COMPUTER NETWORKS LABORATORY

By:
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PES2201800368
5 'A'

WEEK – 6- Designing and Simulation of Network Topology using Cisco Packet Tracer

Date: 28/10/2020

Objectives:

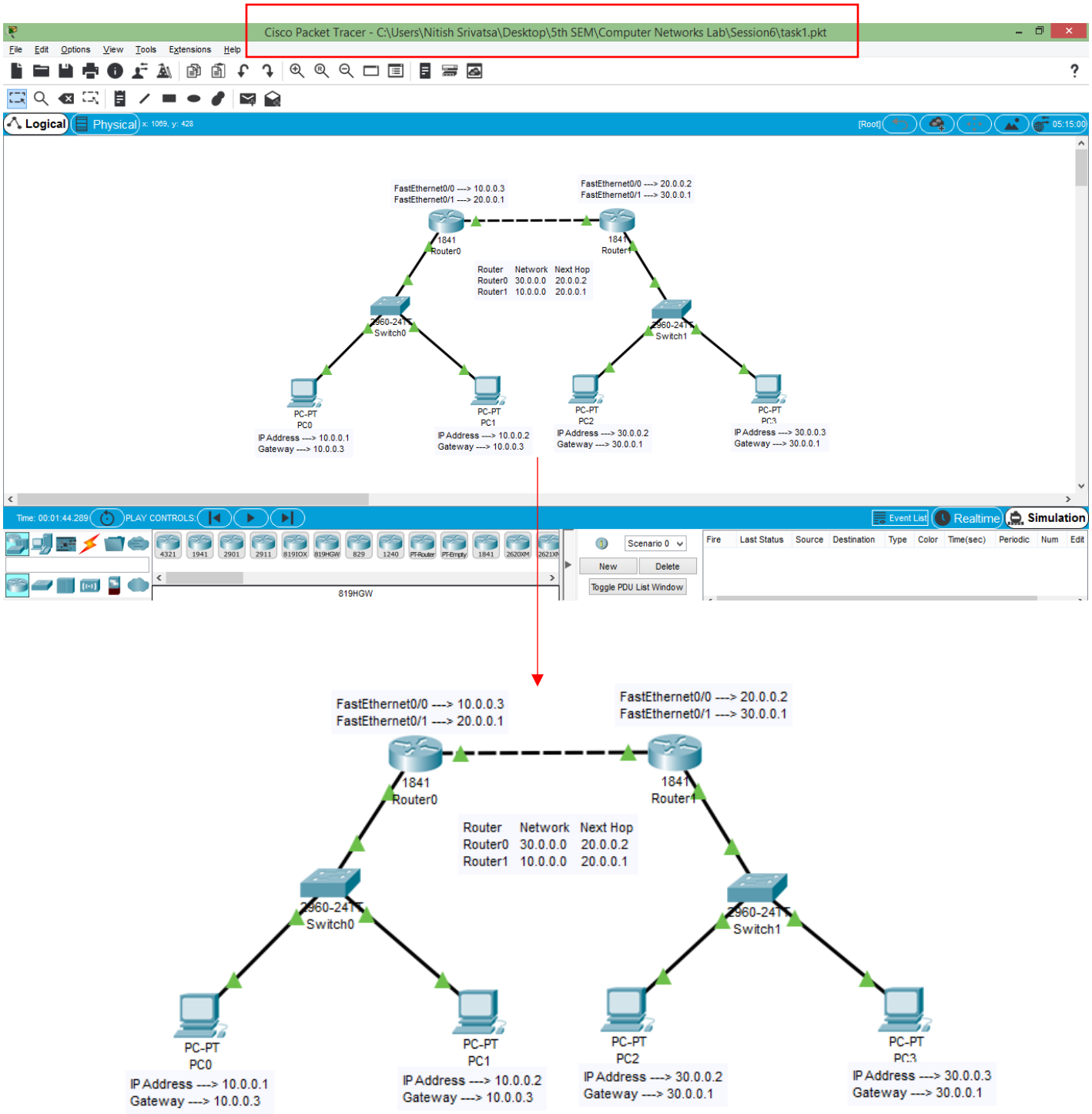
- To understand the purpose of Cisco Packet Tracer.
- To navigate, choose network and end devices and customize them.
- To interconnect devices and configure them using simple interface.
- To become familiar with building topologies in Packet Tracer.
- To simulate data interactions traveling through a network.

