2.13 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 Exec, use the **ping** command to begin troubleshooting the connectivity problem.
    1. Under Executive Office, select **Exec**.
    2. Right-click **Start** and then select **Terminal (Admin)**.
    3. From the PowerShell prompt, type **ping *workstation IP address*** and then press **Enter**.
    4. Repeat step 1c for the *remaining workstations*.
    Notice that all the pings fail except to itself (192.168.0.34).
2. From Support, repeat the same troubleshooting steps used in the Executive Office to further discover the scope of the problem.
    1. From the top left, select **Floor 1 Overview**.
    2. Under Support Office, select **Support**.
    3. From the Favorites bar, select **Terminal**.
    4. From the terminal prompt, type **ping *workstation IP address*** and then press **Enter**.
    If needed, press **Ctrl** + **C** to stop the pinging process.
    Notice that all the pings fail except the ping to itself (192.168.0.32).
    With matching results from both computers, the problem is most likely shared with the other workstations.
    Because the scope of the problem includes two offices, you should look for common errors or solutions that you can test quickly.
3. From Exec, check for a connection to the network.
    1. From the top left, select **Floor 1 Overview**.
    2. Under Executive Office, select **Exec**.
    3. Right-click **Start** and select **Settings**.

4. Select **Network & internet**.
   Notice that the diagram on the Status pane shows that the network connection is not connected to a network.
5. Close the Settings dialog.

4. Check for a network connection by viewing the computer's NIC port.
   1. From the top left, select **Executive Office** to view the hardware in this office.
   2. Above the Exec workstation, select **Back** to see the back of the computer tower.
      Notice that the link and status lights on the NIC port are not blinking, indicating no connection to the network. This can be due to:
      - A bad NIC
      - A faulty cable (easy to test)
      - An unplugged cable (easy to test)
      - A turned off or faulty switch or hub port
5. Replace the network cable from Exec and the wall.
   1. Select the cable plugged into Exec and drag it to the shelf.
   2. Drag the **RJ45** cable from the wall plate to the shelf.
   3. Under Shelf, select **Cat6a Cable, RJ45**.
   4. From the Selected Component pane:
      - Drag a**n RJ45 Connector** to the network wall plate.
      - Drag the unconnected **RJ45 Connector** to the NIC on the back of the Exec computer.
        Notice that the link and status lights for the connection are still not green and active. This means that the cable may not have been bad. It's time to check for issues in the Networking Closet.
6. From the Networking Closet, check the switch to ensure that it's powered on.
   1. From the top left, select **Floor 1 Overview**.
   2. Under Networking Closet, select **Hardware**.
      Notice that the system light for the switch indicates that it is powered off. In addition, since the workstations in the Support Office and the Executive Office could not successfully ping the network, you can conclude that the device is turned off.
7. Check to see if the switch has power.
   1. Above the rack, select **Back** to switch to the back view of the rack.
   2. Select the switch's power cable and verify that it is plugged into the UPS.
      Notice that the switch is plugged into the UPS, but it is not plugged into the critical load section. This means that if the main power goes off, the switch loses power as well.
   3. Move the switch's **power cable** from the non-critical load (Bank 2) outlet to the empty critical load (Bank 1) outlet.
      Notice that the Ethernet cables plugged into the server have link status lights that indicate they have power and a connection.
   4. Above the rack, select **Front** to switch to the front view of the rack.
   5. Observe the power light and activity lights for all ports on the switch.
      The lights are all on and active (except for the wireless access point, as it is still connected to the non-critical load (Bank 2) on the UPS).
8. From the Executive Office, check for a network connection.
   1. From the top left, select **Floor 1 Overview**.
   2. Under Executive Office, select **Hardware**.

3. Check for an active light on the computer's network card.
   The light is blinking, indicating a network connection.
4. On the Exec monitor, select **Click to view Windows 11**.
5. Right-click **Start** and select **Settings**.
6. Select **Network & internet**.
   The diagram in Status page shows a connection to the network and internet.
7. (Optional) Ping each workstation on the network using their IP address.
   Each ping attempt now succeeds.