**Overview**

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

My PC application topic Is: business office 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.

a.       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.

A processor provides the instructions that multiple applications and processes need to perform their jobs. The faster it does that, the faster a computer operates. Faster computers often translate into increased productivity and efficiency

b.       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 is an important asset in any business, and for some companies it's one of the most important assets. The way you store your data plays a major role in how easy it is to access, use, and keep secure. Paper files meet the minimum requirements for data storage.

c.        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.

Graphic design, also known as communication design, is the art and practice of planning and projecting ideas and experiences with visual and textual content. The form it takes can be physical or virtual and can include images, words, or graphics. The experience can take place in an instant or over a long period of time. The work can happen at any scale, from the design of a single postage stamp or a business card to a huge billboard or even a vehicle wrap or graphics. It can be intended for a small number of people, such as a one-off or limited-edition book or exhibition stands.

d.       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.

One of the most important benefits of having fiber internet is increased internet speed. If your employees are spending several hours each day online downloading documents, working with customers or doing research, even a few seconds delay in loading pages can decrease productivity.

2.       CPU Processor Chip

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

A clock speed of 3.5 GHz to 4.0 GHz is generally considered a good clock speed for gaming but it's more important to have good single thread performance. This means that your CPU does a good job understanding and completing single tasks.

b.       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

Lenovo ThinkPad T450s price$439

* Intel Core i5-5300U Dual-Core 2.3GHz Processor; enough power to handle multitasking with ease
* 8GB DDR3 Memory; enhances the system’s multitasking operations for more productivity
* 512GB SSD storage capacity; store all your files, movies and games as much as you'd like
* Windows 10 Professional 64-bit OS; ensures all of the operations and tasks happen with utmost ease
* Intel HD Graphics 5500; assured to enjoy a smooth run

c.        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

Latitude 3500 Business Laptop Price $660.00

8th Generation Intel® Core™ i5-8265U Processor (4 Core, 6MB Cache,1.6GHz,15W)

d.       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

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

Asus C202SA-YS02 Chromebook Intel Celeron N3060,1.6GHz, 4GB LPDDR3 RAM, 16GB Flash Memory, 11.6", 1366X 768, Chrome OS, Intel HD 400 Graphics - C202SA-YS02

Price$300

3.       RAM Memory

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

The size of RAM memory do you need to require is large

b.       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

Price $500 asus zenbook pro 15 Laptop with innovative ScreenPad, 15.6” UHD 4K Touch, Intel Core i9-8950HK, NVIDIA GeForce GTX 1050 Ti, 16GB DDR4 RAM, 512GB PCIe SSD, Backlit KB, Windows 10 Pro, UX580GE-XB74T.

c.        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 8GB (1 x 8GB) DDR4 DRAM 2400MHz C16 (PC4-19200) Memory Kit - Black (CMK8GX4M1A2400C16) price $60.00 Each Vengeance LPX module is built with a pure aluminum heat spreader for faster heat dissipation and cooler operation; and the eight-layer PCB helps manage heat and provides superior overclocking headroom.

* Available in multiple colors to match your motherboard, your components, or just your style
* Vengeance LPX is optimized and compatibility tested for the latest Intel X99 and 100 Series motherboards and offers higher frequencies, greater bandwidth, and lower power consumption.
* The Vengeance LPX module height is carefully designed to fit smaller spaces.
* Tested Latency 16-16-16-39;Tested Speed: 2400MHz; SPD Latency:16-16-16-39; SPD Speed :2400MHz .

d.       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

AXIOM MEMORY SOLUTION 8 GB DDR3 - 1600 MHz Desktop RAM Price $85

* The 8 GB of RAM ensures fast multitasking and efficient program execution without any lag
* 1 memory module enables capable system operation
* Up to 1600 MHz operating speed for excellent multitasking capability
* Each IC is individually screened for performance potential
* Memory is configuration with 240-Pin

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

GeIL EVO POTENZA 8GB (2 x 4GB) 288-Pin DDR4 SDRAM DDR4 2400 (PC4 19200) Desktop Memory Model GPR48GB2400C16DC. Price $37.99 DDR4 2400 (PC4 19200)

