**Overview**

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

My PC application topic Is: \_\_\_\_\_\_\_\_student home 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: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**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 isused to perform a task related to your application.

* Ina sense speed is very high in terms of importance. It is very important because it helps tasks to be done faster and without truble for a student.
  1. 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 is very high in importance because students use there home computers , to store there work that they are doing, for projrects , assignments and etc.
  1. 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.
  2. 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 very important for a student computer because ,usually homework and assignments require internet use, and without good internet tasks will done slowly and less efficiently.

1. CPU Processor Chip
   1. What speed of CPU Chip do you require? (High / Medium / Basic)

* Medium around 3,5ghz or 4.ghz
  1. 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
* Model number : i9-9900k price: $689 vender source: best buy ,main features :The i9-9900K operates at a 3.6 GHz with a TDP of 95 W and a Turbo Boost frequency of up to 5 GHz. This chip supports up to 128 GiB of dual-channel DDR4-2666 memory and incorporates Intel's UHD Graphics 630 IGP operating at 350 MHz with a burst frequency of 1.2 GHz.
  1. 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
* Model number : i7-8700k price: $534 vender source : best buy main features: The i7-8700K operates at a 3.7 GHz with a TDP of 95 W and a Turbo Boost frequency of up to 4.7 GHz. This chip supports up to 64 GiB of dual-channel DDR4-2666 memory and incorporates Intel's UHD Graphics 630 IGP operating at 350 MHz with a burst frequency of 1.2 GHz
  1. 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
* Model number : I5-9400F price: $197 main features : The Core i5-9400F CPU features six cores without Hyper-Threading operating at 2.9 – 4.1 GHz, packs 9 MB of L3 cache, supports DDR4-2666 memory, and is rated for a 65 W TDP. The Core i5-9400F is one of Intel's entry-level six-core processor for desktops and will therefore be among the cheapest CPUs with six cores.
  1. What would be the least expensive CPU Chip that meets your requirements? List the Model Number, Price, and Vendor Source.
* Model number : I5-9400F price: $197 main features : The Core i5-9400F CPU features six cores without Hyper-Threading operating at 2.9 – 4.1 GHz, packs 9 MB of L3 cache, supports DDR4-2666 memory, and is rated for a 65 W TDP. The Core i5-9400F is one of Intel's entry-level six-core processor for desktops and will therefore be among the cheapest CPUs with six cores.

1. RAM Memory
   1. What size of RAM Memory do you require? (Large / Medium / Basic)

* medium
  1. 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

# Model number : Corsair 32GB Vengeance LPX DDR4 SDRAM price : $291 main features: vengeance Lpx Series Vengeance Lpx Memory Is Designed For High-performance Overclocking. The Heatspreader Is Made Of Pure Aluminum For Faster Heat Dissipation, And The Eight-layer Pcb Helps Manage Heat And Provides Superior Overclocking Headroom.

# Vendor source : best buy

* 1. 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
* **Model number: CORSAIR 16 GB DDR4 - 3000 MHz Desktop RAM Price: $113 main features:** The 16 GB of RAM ensures fast multitasking and efficient program execution without any lag
* 2 memory module enables capable system operation
* Up to 3000 MHz operating speed for excellent multitasking capability
* Each IC is individually screened for performance potential
* Memory is configuration with 288-Pin

# Vendor source : best buy

* 1. 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
* Model number: Patriot Viper Elite Performance 8GB DDR4 2400MHz Desktop Memory price : $53 main features: Designed for desktop PCs with latest Intel/AMD platforms to boost your performance
* 8GB DDR4 2400 MHz upgrades your computer with the right amount of memory
* Custom-designed high-performance heat shield protects the Viper Elite during long sessions
* Run your computer more quickly with 288-Pin Non ECC UDIMM
* CL-16 CAS Latency allows quick access to data

Vendor source: best buy

* 1. What would be the least expensive RAM Memory that meets your requirements? List the Model Number, Price, and Vendor Source.
* Model number: Patriot Viper Elite Performance 8GB DDR4 2400MHz Desktop Memory price : $53 main features: Designed for desktop PCs with latest Intel/AMD platforms to boost your performance
* 8GB DDR4 2400 MHz upgrades your computer with the right amount of memory
* Custom-designed high-performance heat shield protects the Viper Elite during long sessions
* Run your computer more quickly with 288-Pin Non ECC UDIMM
* CL-16 CAS Latency allows quick access to data

