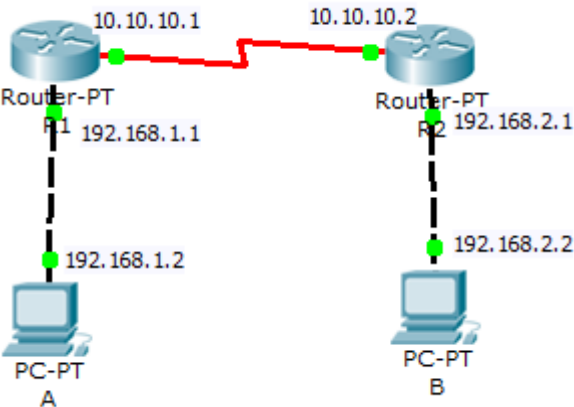
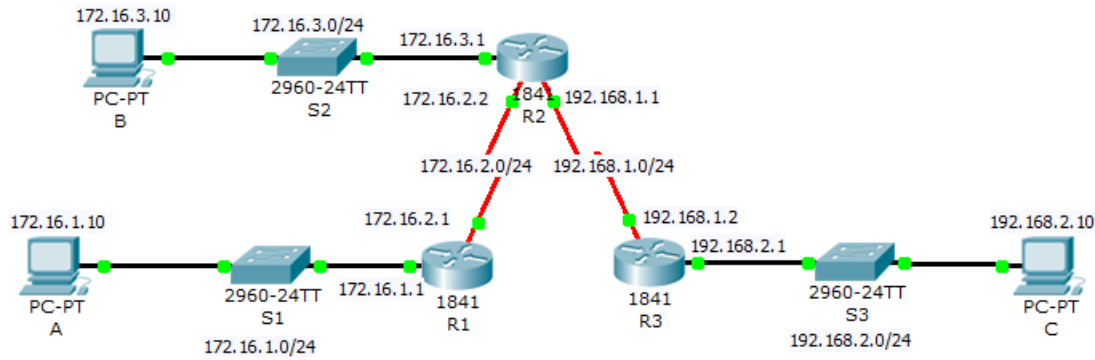


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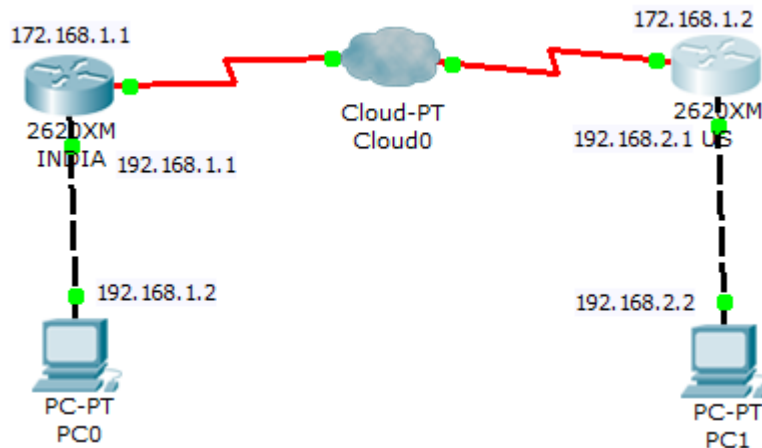
Sr. No.	AIM	Marks	Sign
1.	To Study the installation of Packet Tracer <ul style="list-style-type: none"> Steps of installation Shows where you use Router, Switch, End Devices..etc Difference between Router and PC. 		
2.	To Study Basic Router Command (Viewing, Saving, and Erasing Configurations) <ul style="list-style-type: none"> Explain about Router MODE Logging into a Router Using the Help and Editing Features Saving a Router Configuration Setting Your Passwords Setting the Hostname, Descriptions, IP Address, and Clock Rate. 		
3.	To Study configure a network with various topologies shown bellow. The following will be covered: <ul style="list-style-type: none"> Creating Static Routes Dynamic Routing with RIP Dynamic Routing with IGRP Figure will be used to configure all routers. 		

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1. Explain the term "Routing".
2. Explain the IP Routing Process.
3. Explain Static Routing with various command use in it.
4. Explain Default Routing.
5. What is Dynamic Routing? What types of protocol use in it explain them?