Task 1 (Demo) :

Execution Procedure:

Step 1: Design a network topology with desktops, switches and routers similar to the network depicted in the above diagram.
Step 2: Configure the PCs and routers with the details provided above.
Step 3: Send a simple PDU from any PC on network 10.0.1.0 to any other PC on other network 10.0.3.0 and vice-versa.
Step 4: Simulate the network and observe the packet flow from one network to other.

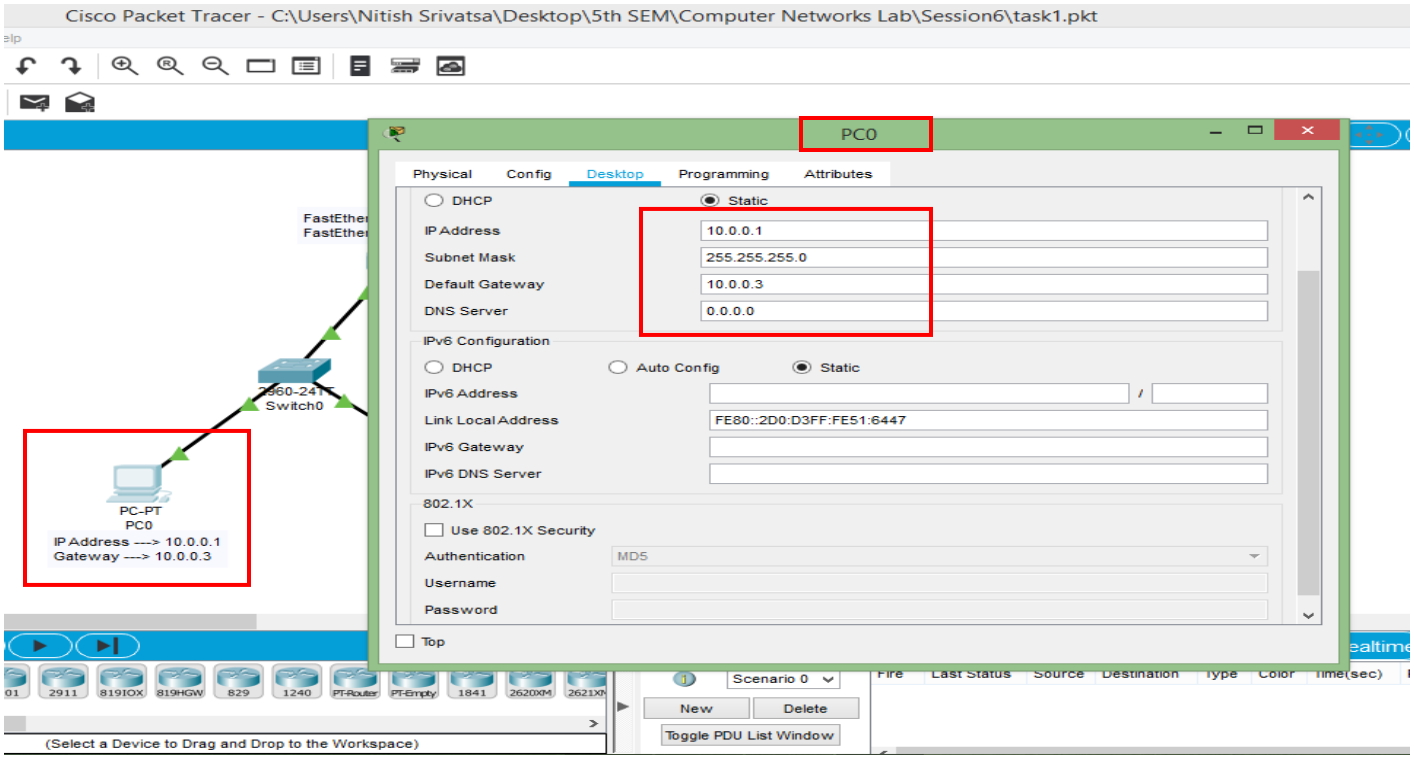
Step 1: Network Topology: Created using Cisco Packet Tracer