Timing 16-16-16-36

CAS Latency 16

Voltage 1.2V

4.       Graphics Card

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

For a graphics Card you would need medium

b.       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

Sapphire Radeon RX 5700 XT 8GB GDDR6 PCI-E HDMI / TRIPLE DP (UEFI) Price $399

8GB 256-Bit GDDR6

Core Clock 1605 MHz

Boost Clock 1905 MHz

1 x HDMI 2.0b 3 x DisplayPort 1.4

2560 Stream Processors

PCI Express 4.0

c.        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

Gigabyte Geforce GTX 1050 Ti 4GB GDDR5 128 Bit PCI-E Graphic Card (GV-N105TD5-4GD) $168.48

* New NVIDIA pascal architecture delivers improved performance and power efficiency
* Classic and modern games at 1080P @ 60 FPS
* Fast, smooth, power-efficient gaming experiences. Support up to 8K display at 60Hz
* Support for the latest DirectX 12 Features
* Delivers all the latest GeForce gaming Features. Card size-H=40 L=229 W=118 mm.Recommended PSU:300W
* Form Factor: ATX

d.       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.

 ZOTAC GeForce GT 710 2GB DDR3 PCI-E2.0 DL-DVI VGA HDMI Passive Cooled Single Slot Low Profile Graphics Card (ZT-71302-20L) Price $45.00 NVIDIA GeForce GT 710, 2GB DDR3 192 CUDA cores, 64 bit Memory bus, 954 MHz Engine Clock, 1600 MHz Memory Clock

* PCI Express 2.0
* Fanless cooling
* Triple display support
* DirectX 12 (feature 11\_0) API, OpenGL 4.5 Supports for Windows 10/8/7/Vista/XP
* Power Requirement : 300 watt power supply. 25 watt max power consumption
* Package content: ZT 71302 20L, Low profile I/O bracket, Driver Disk, User Manual
* Extended warranty included with every graphics card purchase. User registration required on ZOTAC website

5.       Sound Card

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

Sound card for business office computer require Medium on motherboard.

b.       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

Creative Sound Blaster Audigy FX 5.1 Sound Card SB1570 Price $44.99

* Easily converts the PC into a cinematic entertainment system by providing a compelling 5.1 surround sound
* Advanced Audio Processing with SBX Pro Studio, a suite of Sound Blaster audio processing technologies that let you bring out the best in your audio
* Includes the Sound Blaster Audigy Fx Control Panel, PC software that puts you in full control of the SBX Pro Studio suite of technologies
* 600 ohm headphone amp for high performance, studio grade monitoring
* 106 SNR and 24-bit 192kHz DAC (Playback) and 96kHz ADC (Recording)

c.        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

AuzenTech X-Studio 5.1 Channels 24-bit 96KHz PCI Interface Low Profile Sound Card: 5.1 Channels

24-bit 96KHz

PCI Interface

d.       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 PLAY! 3 24-bit 96KHz USB Interface Sound Card price$32.99 24-bit 96KHz

USB Interface

6.       Motherboard

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

No you really do not need any special motherboard features

b.       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 X299-Deluxe II LGA 2066 Intel X299 SATA 6Gb/s USB 3.1 ATX Intel Motherboard price $500 Intel X299

* Intel Core X-Series Processors Family (6-core above) on LGA 2066 Socket\*
* \* Refer to www.asus.com for Intel CPU support list.
* DDR4
* 4266(O.C.)/ 4133(O.C.)/ 4000(O.C.)/ 3600(O.C.)\*/ 3400(O.C.)\*/ 3333(O.C.)\*/ 3300(O.C.)\*/ 3200(O.C.)\*/ 3000(O.C.)\*/ 2800(O.C.)\*/ 2666
* \* Hyper DIMM support is subject to the physical characteristics of individual CPUs.

c.        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

MSI MPG Z390 GAMING EDGE AC LGA 1151 (300 Series) Intel Z390 HDMI SATA 6Gb/s USB 3.1 ATX Intel Motherboard price $179.99 Intel Z390

* Supports Intel Core 9th/8th Gen Intel Core / Pentium Gold / Celeron processors for LGA 1151 socket
* \* Not backward compatible with older generation of LGA 1151 CPUs
* DDR4 4400(OC)/ 4300(OC)/ 4266(OC)/ 4200(OC)/ 4133(OC)/ 4000(OC)/ 3866(OC)/ 3733(OC)/ 3600(OC)/ 3466(OC)/ 3400(OC)/ 3333(OC)/ 3300(OC)/ 3200(OC)/ 3000(OC)/ 2800(OC)/ 2666/ 2400/ 2133

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

 Kaemma In stockNew PC diagnostic 2-digit pci card motherboard tester analyzer post code for computer PC Newest(Color:green) price 0.19 It is easy installation, just plug into the PCI interface.

