**Overview**

Your professor will be walking you through the teardown of one or more computers. They will point out the components of interest, and you may want to take a few notes during the teardown(s) so that you can quickly and accurately answer the lab questions in this document.

For practical reasons the teardown may be done by your Professor, with the class gathered around, or it may be done in row-based groups (in which case you may want to nominate one or two members of your group to do the actual teardown). Once the teardown(s) are completed you will return to your desk and independently fill in your answers in this document. I have highlighted the spots where you need to provide answers in red.

**Outcomes**

This lab is designed to connect your understanding of the components of a computer that we discussed in class with actual computer hardware. You will also do some personal research to answer additional lab questions related to the exercise.

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| Elements of Performance | Related Course Learning Outcomes |
| EOP 8.1. Locate and explain the purpose of typical modern internal computer components | CLO 8. Identify, describe and understand the components of commonly encountered types of computers |
| EOP 8.2. Contrast and compare similar components in different classes of computer hardware | CLO 8. Identify, describe and understand the components of commonly encountered types of computers |
| EOP 8.3. Understand the approximate cost of the key internal components of computer systems | CLO 8. Identify, describe and understand the components of commonly encountered types of computers |

**Time on Task**

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| Learning Activity | Approximate Time |
| Perform hands-on lab tasks and answer lab questions | 30 min |
| Read, research, and write answers to research section | 10 min |

Let’s get started!

**Lab Steps and Questions**

1. If your Professor is performing one or more of the teardown(s) you should now go to the area they designate for viewing. Pay attention to the items the Professor is highlighting – you may want to take notes during the teardown(s).  
     
   If the teardown(s) are being performed in your row-based groups you should now nominate one or more members of the group who will actually remove the hardware components as specified by your professor. Your professor will carefully walk your group through the process of opening the computer(s) and locating key components. It may be wise to take notes during the teardown(s).
2. When the teardown(s) are complete, return to your own desk and begin answering the questions in this document. When you’ve answered them you should submit this document to the associated submission link (see the module area where you got this document for the dropbox link!)
3. What kind of computer(s) were opened and examined during today’s lab? Make sure you describe the general type of computer as well as make and model information.

Black Dell PC – D03S  
Dell Server rack – PowerEdge 1950

1. What components did you examine on the computer(s)?

CPU, PSU, Memory(RAM), GPU, Storage(HD), Optical Drive, Motherboard. CPU Fan & heatsink, Cooling fans, PCIE Raid controller

1. If you looked at multiple computers, what were the main differences between the equivalent components)? Include physical differences and technical differences, if you can identify them. Ask your professor for help on this if you’re not sure which direction to take this question.

The server rack had more CPUs, RAM, a raid controller, PSUs, HDDs and more dedicated cooling fans. The PC had a dedicated graphics card and no raid controller.

The server rack had 8 ram channels, 2 PSUs, 2 HDD slots, 16 fans and the raid controller.  
  
The PC had 4 ram cahnnels, 1 PSU, 1 HDD slot, 2 fans, and a GPU.  
  
Now that you’re an expert in computer components you’re ready to build a new computer! Do some online research (I suggest consulting sites such as CanadaComputers.com and Amazon.ca) and build a list of the components you’d need in your computer system and their cost. Your budget is $1 500.00 (Canadian dollars), before tax, so make sure that you pick components that fit into that budget limit.

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| Part | Price |
| Case | 74.99 <https://www.canadacomputers.com/en/mid-tower-cases/247182/deepcool-cc560-v2-mid-tower-atx-case-r-cc560-bkgaa4-g-2.html> |
| Motherboard | 219.88 <https://www.canadacomputers.com/en/amd-motherboards/233013/asus-prime-b650m-a-csm-micro-atx-commercial-motherboard-prime-b650m-a-csm.html> |
| PSU | 74.99  <https://www.canadacomputers.com/en/power-supplies/103031/thermaltake-smart-white-700w-80-plus-certified-power-supply-ps-spd-0700npcwus-w.html> |
| CPU | 249.00 <https://www.canadacomputers.com/en/amd-desktop-processors/251518/amd-ryzen-7-5700-8-core-16-thread-7nm-am4-wraith-spire-cooler-65w-100-100000743box.html> |
| Memory | 139.00 <https://www.canadacomputers.com/en/desktop-memory/246328/teamgroup-t-force-vulcan-32gb-2x16gb-ddr5-6000mhz-cl30-udimm-flbd532g6000hc30dc01.html> |
| Storage | 114.99  <https://www.canadacomputers.com/en/desktop-laptop-internal-ssds/244895/wd-blue-sn580-1tb-m-2-nvme-pci-e-ssd-wds100t3b0e.html> |
| GPU | 399.00  <https://www.canadacomputers.com/en/powered-by-intel/266476/asrock-intel-arc-b580-steel-legend-12gb-gddr6-oc-battlemage-gpu-b580-sl-12go.html> |
| Monitor | 169.99  <https://www.canadacomputers.com/en/24-under-gaming-monitors/251921/msi-g244pf-e2-23-8-16-9-rapid-ips-180hz-1ms-fhd-gaming-monitor-g244pf-e2.html> |
| Keyboard | 12.99  <https://www.canadacomputers.com/en/home-office-keyboards/100273/elephant-boreas-usb-wired-waterproof-keyboard-black-ke-011-ke-011-black.html> |
| Mouse | 18.99  <https://www.canadacomputers.com/en/gaming-mice/212575/elephant-m519-silent-wireless-mouse-white-ele-m519-wh.html> |
| OS | Windows 11 not activated (FREE) <https://www.microsoft.com/en-us/software-download/windows11> |
| **Total** | **1473.82** |