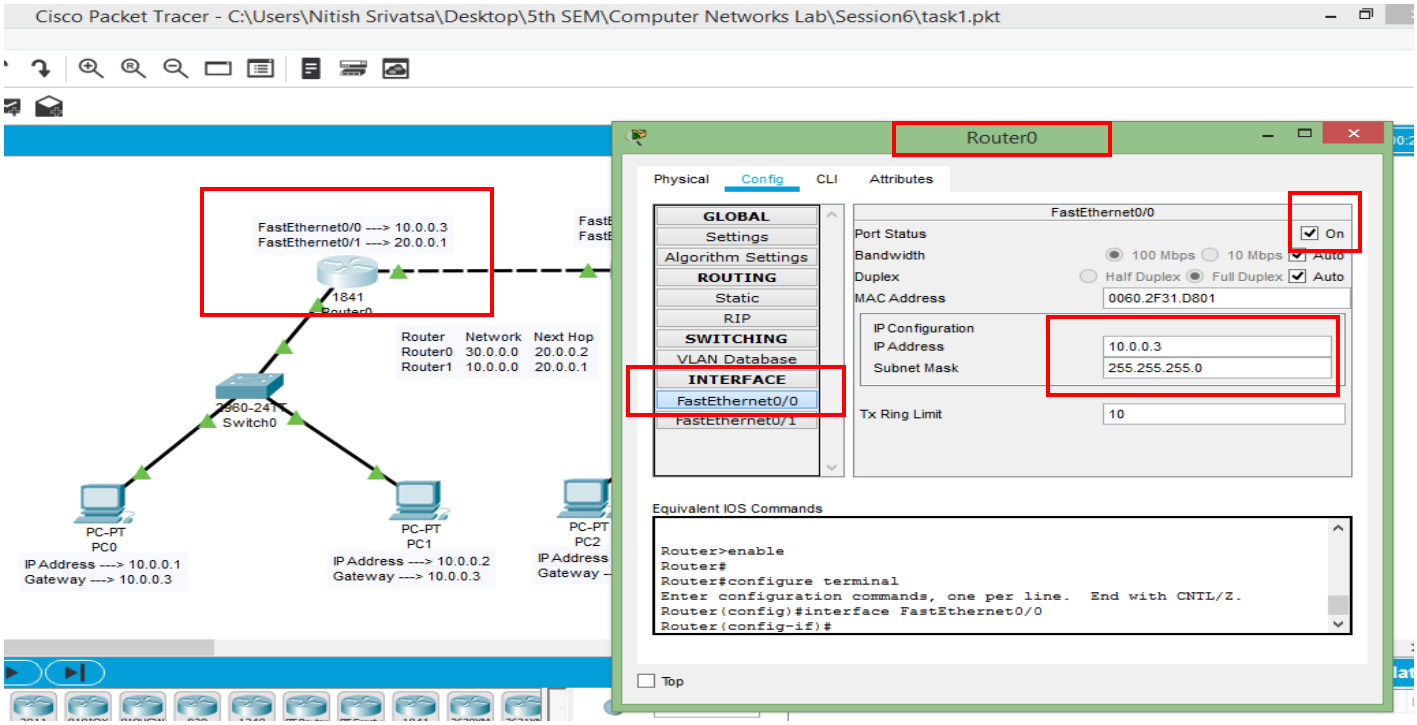
Step 2: Configuring the PCs and routers:-

