

Assignment 1

Build a Switch and Router Network Report

Packet Tracer Activity

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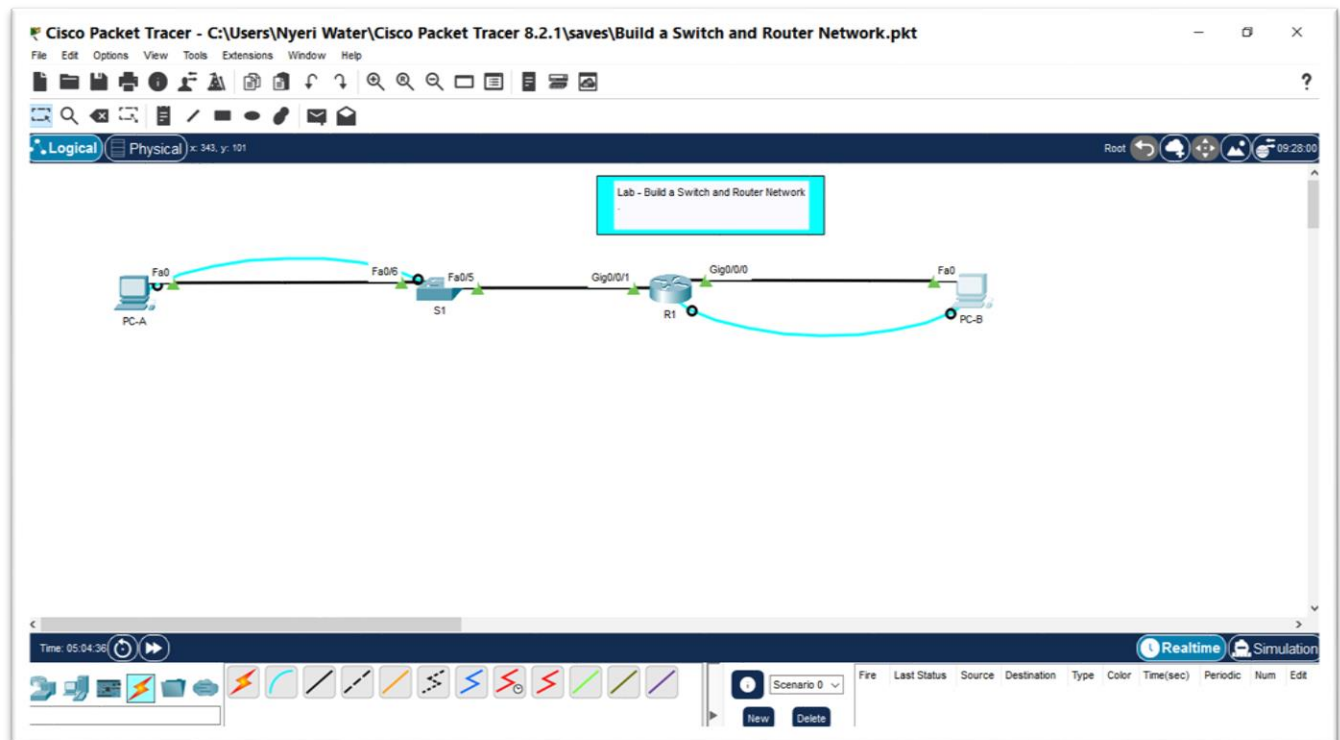
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INTRODCUTION

