This document recapitulates the presentation you learned in class today. We will walk through the essentials of setting up a basic home network that consists of a router and a few computers. Setting up an actual network takes time, so we're going to use Cisco Packet Tracer.

Packet Tracer is a powerful tool that allows you to virtually simulate network setup just by interacting on your computer. Please carefully study this information because you will need to know this for your future Cisco curriculum and on the Strut competition as well.

Open Packet Tracer	Go to **Start**. Type "Cisco Packet Tracer" and click the application to open it.
Physical Setup	To make a network, we first need a source such as a network hub. For this example, we will use a router. 1. Go ahead and click the **Router** section and choose the **1841 Router**. 2. Move your mouse to the white space, and click to place the router on the workspace. 3. Click **End Devices** and click **Generic PC**. 4. Move your mouse to the white space, and click once to place the PC on the workspace. 5. Repeat, and add a second **Generic PC.** 6. Now we are going to connect them together. Click **Connections**. 7. Choose the **Copper Cross-Over** cable. 8. Click on **PC-0** and select **FastEthernet**. 9. Click on the other side to **Router** and select the **FastEthernet0/0**. 10. Repeat and connect **PC-1** to the **FastEthernet** interface. 11. Connect **PC-1** to the **Router** and select **FastEthernet0/1**.
Router Configuration	1. Click **Router0**. A window will come up. Go to the **CLI** tab. 2. Type **no** when asked to continue with configuration dialog. 3. Type **enable** to go to "privileged execution mode". 4. Type **config t**, to enter "global configuration mode". 5. Type **hostname Router0**, to name the router. 6. Type **enable secret class**, to password protect the "privileged execution mode". 7. We are going to configure the password for the console line. Type **line con 0**. Then type **password cisco**, to set the password as cisco. 8. Type **login** to enable password prompting. 9. Type **exit** to return to "global configuration mode". 10. We are going to configure the password for the "virtual terminal lines". Type in **line vty 0 4**. Type in **password cisco**. 11. We are going to enable the password requirement. Type in **login**. 12. Type **exit** to return to "global configuration mode". 13. Earlier, we connected the computers to the router using the **FastEthernet** interface. We are going to set up the router to work with those interfaces. Type in **interface FastEthernet0/0**. 14. Type in **ip address 192.168.1.1 255.255.255.0** (This will set the IP address and Subnet mask of the first FastEthernet Interface) 15. We are going to set a description on the router for later reference. To do this, we will type in **description Router0 FastEthernet0/0** 16. To start the interface, we are going to type **no shutdown**. 17. Type **exit** to return to "global configuration mode". 18. We are going to repeat this process with **FastEthernet0/1**. 19. Type in **interface FastEthernet0/1**. 20. This time, type **ip address 192.168.2.1 255.255.255.0** 21. Type in **description Router0 FastEthernet0/1**.

	(continued) 22. To start the interface, we are going to type **no shutdown**. 23. Type **exit** to exit from "interface configuration mode". 24. Type **exit** to return to "global configuration mode". 25. Hit the **Enter** key, and we will be back at the "privileged execution mode" when we first started the command line. 26. We are now going to check the information that we entered into the system. To do this, type **show running-config**. Continuously hit **Enter** to scroll down the list. You will see all the configurations you just set. 27. We want the router to run these configurations when it starts up. To do this, we need to copy the configuration files into the Router's NV RAM. To do this, we type in **copy running-config startup-config**. Hit **Enter** to confirm. The router configuration is now complete.
PC Configuration	We are now going to configure the computers to connect to the network. 1. First, click on **PC-0**. A configuration window will come up. 2. Go to the **Desktop** tab and click **IP Configuration**. 3. We will set a **Static IP**. 4. Set the **IP Address** to **192.168.1.2** 5. Set the **Subnet Mask** to **255.255.255.0** 6. Set the **Default Gateway** to **192.168.1.1** 7. Close the **PC-0** configuration window. 8. Repeat with **PC-1**, except use **192.168.2.2** for the **IP Address**. 9. Set the **Subnet Mask** to **255.255.255.0** 10. Set the **Default Gateway** to **192.168.2.1** 11. Close the **PC-1** configuration window. By now, you should see green dots on the cables connected to the devices.
Testing Connectivity	We are going to test for a valid connection by pinging **PC-1** from **PC-0**. 1. To do this, click **PC-0**. Go to the **Desktop** tab and click **Command Prompt**. This acts very similar to a DOS prompt in a Windows OS. 2. To see the details of the computer's local network, we can type in **ipconfig**. 3. We are going to ping **PC-1** by typing in **ping 192.168.2.2** At first, the request might time-out, but you should get a reply after that.
Testing for Connectivity using Simulation Mode	1. At the bottom right corner, click the "stopwatch" icon to activate **Simulation Mode**. 2. Click **Edit Filters**. Clear the selections. Select only **ICMP**. 3. Click anywhere to get out. 4. Look at the bar of items on the right hand side. Click the **Closed Envelope** + button. This will allow us to choose a source to test our network. 5. Click **PC-0** and then click **PC-1**. 6. Click **Auto Capture/Play** to begin simulation. You should now see an envelope going from **PC-0** to the **Router** to **PC-1** and back. After that, you have successfully completed your network setup.