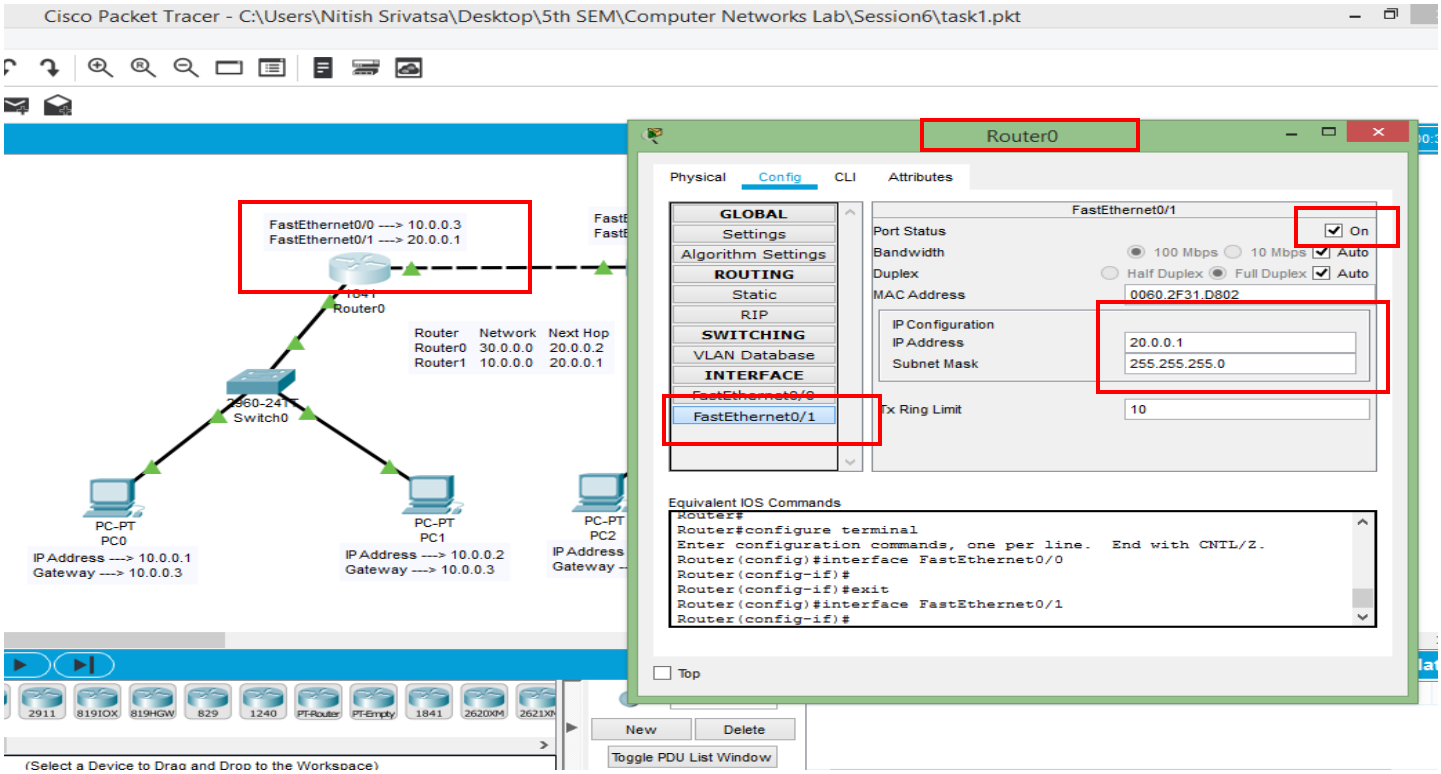
All the configurations made to the PCs and routers are shown in boxes next to each PC or router in the above topology.