Vendor source : best buy

1. Graphics Card
   1. What graphics speed and resolution do you require? (High / Medium /Basic - On Motherboard)

* medium
  1. 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
* **Model number: ZOTAC GAMING NVIDIA GeForce RTX 2060 6GB DDR6 Video Card price: $459 main features:** 6GB of GDDR6 memory powers fast visuals without hiccups or lag
* 1680MHz core clock speed keeps up with even the most intense gaming action
* Microsoft DirectX 12 API, Vulkan API, and OpenGL 4.5 enable you to play intense games and use multimedia applications on your system
* HDMI and DisplayPort jacks to connect multiple monitors
* Cutting-edge NVIDIA Turing architecture immerses you in mind-blowing realism and performance while engaged in the latest game
* NVIDIA Ansel lets you capture in-game shots from any position so you can preserve and share your favourite gaming moments
* NVIDIA G-SYNC compatible to deliver a smoother, faster gaming experience
* Supports a stunning 4096 x 2160 resolution for incredibly crisp, clear visuals
* IceStorm 2.0 provides a cooler, quieter, and stronger game performance by enhancing the overall cooling hardware for maximum cooling efficiency
* Real-time Ray Tracing deliver lifelike lighting, reflections, and shadows for an exceptional level of realism compared to traditional rendering techniques
* HD DVD/BluRay capabilities allow you to watch your favourite high-res movies and videos
* Requires two PCI Express 3.0 slots for installation

Vendor source : best buy

* 1. 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
* Model number: ZOTAC NVIDIA GeForce GTX 1650 Low Profile 4GB GDDR5 Video Card price: $241 main features: 4GB of GDDR5 memory and a core clock speed of 1665 MHz ensure fast processing speeds for buttery-smooth gaming performance
* Supports Microsoft DirectX 12 API, Vulkan API, and OpenGL 4.5
* Low-profile ready with a PCI Express 3.0 slot
* NVIDIA Ansel lets you capture in-game shots from any position and then adjust them with post-process filters to share your best moments
* NVIDIA G-SYNC compatibility lets you synchronize display refresh rates to the GPU in your GeForce GTX-powered PC, eliminating screen tearing and minimizing display stutter and input lag
* 4K ready for superior resolution during gameplay
* 40mm twin fan keeps your card cool for optimum performance

Vendor source: best buy

* 1. 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.
* Model number: ZOTAC NVIDIA GeForce GTX 1650 Low Profile 4GB GDDR5 Video Card price: $241 main features: 4GB of GDDR5 memory and a core clock speed of 1665 MHz ensure fast processing speeds for buttery-smooth gaming performance
* Supports Microsoft DirectX 12 API, Vulkan API, and OpenGL 4.5
* Low-profile ready with a PCI Express 3.0 slot
* NVIDIA Ansel lets you capture in-game shots from any position and then adjust them with post-process filters to share your best moments
* NVIDIA G-SYNC compatibility lets you synchronize display refresh rates to the GPU in your GeForce GTX-powered PC, eliminating screen tearing and minimizing display stutter and input lag
* 4K ready for superior resolution during gameplay
* 40mm twin fan keeps your card cool for optimum performance

1. Sound Card
   1. Do you require special sound support? (High / Medium /Basic - On Motherboard)

* Medium
  1. 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

# Model number: Creative Labs Sound BlasterX AE-5 Sound Card and DAC with RGB Aurora Lighting price: $189 main features It delivers astonishingly pristine audio, and also shows off the Aurora Reactive Lighting System with 16.8 million customizable colors.

