CPT110 - Introduction to Information Technology

Assignment 2: Building a PC (15%) - SP4

Due Date: Monday 16th January, 2012 - 11:59pm

Assignment Learning Objectives:

- Research computer parts to discover potential issues of compatability, performance and price.

Skills required:

- Ability to perform internet searches and read specification details for computer parts
- Identify compatibility issues between different computer components
- Match user requirments with a computer system
- Report writing and referencing
- Create PDF document

Say Hello to Dave

Dave is looking to buy a computer. He's pretty handy with putting things together and would like the challenge of building his own computer out of parts. However, looking at a price sheet from a local computer store, he is baffled with the parts selection. He needs help working out which parts are compatible with each other and selecting those that will that best suit his needs.

The assignment will involve the following computer hardware components:

- Case and Power Supply
- Graphics Card
- Motherboard
- Processor
- Memory / RAM
- Hard Disk Drive
- Optical Disc Drive

Your task is to take Dave's requirements and advise/recommend some components, from the provided list, that are compatible and best suit his needs and wants. Also explain what those component choices mean for the rest of the system.

Dave's Requirements

> "I'll mainly be using this machine to help out with some general work and office tasks, but it'll be kept at home. I don't need anything cutting-edge, but it should be made of modern parts and should be at least somewhat extensible and upgradeable. I do not play too many computer games but I'm toying with the idea of hooking the system up to the TV, as a media centre."

Budget

> "I don't know how much this will cost. I have put aside $650 - $750 but I guess I could go a little higher than that if I thought it was worthwhile. However I wouldn't want to spend more than $900."

The Case

> "The idea of a sleek black case appeals to me. Something simple; no case windows or bright flashy parts – those look distracting. I don't want a big case, but as I said, I want at least some kind of expandability to the system. I guess that means something in between a shoe-box and a huge tower case. So basically I should be able to expand my system later and yet save some space."

Processor, Motherboard and Memory

"A few computer egg-heads have told me that for my kind of needs, either an Intel or AMD CPU will work. Then they started talking about memory and motherboard model numbers and frequency and clock speed and I tuned out the details. This little project will be enough of a challenge for me already, so I really need help with whatever it was they were talking about!

Processor wise, I want the best "bang for buck" that costs less than $300. The hardest task I expect the system will do is digital video encoding, I guess.

Motherboard and memory; whatever works. I do expect I'll need to expand the memory of this system and I'd like to not have to throw out the old memory sticks when it's time to add some more."

Optical Drive

"The only thing I need from an optical drive is to be able to record my home movies onto DVD and make backups of my work."

Hard Disk

"With the digital video camera and media centre plans for the future I can see myself needing a lot of disk space later – but not just yet. I'm sure disks will be cheaper in the future."

Graphics Card

"I won't be playing games here – just normal office and internet stuff. That said, it should be fully compatible with the special effects in Windows Vista, Windows 7 and Kubuntu 11.10 Linux. One thing to make sure is that it can plug into my plasma TV. It has 'HDMI', 'VGA' and 'Component' connectors on the back. Whichever one of those gets the best picture quality is the one I want to use."

Report Requirements

Attached to this document is a parts list from "Brickworkz Computer Supplies" which is the shop from where Dave wants to buy components. Looking at the list from Brickworkz Computers, if there are equivalent and comparable options to choose then you should select the brand/model that provides the best value.

Component Selection and Advice

You have to advise Dave of which exact part is most appropriate (i.e. you should only choose ONE part for each component), taking the following questions into account as part of your answer:

- How does your selection fit in with Dave's needs?
- Why have you chosen this particular part over the others? Frame your answer in terms of any technical and value advantages that this component would provide.
- What effect does selecting this part have on other component purchases, to ensure that everything is compatible? List each component that is affected and the standards to which it must adhere in order to be compatible with your chosen part.

Also, note that **the parts you select must work together!** For example, do not recommend a particular CPU and then go on to recommend an incompatible motherboard. This information is not available in your textbook. You should do internet searches on terms such as "*how to build a computer*" or "*choosing computer components*" to read about compatibility issues that you may need to consider.

What to include your report

The report should be in a structured format where each component has been covered under separate headings/sections. **It is expected that you will need to divide your report into a section for each of the component as well as a section discussing the total cost of the system.** However, depending upon how you structure your report, this may not apply.

An introduction, conclusion, or executive summary is not required. You may choose to explain some sections using dot-points, if you believe it is appropriate.

There is no specified minimum or maximum length. However, in order to answer all questions and conclusions to an appropriate level of detail, a typical report could be expected to run approximately two to four pages, not including any diagrams, pictures or tables you may wish to include. (It is not necessary (nor assessable) to make use of diagrams, tables or pictures, however, these can be added if they are considered relevant to your explanations.)

Your **PDF** report should also have the following:

- Cover page (template will be provided)
- Reference section (*only if you have used external sources of information*)

Submission Procedure

- You should submit your assignment via Blackboard using the **Assignments > Assignment 2 – Submission** link (detailed instructions are available at the end of assignment 1 specs).
- You may resubmit the report if you need to, but only the most recent version will be marked.
- Report should be submitted in PDF format. Free PDF converters are available on the Internet.
- The final size of your assignment must not be larger than 1.5Mb. This may mean reducing the resolution of each image and/or compressing image formats prior to including them in the report (e.g. to jpg).
- You should name your file with your student number followed by '-A2' (for e.g. *s3344987-A2.pdf*)

Research, Collaboration, and Academic Integrity

There is a research component to this report; any direct references, figures, or quotes used must be cited, and a bibliography should be included as an appendix at the end of your report.