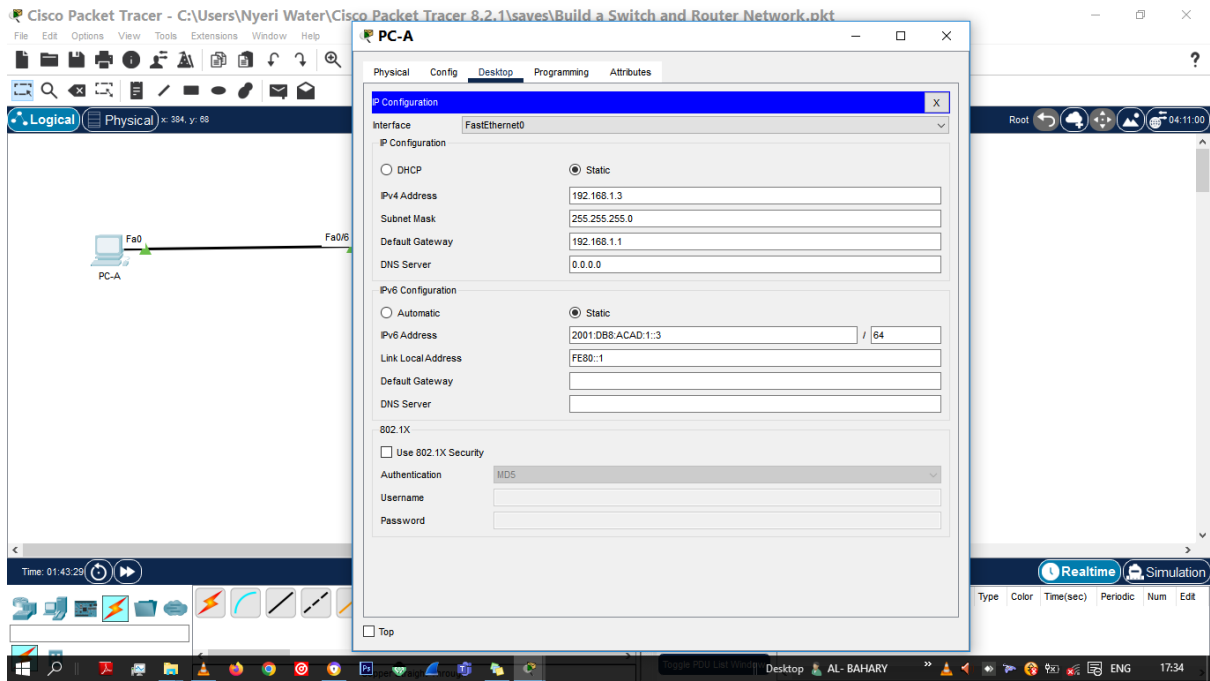
This is a report based on the Packet tracer Lab activity Build a Switch and Router Network. The activities involved were to design the topology of the network, to configure the devices with IP addresses and verify connectivity between the devices. The devices for the lab activity were the Cisco 4221 Router, the Cisco Catalyst 2960 Switch and two PCs with a terminal emulation Program.

Part A: DESIGN THE TOPOLOGY

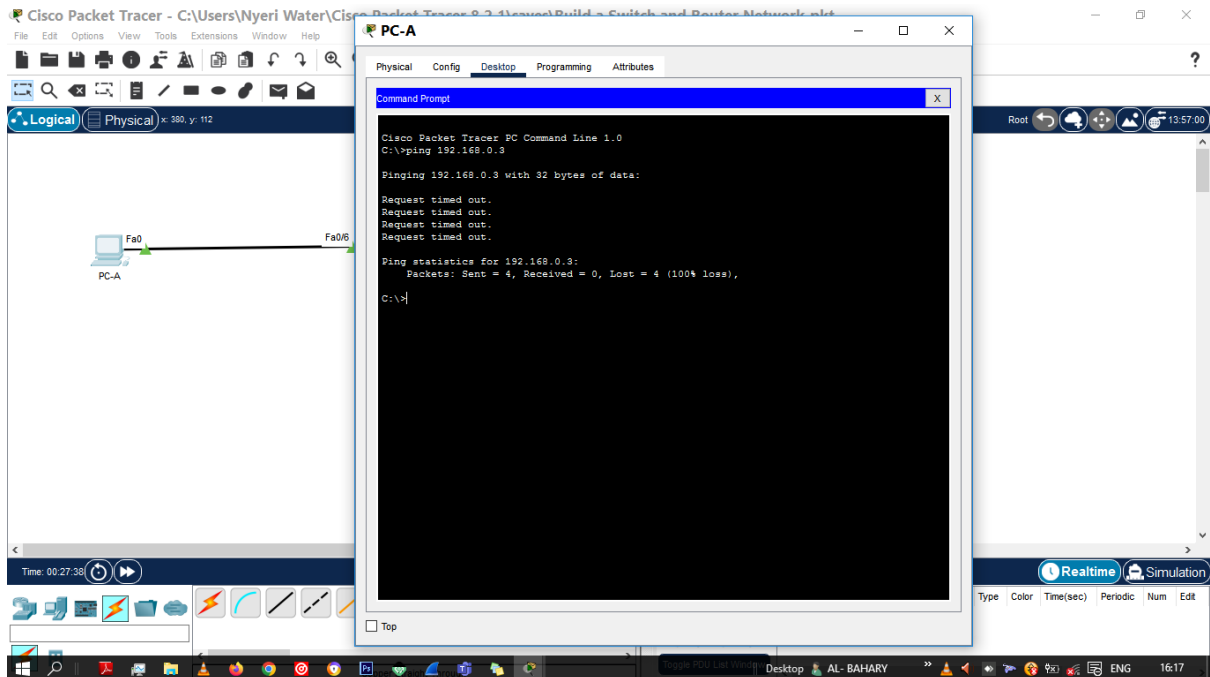
The first task was to cable the network to the required topology using the devices and cables provided.



