Experiment 7

Aim: To design a network with routers, hosts and simulate dynamic routing algorithm using Cisco packet tracer.

Theory:

Dynamic routing is all about configuring a network using dynamic routing protocols. Dynamic Routing Protocol is divided in to two main parts.

> 1.Interior Gateway Protocol

> 2.Exterior Gateway Protocol

Interior Gateway Protocol is an autonomous system and handled by only one admin. this protocol is also divide into two parts,

> 1. Distant Vector Protocols(Bellman-Ford Algorithm) - distance is measured by `hop count` and use for simple networks

> 2. Link State Protocol(Dijkstra Algorithm) - this uses some other information like neighbour router info and this is best for complex network designs

Output:

Main:
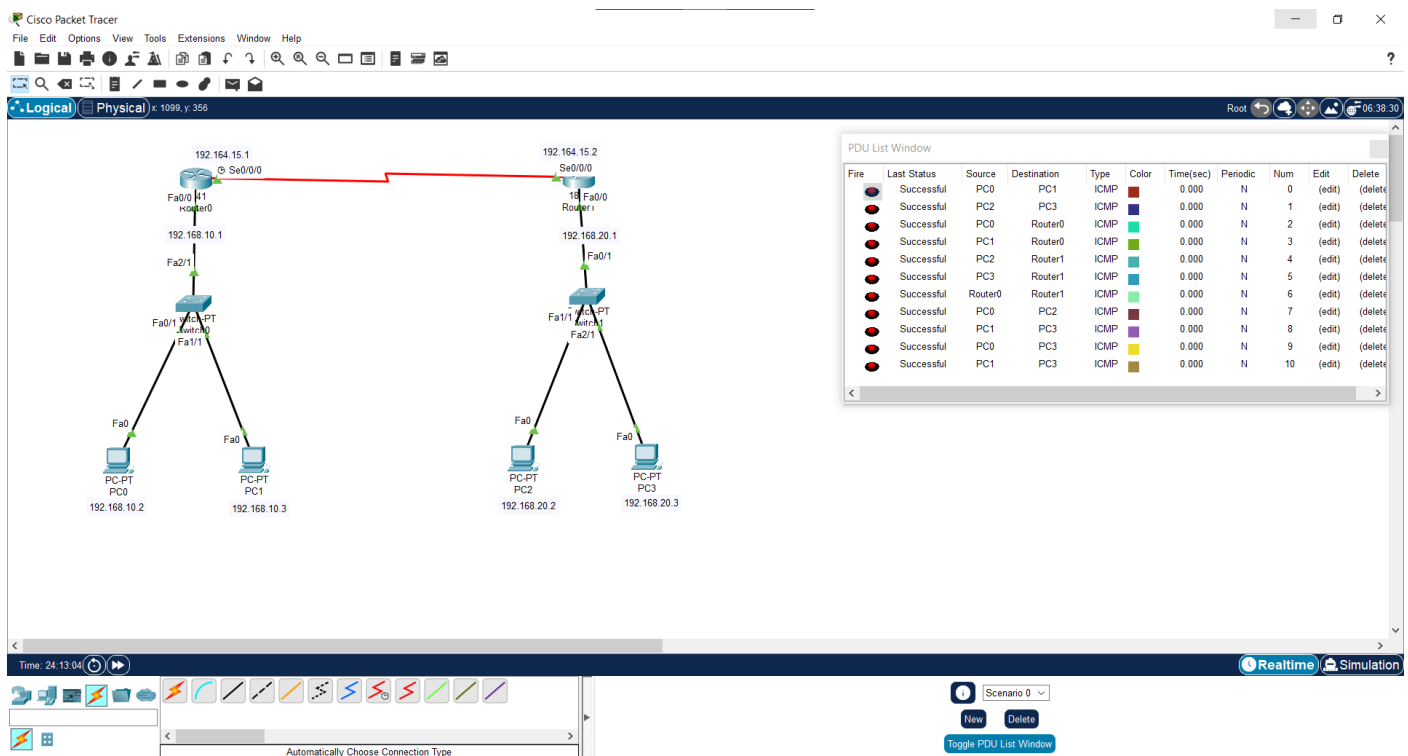
Router CLI Configuration:

Physical　　Config　　CLI　　Attributes

IOS Command Line Interface

```
Router>enable
Router#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#interface fastethernet 0/0
Router(config-if)#ip address 192.168.20.1 255.255.255.0
Router(config-if)#no shutdown

Router(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up

Router(config-if)#exit
Router(config)#interface serial 0/0/0
Router(config-if)#ip address 192.164.15.2 255.255.255.0
Router(config-if)#no shutdown

Router(config-if)#
%LINK-5-CHANGED: Interface Serial0/0/0, changed state to up

Router(config-if)#exit
Router(config)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/0/0, changed state to up

Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console

Router#write
Building configuration...
[OK]
Router#
Router#
Router#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#router rip
Router(config-router)#network 192.168.20.0
Router(config-router)#network 192.168.10.0
Router(config-router)#network 192.164.15.0
Router(config-router)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/0/0, changed state to down
```

PC IPv4 Configuration:

Interface　　FastEthernet0

IP Configuration

○ DHCP　　　　　　　● Static

IPv4 Address	192.168.20.2
Subnet Mask	255.255.255.0
Default Gateway	192.168.20.1
DNS Server	0.0.0.0

Conclusion: