**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**

* Think about your PC application topic. Do some research to find general answers to the following questions.
  + 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.
  + 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.
  + 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.
  + 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.
* CPU Processor Chip
  + What speed of CPU Chip do you require? (High / **Medium** / Basic)
  + 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

# **AMD Ryzen 9 3900X 12-Core/24-Thread 7nm Processor Socket AM4 3.8GHz/ 4.6 GHz Boost, RGB Wraith Prism Cooler, 105W (100-**

# **$709.00**

# **Canada Computers & Electronics**

* + 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

# **Intel Core i5-9600K Coffee Lake 6-Core/6-Thread Processor Socket LGA 1151, 3.7 GHz Base/ 4.6 GHz Max Turbo Frequency 95W Gen9 Retail**

# **$319.00**

# **Canada Computers & Electronics**

* + 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
* AMD Ryzen 5 2400G 4-Core/8-Thread Processor with Radeon VEGA 11 Graphics Socket AM4, 3.6 GHz Base/ 3.9 GHz Boost, 14nm, 65W
* $159.00
* Canada Computers & Electronics
  + What would be the least expensive CPU Chip that meets your requirements? List the Model Number, Price, and Vendor Source.

# **AMD Ryzen 7 2700 8-Core/16-Thread Processor Socket AM4 3.20GHz Base/ 4.1 GHz Boost, Wraith Spire Cooler (LED) 65W (YD2700BBAFBOX)**

# **$219.00**

* Canada Computers & Electronics
* RAM Memory
  + What size of RAM Memory do you require? (Large / Medium / **Basic**)
  + 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 LPX 32GB (2x16GB) DDR4 3200MHz CL16 Memory Kit - Black (CMK32GX4M2B3200C16)**

# **$194.99**

# **Canada Computers & Electronics**

* + 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 16GB (2x8GB) DDR4 3200MHz CL16 Memory Kit - Black (CMK16GX4M2B3200C16)**

# **$109.99**

# **Canada Computers & Electronics**

* + 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

# **G.SKILL Ripjaws Series 8GB DDR4 2133MHz CL15 1.2V SODIMMs (F4-2133C15S-8GRS)**

# **$40.99**

# Canada Computers & Electronics

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

# **G.SKILL Ripjaws V Series 16GB (2x8GB) DDR4 2400MHz CL15 Dual Channel Memory Kit 1.2V (F4-2400C15D-16GVR)**

# **$79.99**

# **Canada Computers & Electronics**

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

# EVGA GeForce RTX 2080 BLACK EDITION GAMING, 08G-P4-2081-KR, 8GB GDDR6, Dual HDB Fans & RGB LED

* + $1,036.99
  + NewEgg
  + 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

# ZOTAC GAMING GeForce RTX 2060 AMP 6GB GDDR6 192-bit Gaming Graphics Card, Super Compact, IceStorm 2.0, ZT-T20600D-10M

* + $499.99
  + NewEgg
  + 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.

# GIGABYTE GeForce GTX 1650 WINDFORCE OC 4G Graphics Card, 2 x WINDFORCE Fans, 4GB 128-Bit GDDR5, GV-N1650WF2OC-4GD Video Card

# $229.99

# NewEgg

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

# **Sound Blaster AE-9 PCIe with Audio Control Module - Metallic Grey**

# **$419.00**

# **Canada Computers & Electronics**

* + 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, Lifelike Audio, PCIe, RGB LED, Designed with Audio Note (712-P1-AN01-KR)**

# **$194.99**

# **Canada Computers & Electronics**

* + 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.

# **Creative Sound Blaster Audigy RX 7.1 - PCI-E Optimal Recording Solution(Retail) (70SB155000001)**

# **94.99**

# **Canada Computers & Electronics**

# **Although, since it is a student home computer, you can just buy the sound card with the motherboard.**

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

In my opinion, it is better off to just get a good motherboard that includes a sound card and a graphics card. If you get a really good motherboard, you will kind of save money by not having to buy a sound card and graphics card.

* + 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
  + MSI PRESTIGE X570 CREATION Motherboard AMD AM4 SATA 6Gb/s M.2 USB 3.2 Wi-Fi 6 Extended-ATX

# **$639.99**

# **Canada Computers & Electronics**

* + 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 HDV R4.0 AMD AM4 Socket Dual Channel, PCIe 3.0, M.2 USB 3.1, DVI-D, HDMI, D-Sub, mATX Motherboard**

# **94.99**

# **Canada Computer & Electronics**

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

# **ASUS ROG STRIX B450-F GAMING Socket AM4 Dual Channel DDR4 PCIe 3.0,2x M.2 USB 3.1, HDMI, DP, RGB ATX Motherboard**

# **$164.99**

# **Canada Computers & Electronics**

* HDD (Hard Disk Drive or Solid State Drive)
  + Do you require any special Hard Disk Drive features (based on your answers to the above questions)?
* No, any decent HDD will do.
  + 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

# WD Purple WD101PURZ 10TB 7200 RPM 256MB Cache SATA 6.0Gb/s 3.5" Internal Hard Drive

# $429.99

# NewEgg

* + 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

# Seagate BarraCuda ST500DM009 500GB 7200 RPM 32MB Cache SATA 6.0Gb/s 3.5" Hard Drive Bare Drive

* + $57.86
  + NewEgg
  + What would be the least expensive Hard Disk Drive that meets your requirements? List the Model Number, Price, and Vendor Source.