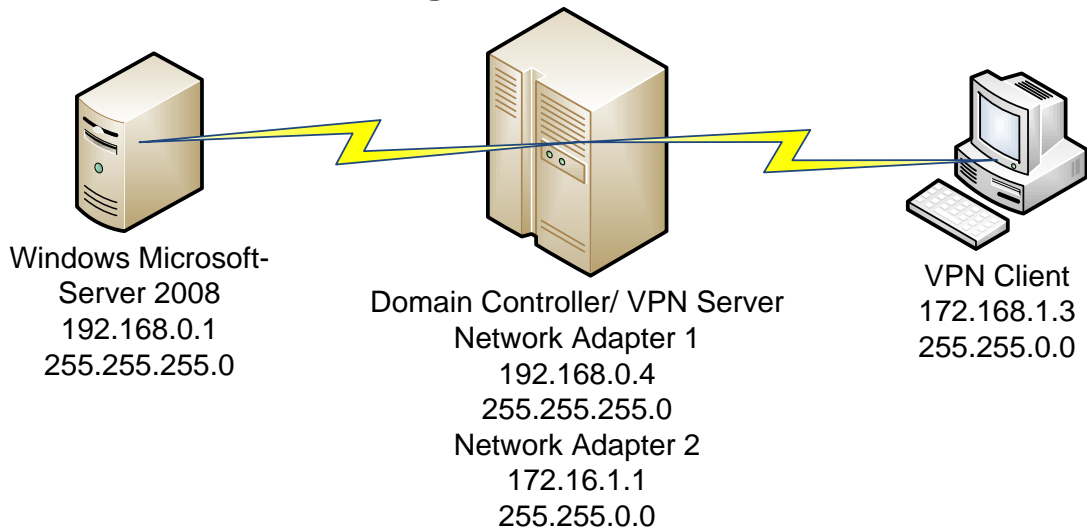
4. To study the configuring of routers with frame relay with dynamic mapping.



1. What is packet switching and explain packet formation and data flow reassembly.
2. Explain the processing in a packet switching.
3. On the basis of network type, method of packet forwarding.
4. Explain in brief the X.25 and Proc and Con of X.25.
5. Explain the architecture of X.25.
6. Explain X.75.
7. Explain SMDS components and what are the method for user to access and SMDS network? Explain.

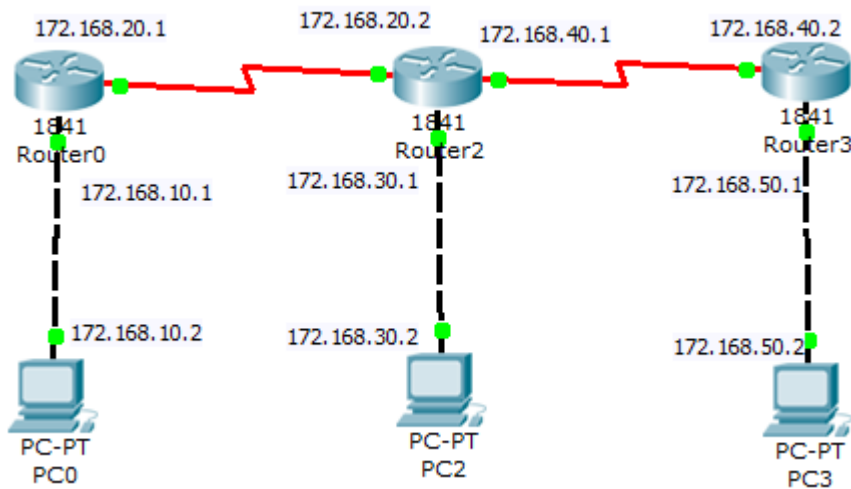
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5. To Study the configuration of VIRTUAL PRIVATE NETWORK connection via PPTP using VMware.

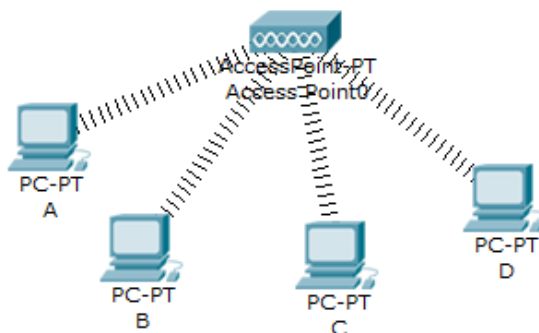


Note:- Take the snap shot step by step and explain it.