# Vendor source : best buy

* 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

# Model number: Sound Blaster Audigy RX price : $84 main features: The Sound Blaster Audigy Rx is an advanced sound card that represents the perfect upgrade from basic motherboard audio to immersive cinematic surround sound. With its advanced chipset designed to process our legendary EAX reverb engine, you can look forward to experiencing superb 7.1 multi-channel audio. It also features an SNR of 106dB and the Sound Blaster Audigy Rx Control Panel, a dedicated PC software that allows you full control of every aspect of your sound card.If you're big on entertainment, you would also love it for its EAX Studio software that allows for additional hardware-accelerated environmental effects to your music, movies, games as well as for your voice input and communications.

Vendor store : best buy

* 1. 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.

# Model number: Sound Blaster Audigy RX price : $84 main features: The Sound Blaster Audigy Rx is an advanced sound card that represents the perfect upgrade from basic motherboard audio to immersive cinematic surround sound. With its advanced chipset designed to process our legendary EAX reverb engine, you can look forward to experiencing superb 7.1 multi-channel audio. It also features an SNR of 106dB and the Sound Blaster Audigy Rx Control Panel, a dedicated PC software that allows you full control of every aspect of your sound card.If you're big on entertainment, you would also love it for its EAX Studio software that allows for additional hardware-accelerated environmental effects to your music, movies, games as well as for your voice input and communications.

1. Motherboard
   1. Do you require any special motherboard features (based on your answers to the above questions)?

* No
  1. 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

# Model number: Aorus Ultra Durable Z390 AORUS PRO WIFI Desktop Motherboard price: $267 main feature: Aorus Ultra Durable Z390 AORUS PRO WIFI Desktop Motherboard - Intel Chipset - Socket H4 LGA-1151 - 64 GB DDR4 SDRAM Maximum RAM - UDIMM, DIMM - 4 x Memory Slots - Gigabit Ethernet - Wireless LAN - 6 x USB 3.1 Port - HDMI - 6 x SATA Interfaces

Vendor store; best buy

* 1. 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

# Model number: Asus B250 MINING EXPERT Desktop Motherboard - Intel Chipset price: $82 main features: ASUS B250 MINING EXPERT LGA1151 DDR4 HDMI B250 ATX Motherboard for Cryptocurrency Mining with 19 PCIe Slots and USB 3.1 Gen1 Maximize your mining connectivity and speed with 19x PCIe Slots, up to 32GB DDR4 2400 RAM, USB 3.1 Gen1 and Intel® Gigabit LAN Triple-ATX12V Power Delivery separates 19x PCIe slots into 3 groups, each with a dedicated 24-pin for reliable power performance 5X Protection III Hardware-level safeguards with SafeSlot Core, LANGuard and Overvoltage Protection provide component longevity and reliability PCIe Slot State Detection provides a real time indication of the status of each GPU in your rig Voltage-stabilization Capacitors provides steady voltage from your power supply units to your GPUs DESIGNED FOR CRYPTO MINING World's First 19-Slot Mining Motherboard Max out your megahash rates! ASUS B250 Mining Expert is the world's first mining motherboard to feature 19 PCI Express® (PCIe®) slots.

# Vendor store : best buy

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

# Model number: Asus B250 MINING EXPERT Desktop Motherboard - Intel Chipset price: $82 main features: ASUS B250 MINING EXPERT LGA1151 DDR4 HDMI B250 ATX Motherboard for Cryptocurrency Mining with 19 PCIe Slots and USB 3.1 Gen1 Maximize your mining connectivity and speed with 19x PCIe Slots, up to 32GB DDR4 2400 RAM, USB 3.1 Gen1 and Intel® Gigabit LAN Triple-ATX12V Power Delivery separates 19x PCIe slots into 3 groups, each with a dedicated 24-pin for reliable power performance 5X Protection III Hardware-level safeguards with SafeSlot Core, LANGuard and Overvoltage Protection provide component longevity and reliability PCIe Slot State Detection provides a real time indication of the status of each GPU in your rig Voltage-stabilization Capacitors provides steady voltage from your power supply units to your GPUs DESIGNED FOR CRYPTO MINING World's First 19-Slot Mining Motherboard Max out your megahash rates! ASUS B250 Mining Expert is the world's first mining motherboard to feature 19 PCI Express® (PCIe®) slots.