# Seagate BarraCuda ST4000DM004 4TB 5400 RPM 256MB Cache SATA 6.0Gb/s 3.5" Hard Drives Bare Drive - OEM

* $119.99
* NewEgg
* Removable Media (DVD / USB / Flash)
  + Do you require any special Removable Media features? Explain what extra features are required for your PC application topic.
  + No, this isn’t a gaming computer but, instead, it is a student home computer which is usually used for studying. So, you would need any special removable media feature.
  + If so, List the Model Number, Price, and Vendor Source for any of these extra features.
* Network Interface (Ethernet /Fiber / Wi-Fi / Bluetooth)
  + Do you require any special Network Interface features? Explain what extra features are required for your PC application topic. NO
  + If so, List the Model Number, Price, and Vendor Source for any of these extra features.
* Monitor, Mouse, Keyboard
  + Do you require any special Monitor, Mouse, Keyboard, etc. add-ons? Explain what extra features are required for your PC application topic. NO
  + If so, List the Model Number, Price, and Vendor Source for any of these extra features.
* Portability / Mobility
  + 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.
  + Yes, I believe you need a PC with an high degree of mobility as with a student home computer, you usually take it to a lot of places. This includes:
  + Schools
  + Libraries
  + Do you require a Desktop / **Laptop** / Notebook or other PC format?
  + How will this affect the cost of your dream machine.
* It will be cheaper since usually, a laptop is either really expensive or expensive. In this scenario, a laptop will be decently expensive since you only need a decent model.
* 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

A student home computer is a computer that is usually used by students. Its main uses include: studying and finishing homework. Usually, it is often portable so you can take to a school and other places. For a student home computer, the most important components are the motherboard, the mobility and the CPU. Personally, I believe it is better off to just get a good motherboard that includes a sound card and a graphics card. If you get a really good motherboard, you will kind of save money by not having to buy a sound card and graphics card. In my opinion, I believe you need a PC with an high degree of mobility as with a student home computer, you usually take it to a lot of places. This includes: Schools and Libraries. Finally, it is important to have a good CPU, as in a student home computer, you tend to work a lot on it. Therefore, your computer must be fast and strong enough to process all the information at once.

**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.
* Motherboard
* Portability / Mobility
* CPU Processor Chip
* Describe the components / features at the bottom of your priority list and why you would not spend extra money on them.
* I wouldn't spend any extra money on a sound card and graphics card as they are not needed. In a student home computer, you usually tend to use it to finish work and study. So, a sound and graphics card will be useless as you will rarely use it. Instead, you buy a decent motherboard that includes a sound card and a graphics card with the money you save.
* Provide some details about different vendors / suppliers and the options they offer.
* New Egg

# **Canada Computers & Electronics**

**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.
* Lenovo Laptop ThinkPad V330-14ARR 81B1001FUS AMD Ryzen 3 1st Gen 2200U (2.50 GHz) 4 GB Memory 500 GB HDD AMD Radeon Vega 3 14.0" Windows 10 Pro 64-bit
* $506.99
* NewEgg
* The Lenovo laptop is the laptop I would buy
* https://www.newegg.ca/iron-gray-lenovo-thinkpad-v330-14arr-81b1001fus-mainstream/p/2WC-000J-00762?Item=2WC-000J-00762
* With the leftover money, I will buy a new motherboard

# **ASUS ROG STRIX B450-F GAMING Socket AM4 Dual Channel DDR4 PCIe 3.0,2x M.2 USB 3.1, HDMI, DP, RGB ATX Motherboard**

# **$164.99**

# **Canada Computers & Electronics**

* Now I have 128.02 left
* I will buy some more ram memory

# **G.SKILL Ripjaws V Series 16GB (2x8GB) DDR4 2400MHz CL15 Dual Channel Memory Kit 1.2V (F4-2400C15D-16GVR)**

# **$79.99**

# **Canada Computers & Electronics**

* For my budget machine, I will buy the Lenovo Laptop ThinkPad. The Lenovo Laptop ThinkPad cost $506.99 and you can buy it online from NewEgg. With the leftover money, I would upgrade the motherboard and ram memory. The motherboard I would suggest is the ASUS ROG STRIX. The ROG STRIX cost $164.99 at Canada Computers & Electronics. It is actually a really good price for a motherboard this good, considering its capabilities. Finally, I would upgrade the ram memory by buying the Ripjaws V Series 16GB. The price for the RIpjaws is $79.99 at Canada Computers & Electronics. Sadly, I don't have enough for the CPU but it is fine since this laptop already has a good CPU considering this a student home computer.