The next part of the activity was to configure the devices. This involved configuring the two PCs with the IPV4 addresses, the IPV6 address, the subnet mask and the correct default-gateway according to the table.

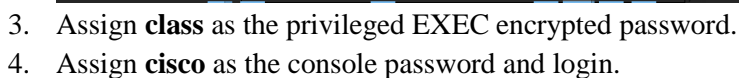


To test connectivity of the two PCs I performed a ping of PC-B from PC-A to which the result was not successful. This was because the router interfaces which acts as the default-gateway was not configured.



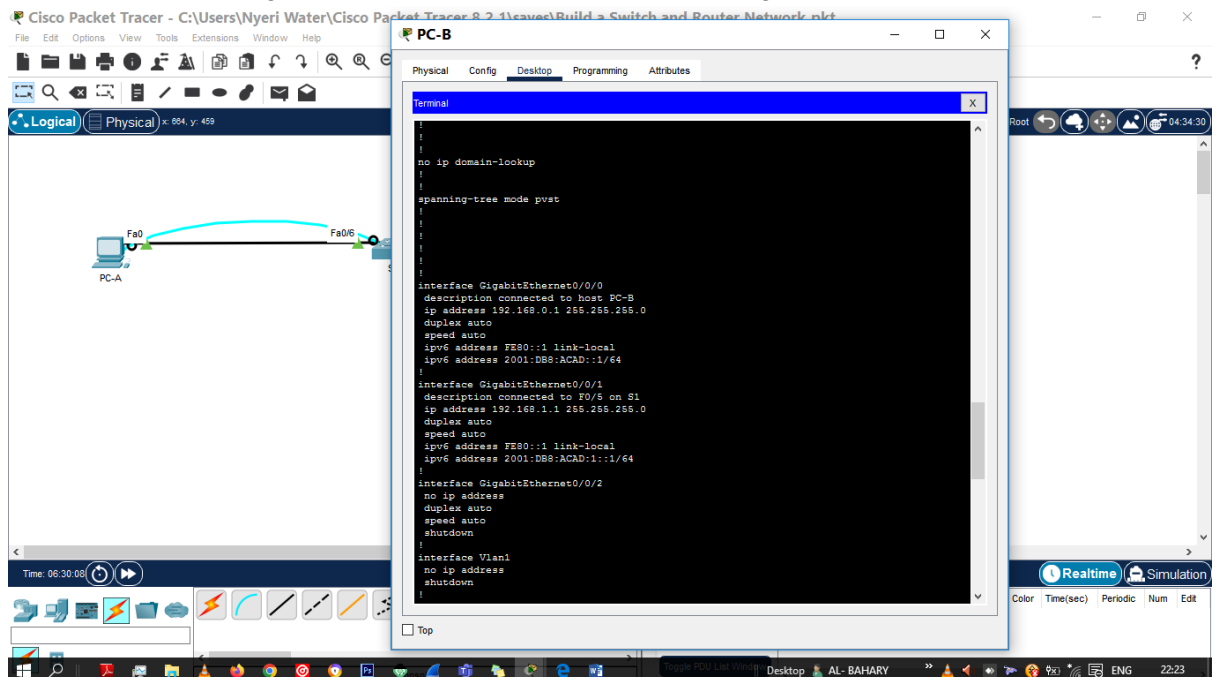
The steps taken to configure the basic router configurations are:

1. Assign a device name to the router. R1.
2. Disable DNS lookup to prevent the router from attempting to translate incorrectly entered commands as though they were host names.