6. To study the configuring of router OSPF.

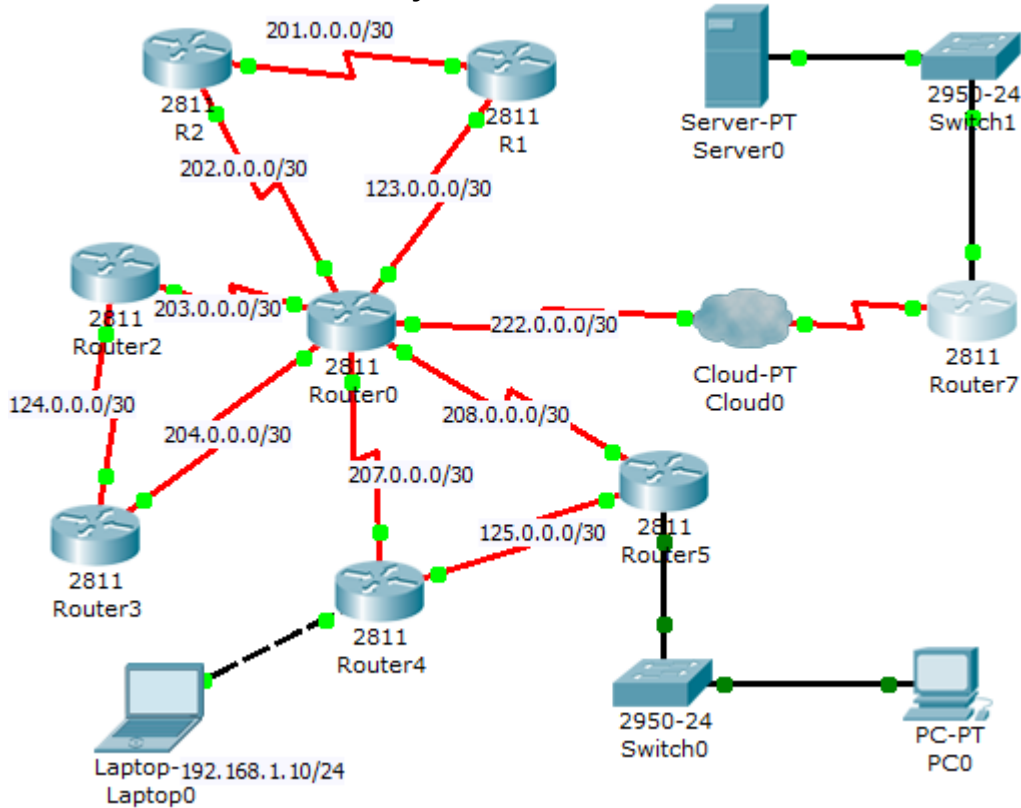


7. To Study the wifi com



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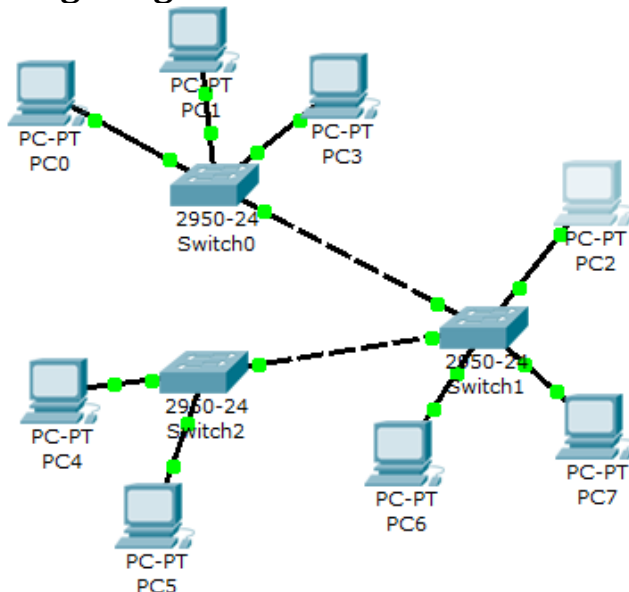
8. To make the configuration for topology using dynamic routing with EIGRP, Frame Relay.