**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.
* Huawei Laptop MateBook X Pro 53010BVV Intel Core i5 8th Gen 8250U (1.60 GHz) 8 GB Memory 256 GB PCIe NVMe SSD Intel UHD Graphics 620 13.9" Touchscreen Windows 10 Home 64-Bit
* $1,703..99
* NewEgg

# **ASUS ROG STRIX B450-F GAMING Socket AM4 Dual Channel DDR4 PCIe 3.0,2x M.2 USB 3.1, HDMI, DP, RGB ATX Motherboard**

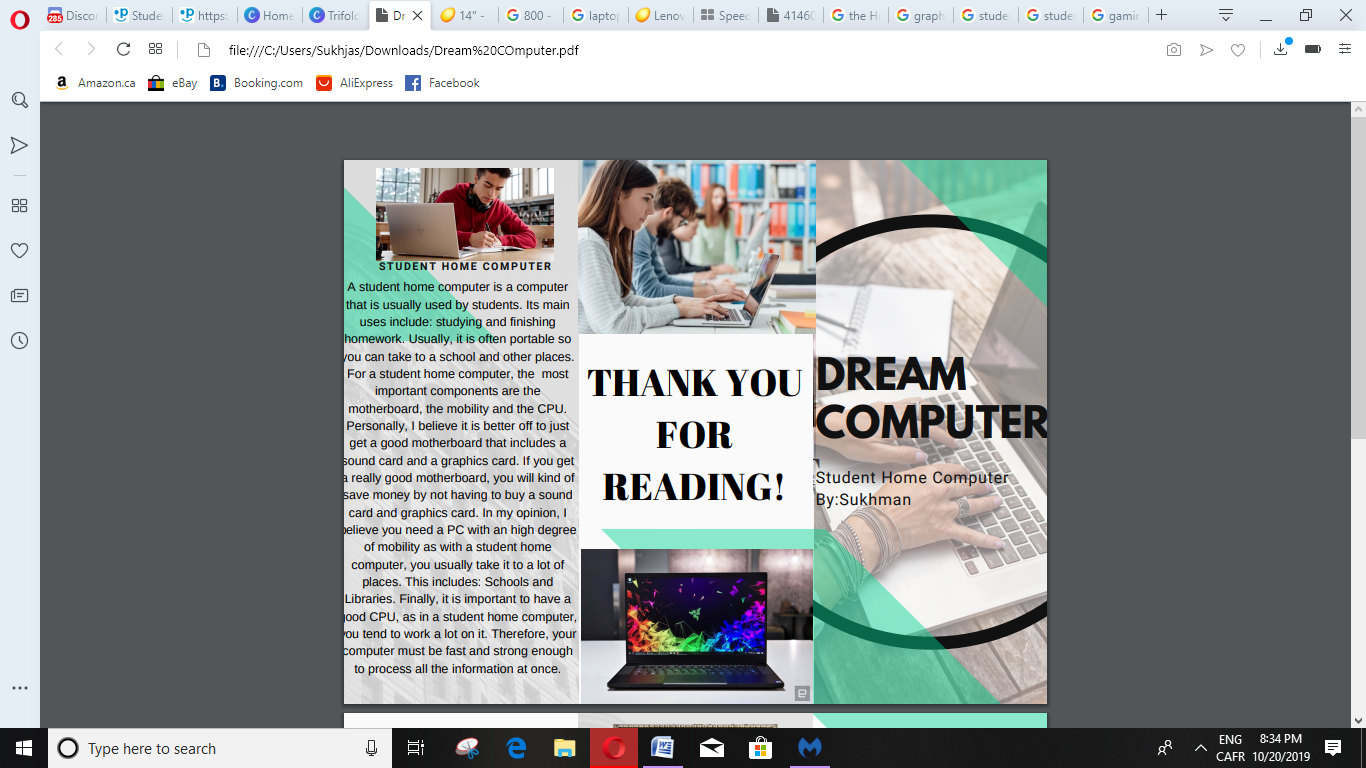
# **$164.99**

# **Canada Computers & Electronics**

# **G.SKILL Ripjaws V Series 16GB (2x8GB) DDR4 2400MHz CL15 Dual Channel Memory Kit 1.2V (F4-2400C15D-16GVR)**

# **$79.99**

# **For my dream student home computer, I would buy the Huawei Laptop MateBook X Pro. The Huawei Latop cost a shocking $1,703.99 but is one of the best student home computers ever. It is super expensive so in my opinion, I would recommend buying a budget computer instead of this. Like the budget computer, I would recommend buying the same motherboard and ram memory. As I said before, the ASUS ROG STRIX motherboard cost $164.99 and the Ripjaws V Series is $79.99. Both of these items can be bought online at Canada Computers & Electronics. Once again, there is not enough money to buy a CPU with, but this laptop already has one of the best CPU. Although, in most cases, it is better off to just buy a cheap student home computer instead of a really expensive one.**

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**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*** |  |