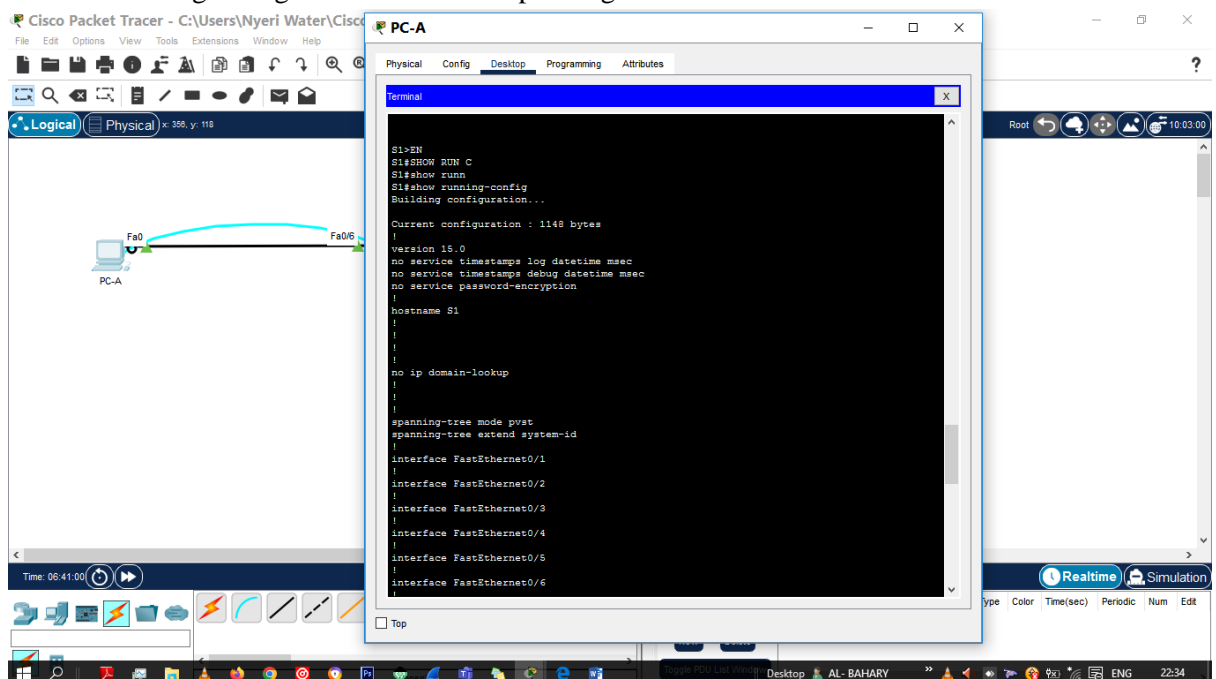


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9. Configure an interface description for each interface indicating which device is connected to it.
10. To enable IPv6 routing, enter the command IP v6 unicast-routing.



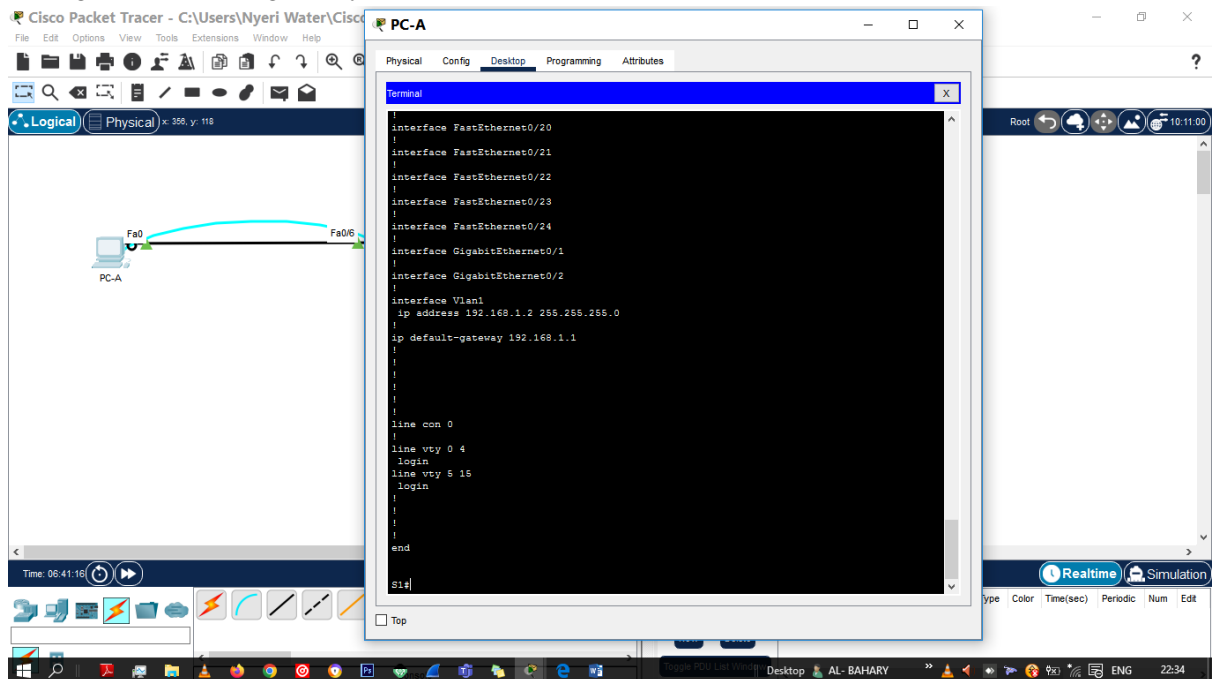
11. Set the clock on the router.
12. Save the running configuration to the startup configuration file.