9. Explain Socket Programming?
Write a TCP Client-Server Programming.

10. Write a UDP Client-Server Programming.

11. To study the configuring of VLAN.



PRACTICAL 2

To Study Basic Router Command (Viewing, Saving, and Erasing Configurations)

Logging into a Router

1. Press Return to connect to your router. This will put you into user mode.
2. At the Router> prompt, type a question mark (?).
3. Notice the –more– at the bottom of the screen.
4. Press the Enter key to view the commands line by line.
5. Press the spacebar to view the commands a full screen at a time.
6. You can type **q** at any time to quit.
7. Type **enable** or **en** and press Enter. This will put you into privileged where you can change and view the router configuration.
8. At the Router# prompt, type a question mark (?). Notice how many options are available to you in privileged mode.
9. Type **q** to quit.
10. Type **config** and press Enter.
11. Press Enter to configure your router using your terminal.
12. At the Router(config)# prompt, type a question mark (?), then **q** to quit, or hit the spacebar to view the commands. Type **interface eth0/0** or **int e0/0**, and press Enter. This will allow you to configure interface Ethernet 0.
13. At the Router(config-if)# prompt, type a question mark (?).
14. Type **int s0/0** or **interface s0/0** (same as the interface serial 0 command) and press Enter. This will allow you to configure interface serial 0. Notice that you can go from interface to interface easily.
15. Type **exit**, which will log you out of the router.

Using the Help and Editing Features

1. Log in to the router and go to privileged mode by typing `en` or `enable`.
2. Type a question mark (?).
3. Type `cl?` and then press Enter. Notice that you can see all the commands
4. that start with "cl".
5. Type `clock ?` and press Enter.

Notice the difference between numbers 3 and 4. Number 3 has you type letters with no space and a question mark, which will give you all the commands that start with "cl". Number 4 has you type a command, space, and question mark. By doing this, you will see the next available commands.

6. Set the router's clock by typing `clock ?` and following the help screens;
7. set the router's time and date.
8. Type `clock ?`.
9. Type `clock set ?`.
10. Type `clock set 10:30:30 ?`.
11. Type `clock set 10:30:30 14 March ?`.
12. Type `clock set 10:30:30 14 March 2001`.
13. Press Enter.
14. Type `show clock` to see the time and date.
15. From privileged mode, type `show access-list 10`. Don't press Enter.
16. Press Ctrl+A. This takes you to the beginning of the line.
17. Press Ctrl+E. This should take you back to the end of the line.
18. Press Ctrl+A, then Ctrl+F. This should move you forward one character.
19. Press Ctrl+B, which will move you back one character.
20. Press Return, then press Ctrl+P. This will repeat the last command.
21. Press the up arrow on your keyboard. This will also repeat the last command.
22. Type `sh history`. This shows you the last 10 commands entered.
23. Type `terminal history size ?`. This changes the history entry size.
24. Type `sh run`, then press your Tab key. This will finish typing the command for you.
25. Type `sh star`, then press your Tab key. This will finish typing the command For you.

Saving a Router Configuration

1. Log into the router and go into privileged mode by typing **en** or **enable**, then press Enter.
2. To see the configuration stored in NVRAM, type **sh start** and press
3. Tab and Enter, or type **show startup-config** and press Enter. However,
4. if no configuration has been saved, you will get an error message.
5. **3.** To save a configuration to NVRAM, which is known as startup-config,
6. you can do one of the following:
 - a. Type **copy run start** and press Enter.
 - b. Type **copy running**, press Tab, type **start**, press Tab, and press Enter.
 - c. Type **copy running-config startup-config** and press Enter.
7. Type **sh start**, press tab, then press Enter.
8. Type **sh run**, press tab, then press Enter.
9. Type **erase start**, press Tab, then press Enter.
10. Type **sh start**, press Tab, then press Enter. You should get an error message.
11. Type **reload**, then press Enter. Acknowledge the reload by pressing
12. Enter. Wait for the router to reload.
13. Say no to entering setup mode, or just press Ctrl+C.

