Lab 2-1 Locate the Power Supply

ACTIVITY

Locate the power supply in your lab computer. Answer the questions below.

Lab should take 20 minutes.

WHAT YOU NEED FOR LAB

1. Computer
2. Power supply

Questions

1. What is the wattage rating of your PSU?	
2. How many molex devices can you add to your PSU?	
3. How many fans can you connect to your PSU?	
4. Is there a floppy connector?	
5. Is there a built in SATA connector?	
6. If you need to replace this power supply, which would you choose and why? (Find one on Tiger Direct or Newegg.	

Lab 2-2 Access the BIOS

ACTIVITY

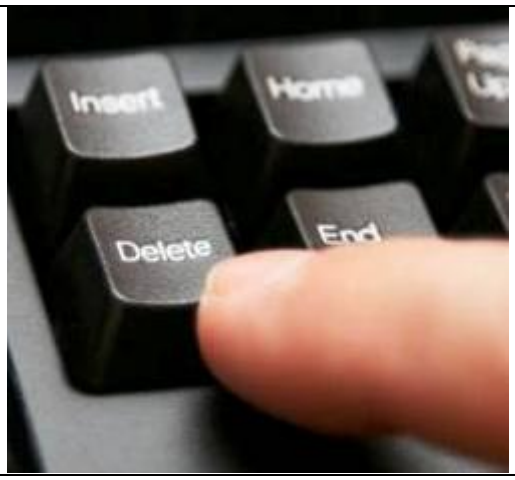
You are going to use your lab computer to access the BIOS and make some changes to the settings.

Lab should take 20 minutes.

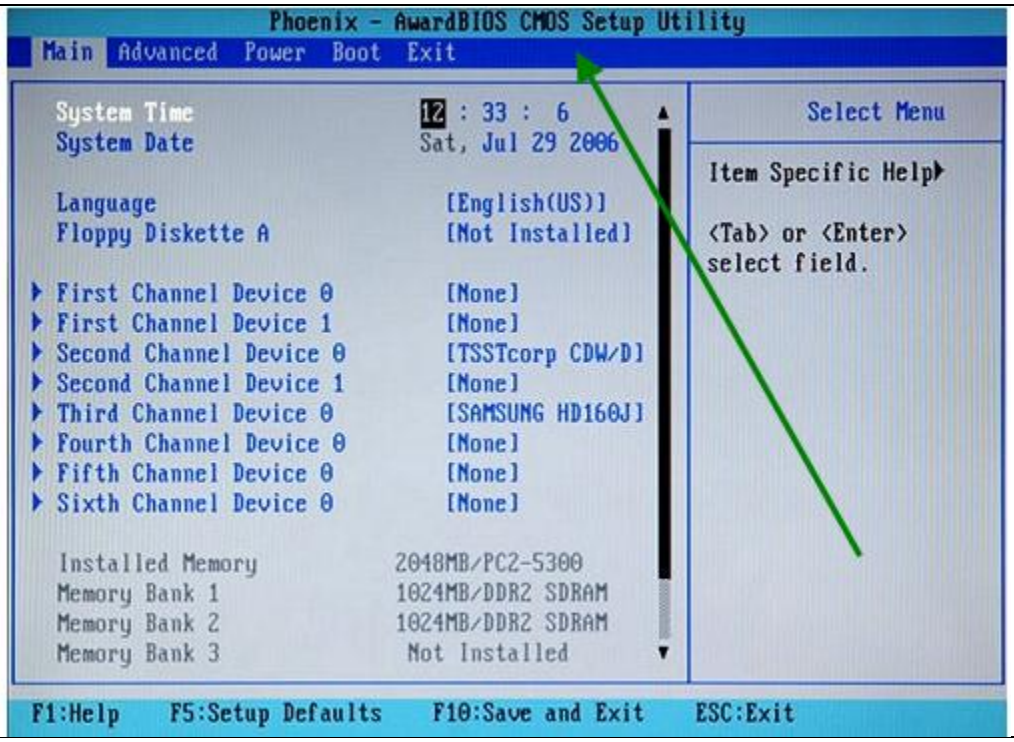
WHAT YOU NEED FOR LAB

1. Computer with internet.

DIRECTIONS

1. Restart your computer and watch the screen to learn which key to hit to access the BIOS or CMOS settings. 2. When you get into the BIOS look around to see what version of BIOS you have.	