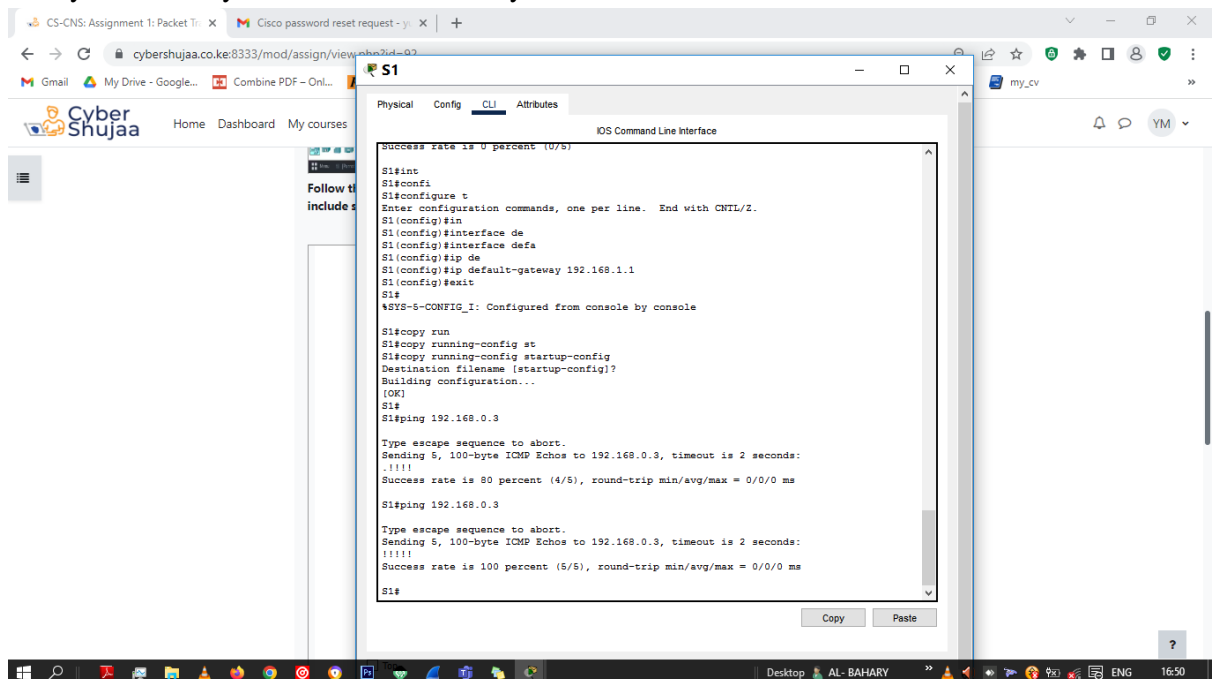
Part B (11): CONFIGURE THE SWITCH

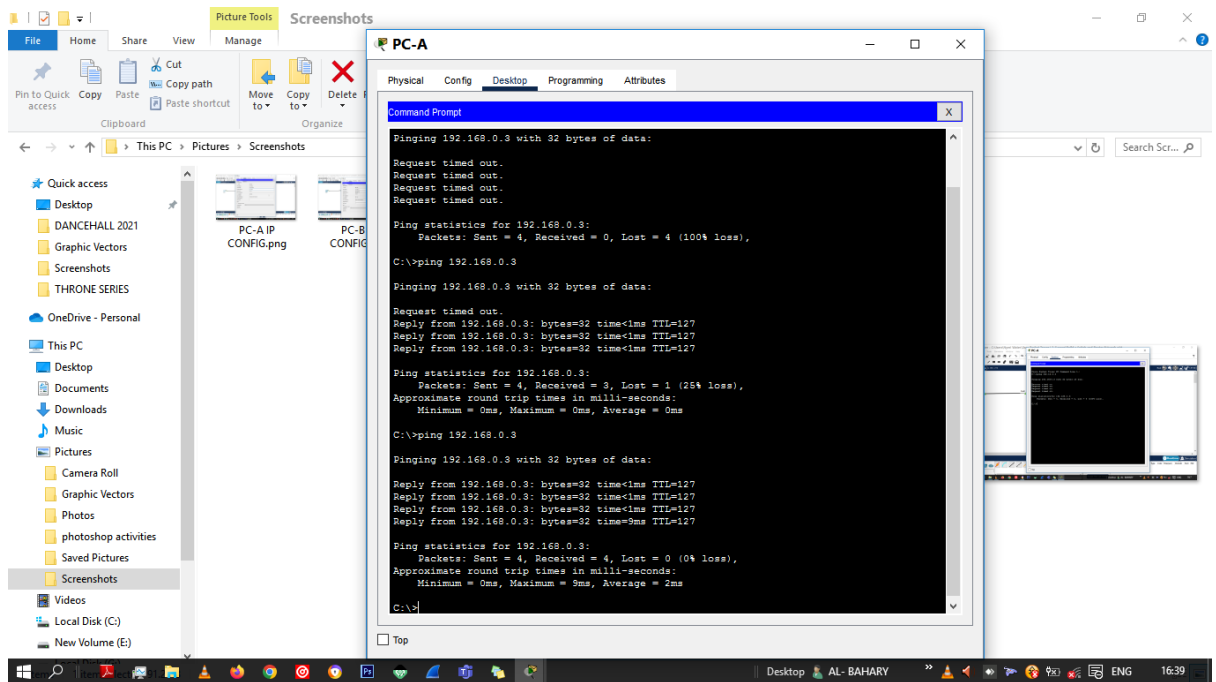
The steps taken to configure the basic router configurations are:

1. Assign a device name to the switch **S1**.
2. Disable DNS lookup to prevent the router from attempting to translate incorrectly entered commands as though they were host names.
3. Configure and activate the VLAN interface on the switch S1.
4. Configure the default gateway for the switch S1.