PROCEDURE OF HOW THEY ARE CONFIGURED FOR A PC:

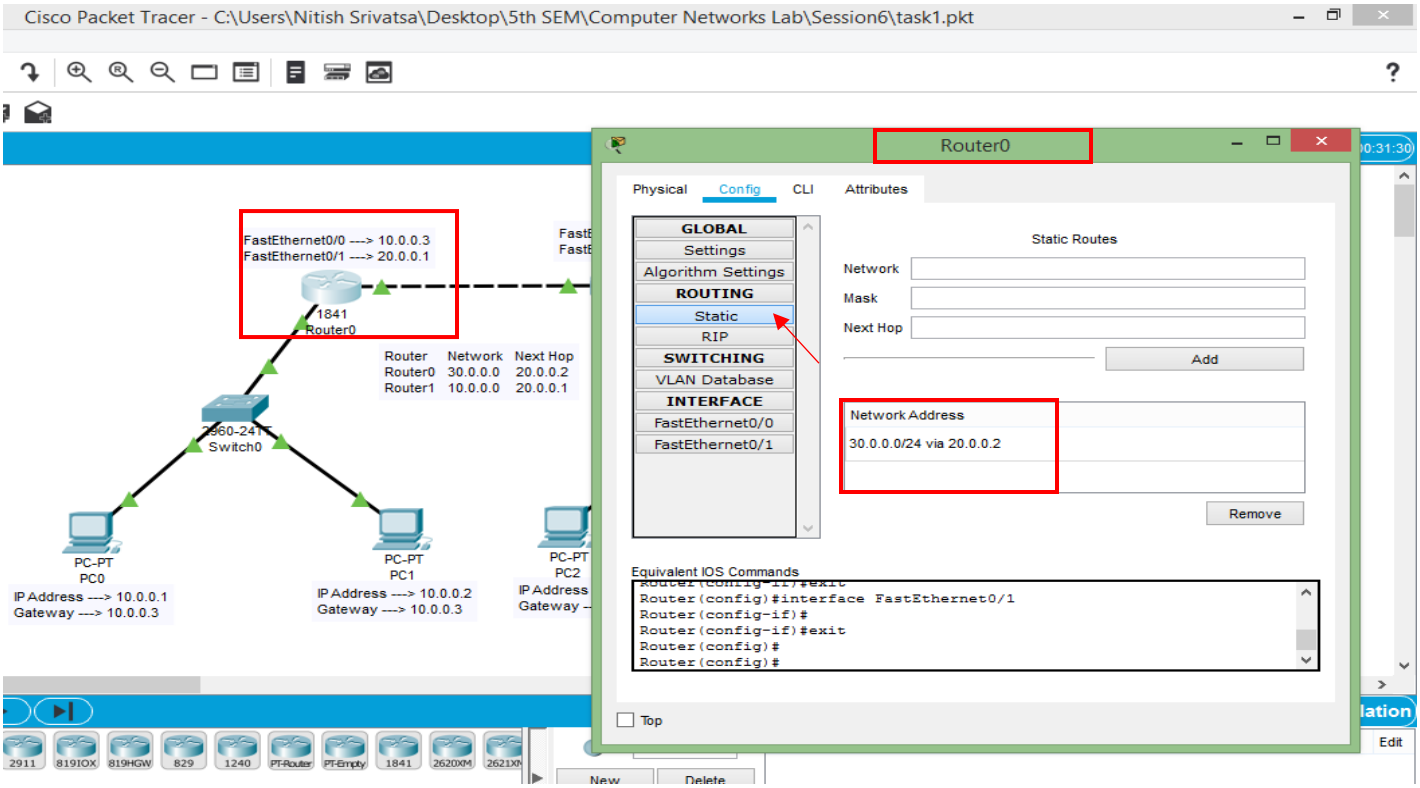


PROCEDURE OF HOW IP ADDRESS AND ROUTING TABLE ENTRIES ARE CONFIGURED FOR A ROUTER:





