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CIS122 Essentials of Networking
Project #2: Assembling a PC

Project objective: A new employee is working at our company and we need to assemble a custom PC for them. It needs to have the same Windows version as the other employees at the office so that they can have the same software versions and applications as well as any security updates or bug fixes. Because they are mostly doing data entry and administrative work, they do not necessarily need as much storage and RAM as everyone else. However, because they are dealing with lots of data from the spreadsheet software and storing those big files, they are given the same amount so that they won't have any problems finding space and they won't have any problems with latency or applications lagging.

Equipment used:

Equipment Description	Vendor	Vendor Item #	Retail price	Actual price (if known)
XPC Cube Item	Shuttle	09Z-01T8-00004	$227.39 (with warranty + $26.99	
Black DVDRW	Asus	1W8-006A-00003	$22.99	
21.5" Monitor	Asus	0JC-001P-00A86	$88.57	
Wired Keyboard & Mouse	Logitech	N82E16823126097	$14.40	
2x Blue 1TB Hard Disk Drive	Western Digital	9SIAA0S8AG9748	$46.99 (Total = $93.98)	
2x 4GB DDR4-2133 non-ECC RAM	HP	9SIADRH8SV3971	$30.00 (Total = $60.00)	
i3-6300T 35W Skylake CPU	Intel	N82E16819117641	$154.99	

Detailed list of software and operating platforms used, including version numbers and licensing requirements:

Network diagram:

Configurations:

1. The first step in assembling your PC is to take safety precautions and ground yourself. Place a hand on something that conducts electricity so that if there is any electric discharge, it will go to that instead of through you or through the electronic components you are working with. Make sure your phone is nowhere near the hardware in addition to any food items or open drinks. Your phone is an electronic device and can conduct electricity which can then affect and damage the computer hardware components. Having food and drinks nearby can also damage the computer components because they can spill on the hardware and cause damage as well. In addition, if water or any liquid spills on or near the hardware, it can spread electricity as well and cause harm to you or to the hardware components themselves.
2. The next step is to install the CPU. It is very important to line up the triangle on the CPU with the triangle on the motherboard where you are installing it. It is also important to only install a CPU that does not consume more power than what the fan requires in order to operate.
3. After you install the CPU, which might be challenging to some, you need to install the fan. Some people use thermal paste or bolt the fan down and it is dependent on your personal preference and which you find easier. In order to install the fan, you will have to remove the RAM because they will be in the way and it will be easier to take everything out, install the fan properly, and then reinstall the RAM. The fan needs to operate properly because otherwise dust and build up can cover the RAM and other computer components and affect the performance.
4. After you install the fan properly, making sure to plug in the power connector, you need to install the RAM. It is important to insert the RAM into the right slots and in the right orientation, but if you don't put it in properly, the computer won't start up properly and you can go back and easily fix it. If you want, you can double check the manual that came with the RAM and motherboard, or look up the manufacturer online.
5. Then, you need to install the hard drive. After you place the hard drive or hard drives inside the riser, depending on how much storage you need, you can screw the riser in using screws.
6. You should then place the optical drive on top of the hard drive. It is very important to get hard drives that fit the riser, because otherwise the connectors might be a little off or the riser might not be pushing against the right things in the computer.
7. After you have installed everything, you should go back and check to make sure that all the power connectors are plugged in. For example, the CPU fan should be plugged into the four pin connector. If the different components are not plugged in properly, your computer won't run as smoothly and you might hear beeps or see the blue screen of death while trying to install your operating system later on.