5. Verify connectivity end-to-end connectivity.

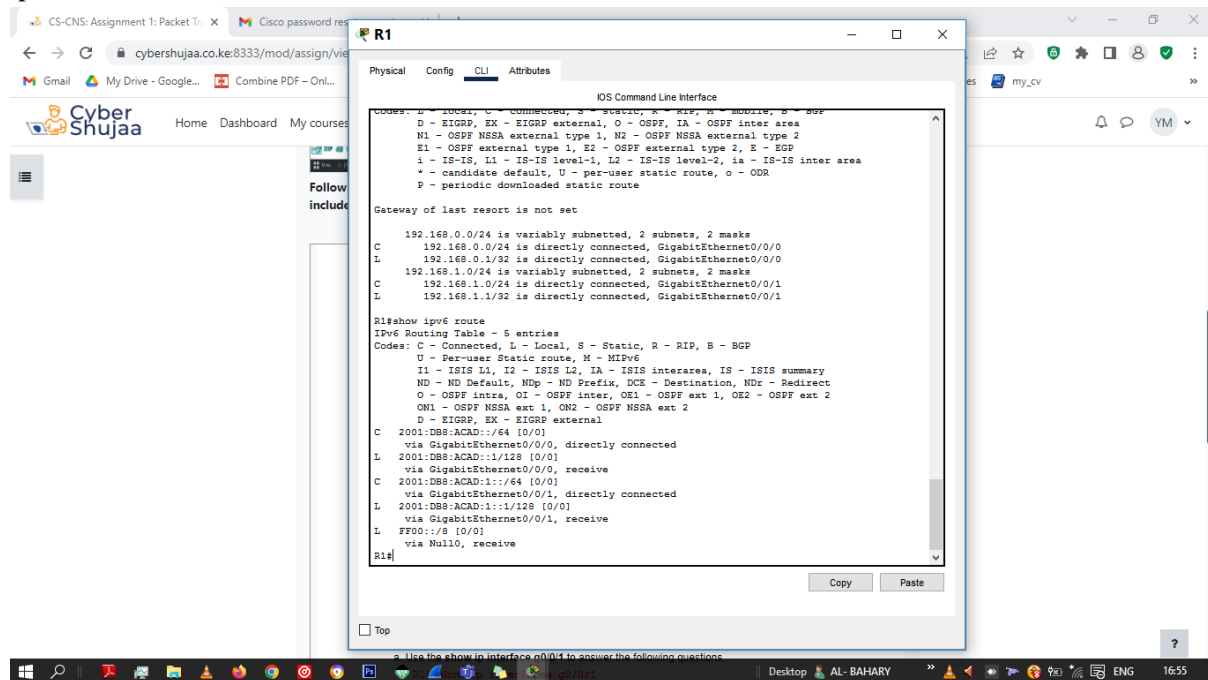


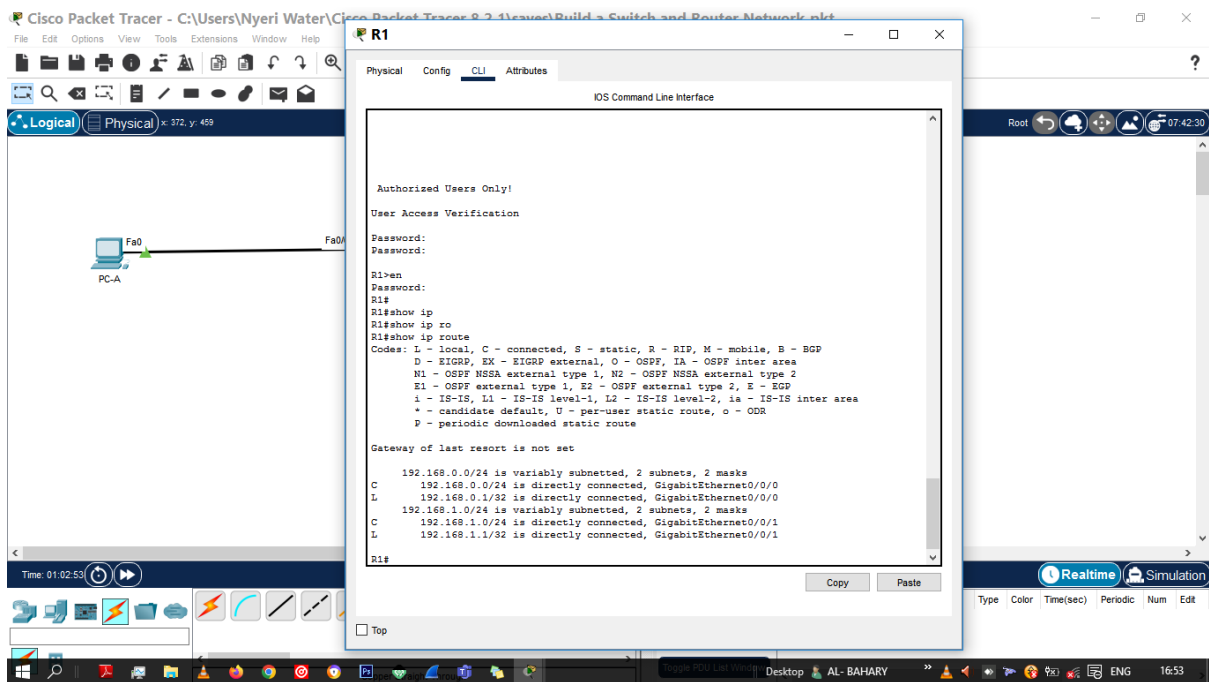