Setting Your Passwords

1. Log into the router and go into privileged mode by typing **en** or **enable**.
2. Type **config t** and press Enter.
3. Type **enable ?**.
4. Set your enable secret password by typing **enable secret *password*** (the word *password* should be your own personalized password) and pressing Enter. Do not add the command password after the command secret (this would make your password the word *password*). An example would be **enable secret todd**.
5. Now let's see what happens when you log all the way out of the router and then log in. Log out by pressing Ctrl+Z, and then type **exit** and press Enter. Go to privileged mode. Before you are allowed to enter privileged mode, you will be asked for a password. If you successfully enter the secret password, you can proceed.
6. Remove the secret password. Go to privileged mode, type **config t**, and press Enter. Type **no enable secret** and press Enter. Log out and then in again, and now you should not be asked for a password.
7. One more password used to enter privileged mode is called enable password. It is an older, less secure password and is not used if an enable secret password is set. Here is an example of how to set it:

config t

enable password todd1

8. Notice that the enable secret and enable passwords are different. They cannot be the same.
9. Type **config t** to be at the right level to set your console and auxiliary passwords, then type **line ?**.
10. Notice the output for the line commands is auxiliary, vty, and console. You will set all three.
11. To set the Telnet or vty password, type **line vty 0 4** and then press Enter. The 0 4 is the five available virtual lines used to connect with Telnet. If you have an enterprise IOS, the number of lines may vary. Use the question mark to determine the last line number available on your router.

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12. The next command is used to set the authentication on or off. Type **login** and press Enter to prompt for a user-mode password when telnetting into the router. You will not be able to telnet into a router if the password is not set.

13. One more command you need to set for your vty password is **password**. Type **password *password*** to set the password. (*Password* is your password.)

14. Here is an example of how to set the VTY passwords:

Config t

Line vty 0 4

Login

Password todd

15. Set your auxiliary password by first typing **line auxiliary 0** or **line aux 0**.

16. Type **Login**.

17. Type **password *password***.

18. Set your console password by first typing **line console 0** or **line con 0**.

19. Type **login**.

20. Type **password *password***. Here is an example of the last two commands:

Config t

Line con 0

Login

Password todd1

Line aux 0

Login

Password todd

21. You can add the command **Exec-timeout 0 0** to the console 0 line. This will stop the console from timing out and logging you out. The command will now look like this:

config t

line con 0

login

password todd2

exec-timeout 0 0

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22.Set the console prompt to not overwrite the command you're typing with console messages by using the command logging synchronous.

config t

line con 0

logging synchronous

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Setting the Hostname, Descriptions, IP Address, and Clock Rate

1. Log into the router and go into privileged mode by typing **en** or **enable**.

2. Set your hostname on your router by using the hostname command.

Notice that it is one word. Here is an example of setting your hostname:

```
Router#config t
```

```
Router(config)#hostname RouterA
```

```
RouterA(config)#
```

Notice that the hostname of the router changed as soon as you pressed Enter.

3. Set a banner that the network administrators will see by using the banner command.

4. Type **config t, banner ?**.

5. Notice that you can set four different banners. In this course we are only interested in the login and Message of the Day (MOTD) banners.

6. Set your MOTD banner, which will be displayed when a console, auxiliary, or Telnet connection is made to the router by typing

```
config t
```

```
banner motd #
```

```
This is an motd banner
```

```
#
```

7. The preceding example used a # sign as a delimiting character. This tells the router when the message is done. You cannot use the delimiting character in the message.

8. You can remove the MOTD banner by typing

```
config t
```

```
no banner motd
```

9. Set the login banner by typing

```
config t
```

```
banner login #
```

```
This is a login banner
```

```
#
```

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10. The login banner will display immediately after the MOTD but before the user-mode password prompt. Remember that you set your user-mode passwords by setting the console, auxiliary, and vty line passwords.

11. You can remove the login banner by typing

```
config t
```

```
no banner login
```

12. You can add an IP address to an interface with the IP address command. You need to get into interface configuration first; here is an example of how you do that:

```
config t
```

```
int e0 (you can use int Ethernet 0 too)
```

```
ip address 1.1.1.1 255.255.0.0
```

```
no shutdown
```

Notice the IP address (1.1.1.1) and subnet mask (255.255.0.0) are configured on one line. The no shutdown (or no shut for short) command is used to enable the interface. All interfaces are shut down by default.

13. You can add identification to an interface by using the description command. This is useful for adding information about the connection. Administrators only see this, not users.

Here is an example:

```
config t
```

```
int s0
```

```
ip address 1.1.1.2 255.255.0.0
```

```
no shut
```

```
description Wan link to Miami
```

14. You can add the bandwidth of a serial link as well as the clock rate when simulating a DCE WAN link. Here is an example:

```
config t
```

```
int s0
```

```
bandwidth 64
```

```
clock rate 64000
```