# Hands On Assignment 1

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| *Minimum Qualifications* | *Minimum Specifications* | *Specifications of the Selected Computer* |
| 1. You must be able to easily take it with you on business trips. | Portable computer  Slate or Clamshell form factor | Laptop computer  Clamshell form factor |
| 2. Its main processor must be able to process 8 or more bytes of data at a time while using at least 1 billion cycles per second. | There are 8 bits per byte, we need an 8 byte processor.  8 bytes of data simultaneously processed data means a 64 bit-processor  1 cycle= 1 Hertz;  1,000,000,000 Hertz =  1 Gigahertz/second processing speed required | Windows 8.1, 64 bit, English  4th Generation Intel ® Core i7-4710 MQ processor (The Intel ® i7 is a 64-bit Quad-Core processor)  3.5 Gigahertz/second processing speed |
| 3. Its main memory must hold the equivalent of at least 8 billion characters at one time | 1 character = 8 bits; 8 bits = 1 byte  = 7.4506 Gigabytes  8 Gigabytes of Random Access Memory required | 16 GB of Random Access Memory present at 1600 Megahertz;  Additional 2GB of Random Access Memory specifically allocated for graphics card. |
| 4. You should be able to store the equivalent of at least 700 billion characters on one of its internal storage devices | 1 character = 8 bits; 8 bits = 1 byte  = 651.92 Gigabytes  652 Gigabytes of non-volatile storage required | 1 Terabyte of Storage Accessible at 6 Gigabytes/Second Hard Drive + 80 Gigabytes of mini Serial Advanced Technology Attachment Solid State Drive Caching |
| 5. It must be able to play Digital Versatile Disc movies and music Compact Discs | Digital Versatile Disc Drive required | Slot-Loading Dual Layer Blu-Ray Reader (Blu-Ray Disc-Read Only Memory, Digital Versatile Disc Drive- Read/Write, Compact Disc-Read/Write) |
| 6. It must be able to connect to an industry standard wired Local Area Network and, under ideal conditions, transfer the equivalent of 12.5 million characters to another computer in one second. | 1 character =8 bits; 8 bits = 1 byte  12.5 million bytes = 12.5 Megabytes \*8 = 100 Megabits  100 Megabits/Second data transfer rate required from the laptop's Ethernet port | RJ-45 Gigabit Ethernet IPv6 port comes standard  45 Gigabit/Second transfer rate assuming this man uses a fiber-optic Ethernet cable (transfer rate of 26 Terabits/Second) |
| 7. It must be able to connect to an industry standard Wireless Local Area Network, and, under ideal conditions, transfer the equivalent of 6.25 million characters to another computer in one second | 1 character = 8 bits  6.25 million bits = 6.25 Megabits  6.25 Megabits/Second data transfer rate required from the laptop's built in Wireless transmitter/receiver | 802.11ac Dual Band 2x2 Alternating Current WiFi + Bluetooth 4.0 capabilities from Dell Wireless 1550 WiFi device  1,024 Megabits/Second data transfer rate (assuming a wireless router with similar data transfer capabilities such as a Linksys WRT1900 Alternate Current Wireless Router with a data transfer rate of 1,300 Megabits/Second) |
| 8. Its display should be able to display 980,000 dots at one time | 1 dot = 1 pixel; 980,000 pixel area required  1280x780 pixel display required | 14 centimeter While Light Emitting Diode Display with Full High Definition and Anti Glare;  1920x1080 pixel display  NVIDIA ® GeForce ® GTX 765M Graphics Card included to support 1920x1080 resolution |
| 9. You must be able to connect at least two peripheral devices to the computer to which the computer can transfer more than 25 million characters per second | 1 character = 8 bits; 8 bits = 1 byte  25 Megabytes = 200 Megabits  200 Megabit/Second data transfer rate required (assumed for Universal Serial Bus ports, of which this laptop has two) | Two Universal Serial Bus Superspeed 3.0 ports  USB ports have a 480 Megabits/Second Data transfer rate |
| 10. You must be able to create and play back audio and video files through built in or peripheral hardware devices. | Optical drive must have Digital Versatile Disc Drive-Read/Write and Compact Disc-Read/Write capabilities  Computer must have a webcam and microphone built in, as well as speakers for listening to audio and a display to watch video or whatever it lacks must be purchased | Slot-Loading Dual Layer Blu-Ray Reader (Blu-Ray Disc-Read Only Memory, Digital Versatile Disc Drive- Read/Write, Compact Disc-Read/Write)  Alienware 14 Laptop comes with a 1080p 2 megapixel webcam with a built in microphone (specs of microphone not listed)  14 centimeter While Light Emitting Diode Display with Full High Definition and Anti Glare;  1920x1080 pixel display  2 speakers + 1 subwoofer (Specs not included) |

Product Pricing

Subtotal for the cost of this Alienware 14 machine comes to $2,097.98, including 1 year accidental damage service, Microsoft Office Home and Business 2013, and Cyberlink Power Media Manager to permit playback and editing of audio and video. Folsom has an 8.00% tax rate on good, adding an additional $167.84 to the price. This brings the subtotal up to $2,265.82. Add in the Environmental fee of 5$ for electronic waste disposal, and the costs of shipping and handling (an additional 0$, isn't Dell nice?) and we reach a combined total of $2,270.22. Shipping would take about two weeks though. Total: $2,270.22

Product Description

<http://www.dell.com/us/p/alienware-14/pd.aspx#overrides=dkcwg03s:33~ACDAM1D;1002~OHS13M>

Above is the Universal Resource Locator where I found (and built to some extent) this laptop. It is an Alienware 14 laptop found through Alienware.com. I chose this computer because I know that Alienwares are known for being high end gaming computers which are customizable upon purchase. This gave me great confidence that, even if I would exceed the requirements by miles, this computer accruement task would essentially become one-stop shopping. Once on the site, I clicked on a link to their current selection of laptops, and selected the lowest end gaming laptop which they offer, the Alienware 14. I browsed through the features of their four starting kits for the Alienware 14, and chose the one in the third column from the left, specifically because it was the only Alienware 14 setup which included an Optical drive which conveniently met requirements 5 and 10 when combined with Cyberlink Power Media Manager. From there I added Microsoft Office Home and Business software to aide this businessman in his ventures, and a one year warranty; after all, a man who does a lot of travelling with his laptop is a man who is likely to have his laptop broken.