Citations must *not* come from any encyclopaedic resource; e.g. Encyclopaedia Britannica, Encarta, World Book, Wikipedia (or syndication thereof), etc.

You may share and discuss any links and references you find relevant to completing this assignment on the discussion forums, so long as you include *how* you found the resource that you mention. You are free to refer to textbooks, notes, work in study groups etc. to discover approaches to problems, however the assignment should be your own individual work.

Citations

Complete information about how to cite a document is available from RMIT Library:

http://www.rmit.edu.au/library/info-trek/referencing

You are free to choose a citation style, however it must be consistently used and applied in your report. Note the difference between “in-text” and “bibliography” referencing. Your report must include a bibliography, and may make use of in-text referencing where it is appropriate.

Marking Guide

Description	Marks
Component Selection	
Technical reasoning for selection	30
Match to user requirement	30
Compatibility	30
Referencing (if appropriate)	5
Readability	5
TOTAL MARKS	**100**
PENALTIES (marks are deducted)	
- File size exceeds 1.5Mb	-20
- Not naming the file with your student number followed by '-A2' (e.g. *s334498-A2.pdf*)	-10
- Making a submission with multiple files (i.e. not including the images within the report)	-10
- Not submitting in PDF file format	-10
- Late submission	*see Late Penalty section*

Plagiarism:

This assignment must be your own work. Plagiarism is a very serious offence. Students are referred to the RMIT plagiarism policy at http://www.rmit.edu.au/browse;ID=sg4yfqzod48g1

Extensions:

Any student wishing an extension must go through the official procedure for applying for extensions.

Do not wait till the submission due date to apply for an extension. The facilitator or tutors cannot authorise extensions. Late submissions must first be approved by the Online Programs Administrator by completing the "Assignment Extension Form" at this URL: http://oua.cs.rmit.edu.au/procedures/forms.html or contacting ouacsit@rmit.edu.au.

Draft Reviews:

The instructors will not be able to review assignments prior to submission.

Late Penalties

Late submissions of assignments will be penalised as follows:

Time Submitted after Due Date	Late Penalty
0 to 4:59 minutes	no late penalty
5 minutes to 1 hour	5% off final mark
1 hour to 1 day	10% off final mark
1 day to 5 days	10% off final mark for every day late
more than 5 days	100% penalty (you will get 0 marks)

Brickworkz Computer Supplies

"buy from us or else..."

Parts Price List

Dec-11

MOTHERBOARDS

Asus P8H61-USB3-V3	$99
Gigabyte GA-78LMT-S2P	$66
Gigabyte GA-970A-D3	$201
Gigabyte GA-A75M-UD2H	$138
Gigabyte GA-Z68XP-UD4	$220

PROCESSORS

Intel

Core i3 2130	$147
Core i5 2500	$220
Core i7 2700K	$368
Core i7 960	$314
Pentium G850	$90

AMD

A6 3500	$88
FX-6100	$180
FX-8120 Oct-Core	$235
Phenom II X4 960T Black Edition	$138
Phenom II X6 1090T	$150

CASE

Antec NSK2480 [380W]	$123
Bitfenix Shinobi	$75
Cooler Master Centurion V II [500W]	$108
Cooler Master Elite 100 mini ITX [150W]	$79
Cooler Master Elite 341	$70
ThermalTake Armor+MX	$140
ThermalTake V3	$76

OPTICAL DRIVE

Liteon IHAS324 DVD-RW	$24
Liteon IHBS212 12X Blue-Ray LightScribe	$105
Samsung DVD-RW	$25
LG Blu-Ray Reader	$69

HARD DISK

3.5" HDD

Western Digital 160GB IDE	$79
Western Digital 3TB STATA3 Green	$180
Seagate 3TB XT 7200	$265
Samsung 2TB EcoGreen	$179
Seagate Barracuda 500GB	$80
Seagate Barracuda Green 2TB	$139

2.5" HDD

Western Digital Scorpio Blue 1TB	$289
Kingston 128GB SSD HyperX USB3	$259

MEMORY

DDR RAM

Corsair 4GB 800 Kit	$65
Kingston 1GB 3200	$48
Kingston 1GB 6400	$28

DDR3 RAM

Kingston 8GB 1600HX	$75
Kingston 12GB 1600HX	$109
Corsair 4GB 1333	$36

SERVER RAM

Kingston 4GB Kit 1333 ECC Unbuffered	$99

GRAPHICS CARD

AGP Graphics

Gigabyte 1GB 4650 AGP	$115

Nvidia/ATi Graphics (PCI-Express)

Asus 2GB HD6950 810MHz [x16]	$329
Gigabyte HD6450 1GB	$205
Gigabyte HD6870 1GB	$201
MSI 1GB GTX560OC Ti [x16]	$269
XFX Radeon 6950 XXX 2GB	$329
Zotac 512MB ION [x1]	$69