors / suppliers and the options they offer.

**Page 3 – Your Budget Machine**

Your budget is $800. Select a pre-packaged PC or customize / build a PC from parts to fit under this budget.

Include the following on this page:

* Your PC specs, model, cost, vendor, etc.
* Priority components that you were able to include for this price.
* Priority components that you had to leave out because of budget limitations.

**Page 4 – Your Dream Machine**

Your budget is $2000. Select a pre-packaged PC or customize / build a PC from parts to fit under this budget.

Include the following on this page:

* Your PC specs, model, cost, vendor, etc.
* Priority components that you were able to include for this price.
* Priority components that you were able to spend extra on.
* Also comment on any priority components that you had to leave out or down-grade.

**Appendix A: PC Vendors, Parts, & Customization**

Suggested on-line computer sources:

* [www.newegg.ca](http://www.newegg.ca)
* [www.dell.com/en-ca](http://www.dell.com/en-ca)
* [www.tigerdirect.ca/](http://www.tigerdirect.ca/)
* [www.canadacomputers.com](http://www.canadacomputers.com)

**Appendix B: Application Topics**

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| --- | --- |
| **Task** | **Student Name** |
| ***Game Computer*** |  |
| **Photo Editing & Organization** |  |
| ***Business Office Computer*** |  |
| ***Student Home Computer*** |  |
| ***Factory Floor Computer*** |  |
| ***Media Production and Streaming Computer*** |  |
| ***Web Surfing Computer*** |  |
| ***Game Computer*** |  |
| **Photo Editing & Organization** |  |
| ***Business Office Computer*** |  |
| ***Student Home Computer*** |  |
| ***Factory Floor Computer*** |  |
| ***Media Production and Streaming Computer*** |  |
| ***Web Surfing Computer*** |  |
| ***Game Computer*** |  |
| **Photo Editing & Organization** |  |
| ***Business Office Computer*** |  |
| ***Student Home Computer*** |  |
| ***Factory Floor Computer*** |  |
| ***Media Production and Streaming Computer*** |  |
| ***Web Surfing Computer*** |  |