2.12 LAB
While completing this lab, use the following information:

Location	Computer Name	IP Address
Networking Closet	CorpServer	192.168.0.10
Office 1	Office1	192.168.0.30
Office 2	Office2	192.168.0.31
Support Office	Support	192.168.0.32
IT Administration	ITAdmin	192.168.0.33
Executive Office	Exec	192.168.0.34
Lobby	Gst-Lap	192.168.0.35

Complete this lab as follows:

1. From the IT Administration office, ping each workstation on the network.
    1. Under IT Administration, select **ITAdmin**.
    2. Right-click **Start** and select **Terminal (Admin)**.
    3. From the PowerShell prompt, type **ping *[workstation's IP]*** and then press **Enter**.
       Notice that all the pings are successful except the one to Office2. This verifies that there is connectivity between all other workstations on the network except Office2.
       This indicates that the scope of the problem is probably limited to Office2.
       Because the scope of the problem is currently limited to Office2, you should look for common errors or solutions that you can test quickly.
2. Confirm that the network cable is connected to the NIC and the wall plate.
    1. From the top left, select **Floor 1 Overview**.
    2. Under Office 2, select **Hardware** to view the hardware in Office 2.
    3. Above the Office2 desktop computer system, select **Back** to view the back of the computer.
       Notice that an Ethernet cable is plugged into the network card in the computer.
    4. Select the ***Ethernet RJ45 shielded cable*** that is plugged into the computer.
    5. Scroll to the right and view the Ethernet wall plate.
       Notice that the cable in the computer is plugged into the Ethernet port on the wall plate.
    6. Scroll back to the computer and check for activity lights for the network port.
       Notice that no lights are blinking. This indicates that there is no connection to the network.
3. From Office2, replace the cable between the workstation and the wall plate.
    1. Drag the Ethernet cable from the back of the computer and place it on the workspace.

2. Drag the Ethernet cable from the wall plate and place it on the workspace.
3. Under Shelf, expand **Cables**.
4. Select **Cat6a Cable, RJ45**.
5. From the Selected Component pane:
    - Drag an **RJ45 Shielded Connector** to the Ethernet port on the computer.
    - Drag the unconnected **RJ45 Shielded Connector** to the Ethernet port on the wall plate.
      The lights for the network card are still not active. You could replace the NIC in Office2, but replacing cables is quicker.

4. From the Networking Closet, check the switch to ensure it is powered on.
    1. From the top left, select **Floor 1 Overview**.
    2. Under Networking Closet, select **Hardware**.
       Notice that the power light for the Cisco switch indicates that it is powered on. Also, since the workstation in the IT Administration office can communicate through the switch, so you know that the device is not turned off, and is functioning properly.
5. From the Networking Closet, observe the activity lights for all ports and check for cable connections.
    1. Zoom in on the switch ports.
       Notice that there are activity lights for other ports, yet there is a lack of activity for port 4.
       Possible causes include:
        - The cable between Office 2's patch panel port and the switch is bad or disconnected.
        - Port 4 on the switch is disabled or shut down.
    2. Select the cable plugged into Off 2.
       Notice that the other end of the cable (which is highlighted) is plugged into port 4.
6. From the Networking Closet, replace the patch panel cable.
    1. Drag the Ethernet cable from Off 2 and place it on the workspace.
    2. Drag the Ethernet cable from port 4 and place it on the workspace.
    3. Under Shelf, expand **Cables**.
    4. Select **Cat6a Cable, RJ45**.
    5. From the Selected Component pane:
        - Drag an **RJ45 Shielded Connector** to Off 2.
        - Drag the unconnected **RJ45 Shielded Connector** to port 4.
    6. The activity light for port 4 still does not indicate network activity.
7. Making a console connection to the switch to confirm that port 4 is enabled is a viable approach to this problem, but the lab does not provide a console application to confirm the switch's port settings.
8. From Office 2, add a known good spare NIC to the Office2 computer and connect the Ethernet cable to the new card.
    1. From the top left, select **Floor 1 Overview**.
    2. Under Office 2, select **Hardware**.
    3. Above the computer, select **Front**.
    4. Select the ***power button*** to turn the computer off.
    5. Above the computer, select **Motherboard** to open the case.
    6. Under Shelf, expand **Network Adapters**.

7. Drag **Network adapter, Ethernet 1000BaseTX, PCIe** to the PCIe slot on the motherboard.
8. Above the computer, select **Back** to replace the case.
9. Drag the Ethernet cable from its existing NIC to the new NIC just added.

9. Power on the Office2 computer and test connectivity to the network.
    1. Above the computer, select **Front**.
    2. Select the ***power button*** to turn the computer on.
    3. Right-click **Start** and then select **Terminal (Admin)**.
    4. At the PowerShell prompt, type **ipconfig**.
       Notice that Office2 received a new/different IP address from the DHCP server because the new NIC makes it look like a different computer.
    5. From the PowerShell prompt, type **ping *[workstation's IP]*** and then press **Enter**.
    6. Repeat step 8e for each remaining computer.
       All pings are now successful.