* Intercept and hex the code of your booting computer.
* Hexadecimal character display.
* 4 LED indicator.

by [Kaemma](https://www.amazon.co.uk/s/ref=bl_dp_s_web_0?ie=UTF8&search-type=ss&index=computers&field-keywords=Kaemma)

7.       HDD (Hard Disk Drive or Solid State Drive)

a.       Do you require any special Hard Disk Drive features (based on your answers to the above questions)?

No you do not require any special HDD features.

b.       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

Buffalo MiniStation™ Extreme NFC - 1TB External HDD (HD-PZN1.0U3B) Price $159.99 Military spec shock protection absorbs and transfers shock away from the hard disk

IPX3 standard water resistance & IP5X standard dust resistance to ensure data is safe against the elements

NFC technology keeps data secure with included smart card

Integrated USB cable for convenient and easy plug in

c.        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 SkyHawk Surveillance HDD ST2000VX008 - hard drive - 2 TB - SATA 6Gb/s price $94.99 Network video recorders (NVR)

* Embedded surveillance DVRs (SDVR), Hybrid surveillance DVRs, Surveillance DVRs.Optimized for DVRs and NVRs, SkyHawk™ surveillance drives are tuned for 24x7 workloads in capacities up to 10TB. Equipped with enhanced ImagePerfect™ firmware, SkyHawk helps to minimize dropped frames and downtime with a workload rating 3× that of desktop drives while supporting up to 64 HD cameras.

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

 StarTech.com Dual 2.5-inch SSD/HDD Mounting Bracket- 3.5-inch Drive Bay -Tool-Less - storage bay adapter Price $8.99 Install two 2.5” SSDs/HDDs in place of a single 3.5” drive Tool-less drive and bay installation and Supports drives from 5mm to 12.5 mm in height.

8.       Removable Media (DVD / USB / Flash)

a.       Do you require any special Removable Media features? Explain what extra features are required for your PC application topic.

* Optical Discs (Blu-Ray discs, DVDS, CD-ROMs)
* Memory Cards (Compact Flash card, Secure Digital card, Memory Stick)
* Zip Disks/ Floppy disks.
* USB flash drives.
* External hard drives (DE, EIDE, SCSSI, and SSD)
* Digital cameras.
* Smart phones.

b.       If so, List the Model Number, Price, and Vendor Source for any of these extra features.

 SanDisk Extreme PLUS 128GB 150MB/s SDXC Memory Card Price $59.99 128GB of storage offer tons of room for your photos and videos, Read speeds up to 150MB/s and write speeds up to 70MB/s transfer your data in a flash so you're never left waiting and Shockproof, temperature-proof, waterproof and x-ray proof, so it can go wherever you and your camera go.

9.       Network Interface (Ethernet /Fiber / Wi-Fi / Bluetooth)

a.       Do you require any special Network Interface features? Explain what extra features are required for your PC application topic.

No you do not require any

b.       If so, List the Model Number, Price, and Vendor Source for any of these extra features.

10.    Monitor, Mouse, Keyboard

a.       Do you require any special Monitor, Mouse, Keyboard, etc. add-ons? Explain what extra features are required for your PC application topic.

“A computer mouse is a handheld hardware input device that controls a cursor in a GUI (graphical user interface) and can move and select text, icons, files, and folders on your computer. For desktop computers, the mouse is placed on a flat surface such as a mouse pad or a desk in front of your computer”

b.       If so, List the Model Number, Price, and Vendor Source for any of these extra features.

 Logitech G502 Lightspeed Wireless Gaming Mouse with Hero Sensor and Tunable Weights price $160.00 Light speed wireless gaming mouse: exclusive Logitech g ultra-fast wireless technology used by pro gamers in competitions worldwide

* Next-Gen hero 16k sensor: Logitech most accurate sensor yet with up to 16, 000 dpi
* 11 customizable buttons and hyper-fast scroll wheel: assign custom macro
* Adjustable weight system: arrange up to six removable weights inside the mouse for personalized weight and balance tuning
* Lightsync RGB technology: fully customize RGB lighting from nearly 16.8 Million colors

11.    Portability / Mobility

a.       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.

b.       Do you require a Desktop / Laptop / Notebook or other PC format?

c.        How will this affect the cost of your dream machine.

12.    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*** |  |