3. Now start looking around your BIOS and answer the questions below.



Answer the questions

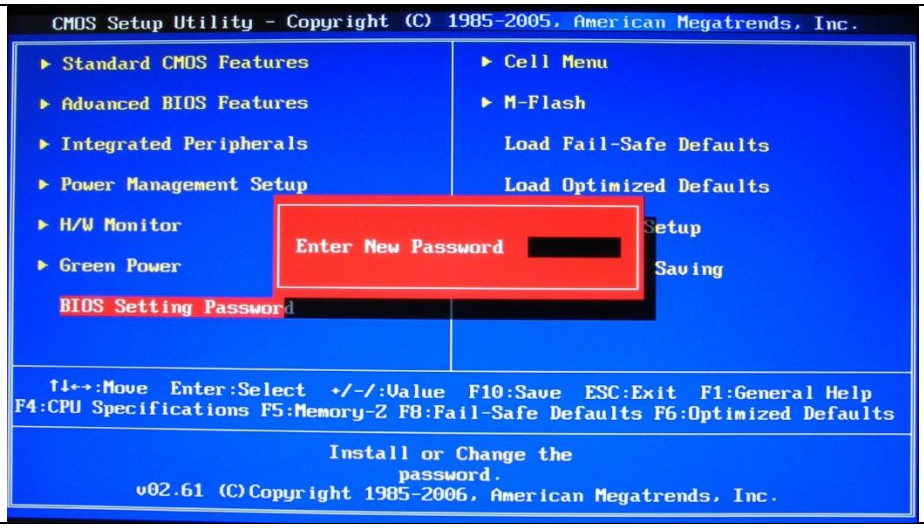
1. What is the frequency of your CPU?

2. What is the boot order sequence of devices?

3. What type of hard drive do you have installed?

4. Where would you set a BIOS password?

5. Does this BIOS allow you to overclock the processor? (Don't understand, look it up!)

4. Work with a neighbor and have him set a BIOS password on YOUR machine and you set one on his or hers. DO NOT TELL HIM OR HER THE PASSWORD!	
5. Using the DMI on the motherboard, which is the identifier on the board that tells you what the board is, look up a manual for this board and learn how to reset the BIOS password.	Don't know how: http://pcnineoneone.com/howto/moboid1/ shows you were to find identifiers on the motherboard.
6. Reset the BIOS password	
7. Restart and log in.	

Lab 2-3 Observing the Boot Process and Hardware Components

1. Reboot your lab computer. Carefully watch your computer screen during the boot process (press Pause if necessary), and record which CPU is used by your home or lab computer. If you do not see anything, hit F2 to get into the BIOS and turn off "Quiet Boot". (You'll have to search for it.)

2. Who is the BIOS vendor and what version of the BIOS are you using?

3. As the computer boots, memory is counted. Observe the memory count and record the amount of memory detected. What number system is used to count this memory?

Why do you see differences?

4. Look at the back (or the front if the ports are located there) of your home or lab computer and make a drawing. Label on the drawing the purpose of each port and connection you see. If you are not sure what the purpose of the port is, label the port "unknown port." In later chapters, the purposes of these unknown ports will become clear.

Lab 2-4 Identifying Ports and Cables

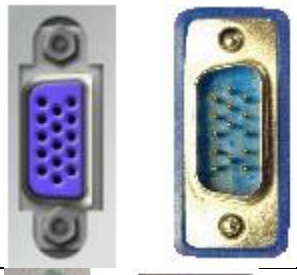
ACTIVITY

Turn your computer around so you can see the ports on the back. You are going to identify the ports on the back. For the ones you do NOT have, look them up online.

WHAT YOU NEED FOR LAB

1. Lab computer
2. Computer with Internet access.

Port	Common Name	Devices that attach	Old/Current Technology
			
			

			
			
			
			
	Pink Blue Green	Pink Blue Green	
		How many wires?	
		How many wires?	
			

 There…you have your page numbers. Are you happy now?

		How many pins?	

Lab 2-5 Internal Components

ACTIVITY

Find compatible processors for your motherboard.

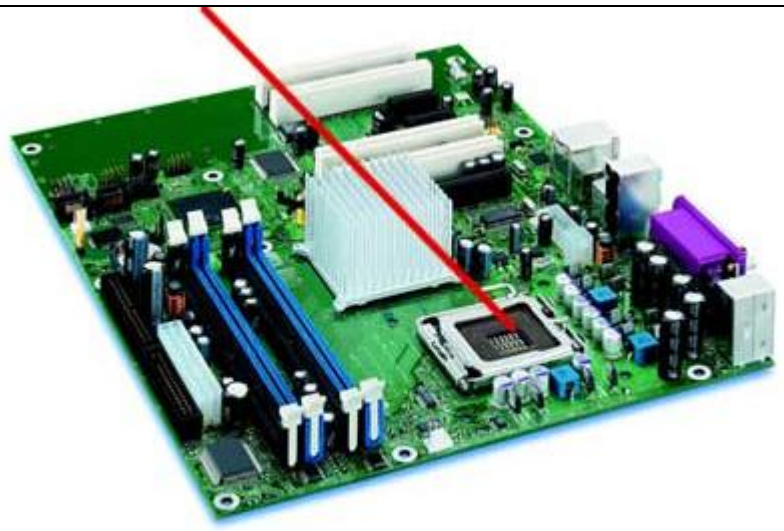
Lab should take 20 minutes.

WHAT YOU NEED FOR LAB

1. Lab computer
2. Internet
3. Brains (don't eat them, we are not zombies)

DIRECTIONS

1. Imagine tomorrow you come in and your computer won't start at all. You check all the cables, swap things in and out, and finally determine your CPU died overnight. 2. Determine which motherboard you are using. You should have done that in lab. 3. First you need to figure out what SOCKET TYPE your processor is. Write that down.	What kind of processor is in there now?