Both pings i.e. PC-B from S1 and PC-B from PC-A are successful.

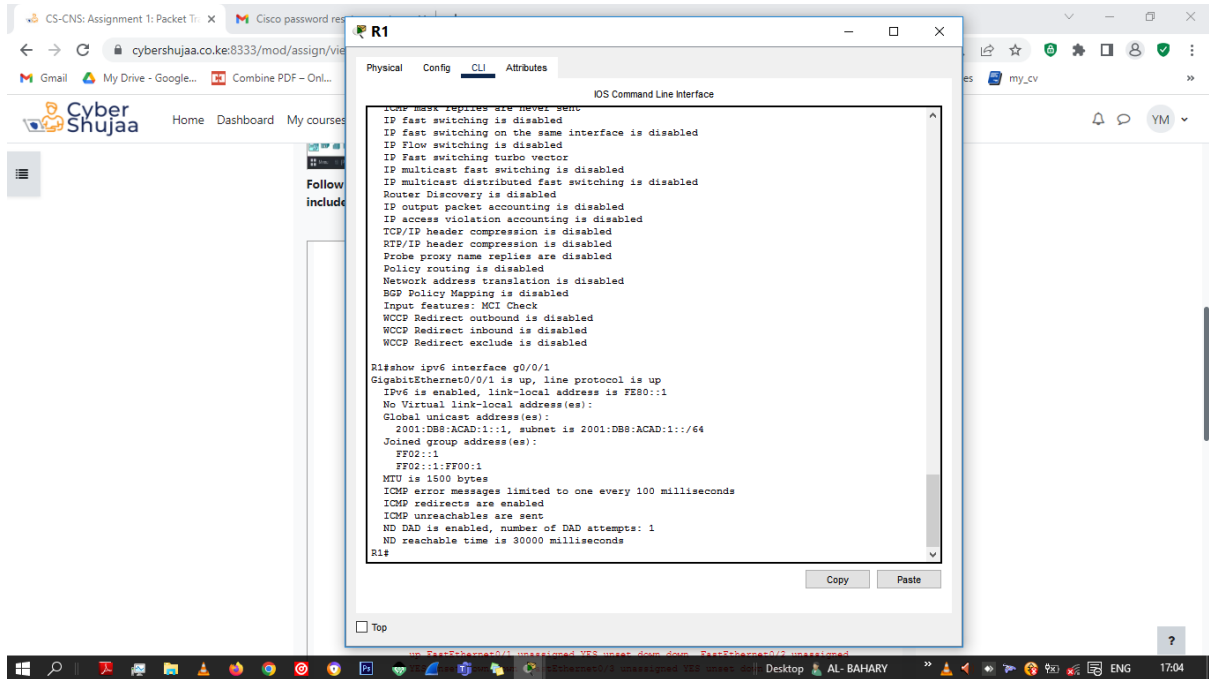
Part C: VERIFY CONNECTIVITY AND DISPLAY DEVICE INFORMATION