# Vendore store : best buy

1. 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
  1. 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

# Model number : Western Digital Hard Disk Drive 10TB SATA 3.5 256 AV Brand WD Purple price: $606 main feature: large amount of space and storage

# Vendor source: best buy

* 1. 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

# Model number : WD BLACK 1TB PERFORMANCE DESKTOP HARD DISK DRIVE 7200 RPM SATA 6 GB/S 64MB CACHE 3.5 INCH WD1003FZEX price : $120 main features : large spaces and storage

Vendor store : best buy

* 1. What would be the least expensive Hard Disk Drive that meets your requirements? List the Model Number, Price, and Vendor Source.

# Model number : WD BLACK 1TB PERFORMANCE DESKTOP HARD DISK DRIVE 7200 RPM SATA 6 GB/S 64MB CACHE 3.5 INCH WD1003FZEX price : $120 main features : large spaces and storage

Vendor store : best buy

1. 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.

Yes, I would need mouse, monitor and a usb.

1. 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

* I would need all of those .
  1. If so, List the Model Number, Price, and Vendor Source for any of these extra features.

Model number: **axGear Optical Audio Cable Digital Toslink Fiber Optic SPDIF Wire TV HiFi Music 10Ft 3M price: $9 main features:** Digital Optical Audio TosLink Cable 10 FT / 3 M Toslink Digital Audio Cable provides you the cleanest possible signal, even at extreme volume levels.

These cables use 1mm low-loss core, low-jitter synthetic fibber and heavy metal connectors to dampen vibration, giving you the ultimate listening experience.

Optical cables transfer the signal using light; thus completely eliminating any chance for RFI, EMI or ground loop interference.

The stylish PVC heavy 5.0mm jacket helps prevent cable damage and adds flexibility and durability for years of listening pleasure.

Moulded Strain Reliefs reduce stress where cable and connectors meet.

Gold-plated Ferrule prevents corrosion and provides for maximum protection of the fibber tip.

Precision Polished Fibber Tips for maximum signal transfer (includes tip protectors).

Connect to your DVD, CD, Mini Disc, DAT other digital audio equipment for clear, full and richly detailed sound.

Connectors: Toslink Male to Toslink Male

Designed for CD, DVD Converters, Dolby Digital DTS Surround sound receivers, DVD, MiniDisk players and recorders, Pro Audio cards, etc.

1. 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

* no
  1. If so, List the Model Number, Price, and Vendor Source for any of these extra features.

1. 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

* no.
  1. Do you require a Desktop / Laptop / Notebook or other PC format?
* no
  1. How will this affect the cost of your dream machine.
* no

1. 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 1 2 3 4 5 6 7 8 9 10
   * RAM Memory 1 2 3 4 5 6 7 8 9 10
   * Graphics Card 1 2 3 4 5 6 7 8 9 10
   * Sound Card 1 2 3 4 5 6 7 8 9 10
   * Motherboard 1 2 3 4 5 6 7 8 9 10
   * HDD (Hard Disk Drive or Solid State Drive) 1 2 3 4 5 6 7 8 9 10
   * Removable Media (DVD / USB / Flash) 1 2 3 4 5 6 7 8 9 10
   * Network Interface (Ethernet /Fiber / Wi-Fi / Bluetooth) 1 2 3 4 5 6 7 8 9 10
   * Monitor, Mouse, Keyboard 1 2 3 4 5 6 7 8 9 10
   * Portability / Mobility 1 2 3 4 5 6 7 8 9 10

**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**

|  |  |
| --- | --- |
| **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*** |  |

**Tradeshow Passport:**

Your Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Your Topic: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Complete the following table by visiting other students during the tradeshow:

|  |  |  |  |
| --- | --- | --- | --- |
| Machine  Topic | Presenter  Name | Top Priority Components  (List top 3) | Low Priority Components  (List bottom 3) |
| ***Game Computer*** |  |  |  |
| **Photo Editing & Organization** |  |  |  |
| ***Business Office Computer*** |  |  |  |
| ***Student Home Computer*** |  |  |  |
| ***Factory Floor Computer*** |  |  |  |
| ***Media Production and Streaming Computer*** |  |  |  |
| ***Web Surfing Computer*** |  |  |  |