4. Go online and find which processors will work with this motherboard. 5. Locate a place to purchase the processors you find (find at least three).	

Answer the questions below:

1. What is the brand of motherboard you have?
2. What is the model number?
3. Which processor is in there now?
4. What is the form factor of this processor?
5. Which of the three processors you found is the cheapest?
6. Price?
7. Which of the processors is the fastest?
8. Speed?
9. Say you also wanted to buy RAM for this computer, what kind works with this motherboard?

Draw your processor below and label it.

Lab 2-6 Label the Motherboard

ACTIVITY

1. Turn off and unplug your computer workstation.
2. Check out a set of tools and a grounding strap from your teacher.
3. Attach the grounding strap and ensure your workstation is free of clutter.
4. Open up the computer.

In the space provided on the back/next page, make a *complete* diagram of your lab workstation's system board. In your diagram, label each of the components depicted in Figure 3-1, and describe each component's function. (*See www.howstuffworks.com for information on the components on a motherboard.)*

Label on your motherboard:

1. CPU
2. North bridge
3. South bridge
4. SATA connectors
5. IDE connector
6. Floppy connector
7. RAM
8. Battery
9. Capacitors
10. Resistors
11. PCI slots
12. PCI-e slots
13. AGP (if applicable)
14. AMR (if applicable)
15. P1
16. P4
17. CPU Fan connector
18. System panel connector block

Lab 2-7 Label the Jumper Blocks

Labeling the jumper blocks

Find your manual for your motherboard online and locate the jumper block for your power switch, HDD light, etc. Draw that block and label it below.

Draw your system panel connector jumper block here and label what each one does

Label the following:

a. HDD LED
b. Power LED
c. Power switch
d. Reset Switch
e. Speaker
f. Any other items

Review Questions

Circle True or False.

1. The mouse and keyboard ports are always located directly next to the CPU socket **True / False**
2. AT-style system boards require two power connectors from the power supply. **True / False**
3. Different system boards can use different types of memory. **True / False**
4. Most CPUs are bolted to the system board to prevent them from slipping off and causing the entire PC to crash. True / False

5. Describe the role of a voltage regulator.

6. Compare the role of a chip set to that of the CPU.

Lab 2-8 Diagramming Your Lab Computer

ACTIVITY

Now that you have diagrammed your computer, it's time to take it apart and inventory parts. You're going to get some anti-static bags, your grounding strap, and you're going to take apart your entire computer. Yes, everything comes off. After you write down what everything is (that you can determine), put it ALL back together.

Lab should take 40 minutes. If you do not have 40 minutes, move onto the project and come back to this one.

WHAT YOU NEED FOR LAB

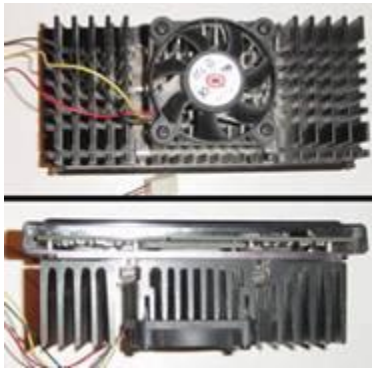
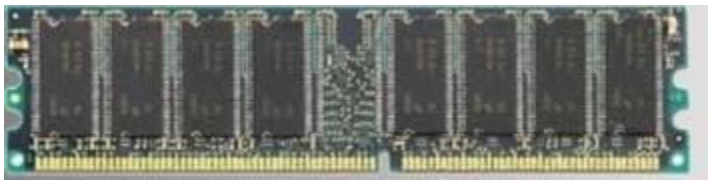
1. Lab computer
2. Toolkit
3. Grounding strap
4. Anti-static bags

DIRECTIONS

1. Get out your tools.
    a. One toolkit
    b. One grounding strap
2. Get your computer
3. Turn it on to ensure it is working. Never mind what OS is on it, we'll be changing that.
4. Shut it down.
5. You're going to inventory the brand and model of each of the following.
    a. Case
    b. Motherboard
    c. RAM
    d. Processor/heatsink
    e. Hard drive
    f. DVD burner
6. Make sure your area is clean.
7. Take out your tools.
8. Connect one end of your grounding strap to an unpainted surface on your computer. Connect the other end to you (your wrist). ***Any time you open your computer, you must be grounded.***
9. Locate the screws on the back of your case. You will unscrew the screws that are *farthest* from the power cord. Remove those screws and set aside. Do not lose them, please.
10. Remove your cover and set it out of your way above you or below, but NOT on the floor.

Label your computer with your name and we will lock them away after each class period.	
Video Card 	**Brand**
	Model
Sound Card	**Brand**

 On this card you can see it is an Abit AU10 sound card.	
	Model
Network Card 	**Brand**
	Model
CD ROM 	**Brand**
	Model
Hard Drive 	**Brand**
	Model

Motherboard 	**Brand** **Model**
Processor  	**Brand** **Model**
Memory (RAM) 	**Brand** **Model**
Other (draw picture)	**Brand** **Model**
Other (draw picture)	**Model**

	Brand

Once you have completed this lab, make sure the computer is running perfectly and go onto your project!