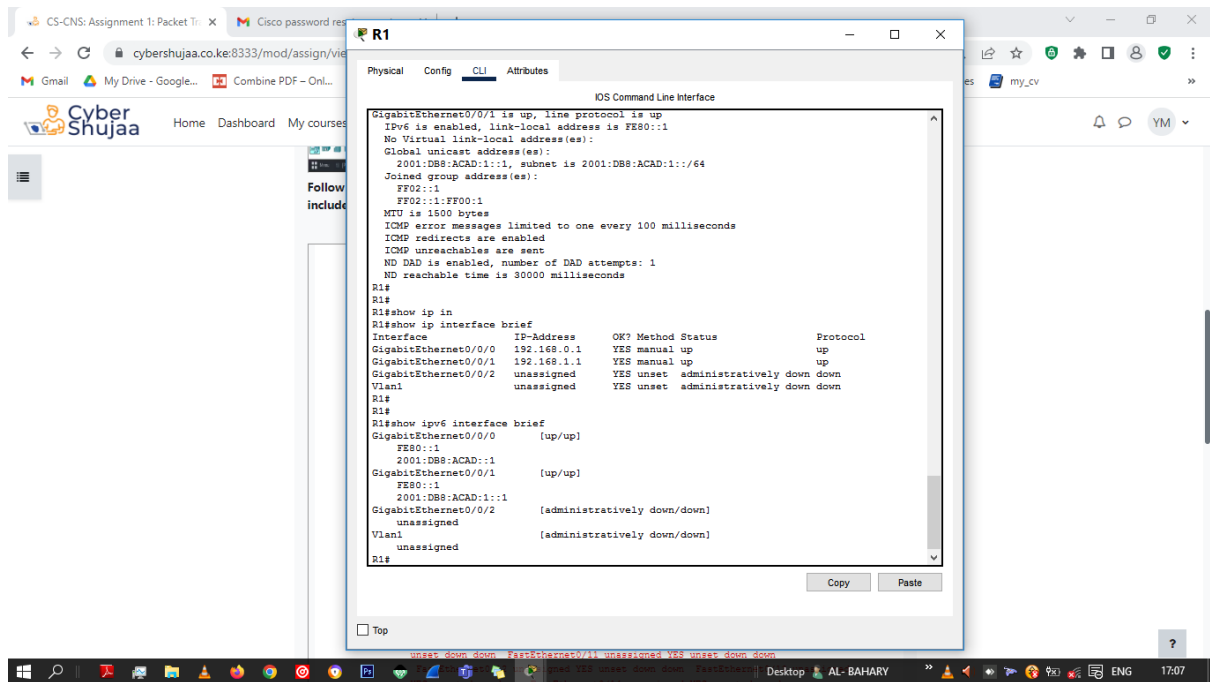
This last activity involves using the **Show** command to retrieve and verify interface and routing information from the router and switch. The **show ip route** and **show ipv6 route** command on the router R1 shows interfaces associated with the connected network and the codes used to interpret the ip route table.





We can also use the show ip interface brief to show brief information about an interface such as status, IP address Mac address.





CONCLUSION

This activity has enabled me in learning how to design and configure devices in a network. Configuring devices hostname, passwords and securing the console and VTY lines to prevent unauthorized access to the devices in the network. The use of password encryption to ensure passwords are safe from attackers. The use of the **show** and **show brief** command to verify and ensure configuration are correct and the ping to test connectivity. The activity has enabled me in learning basic device connectivity and security.