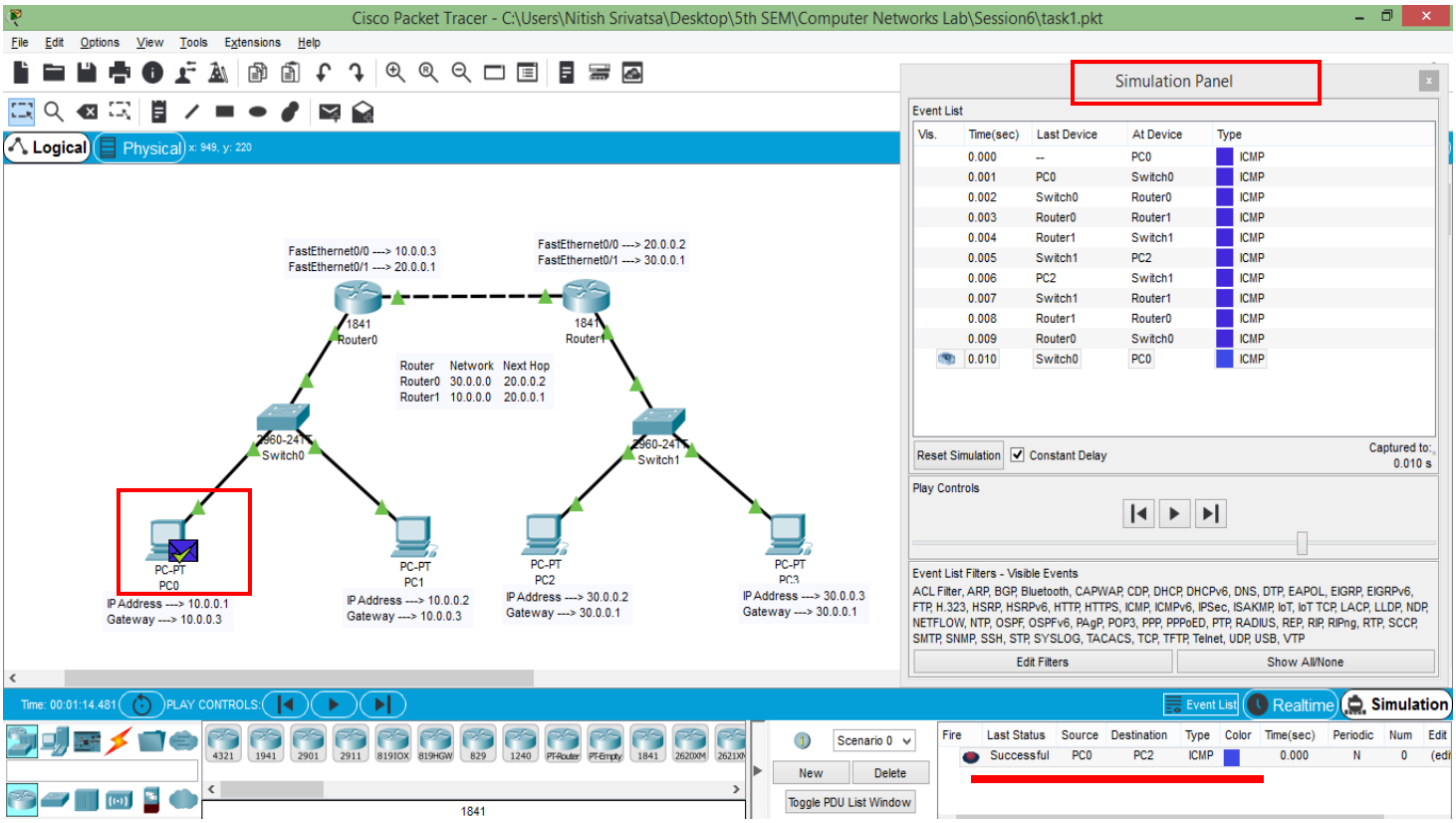
ROUTING TABLE ENTRY FOR ROUTER 0:



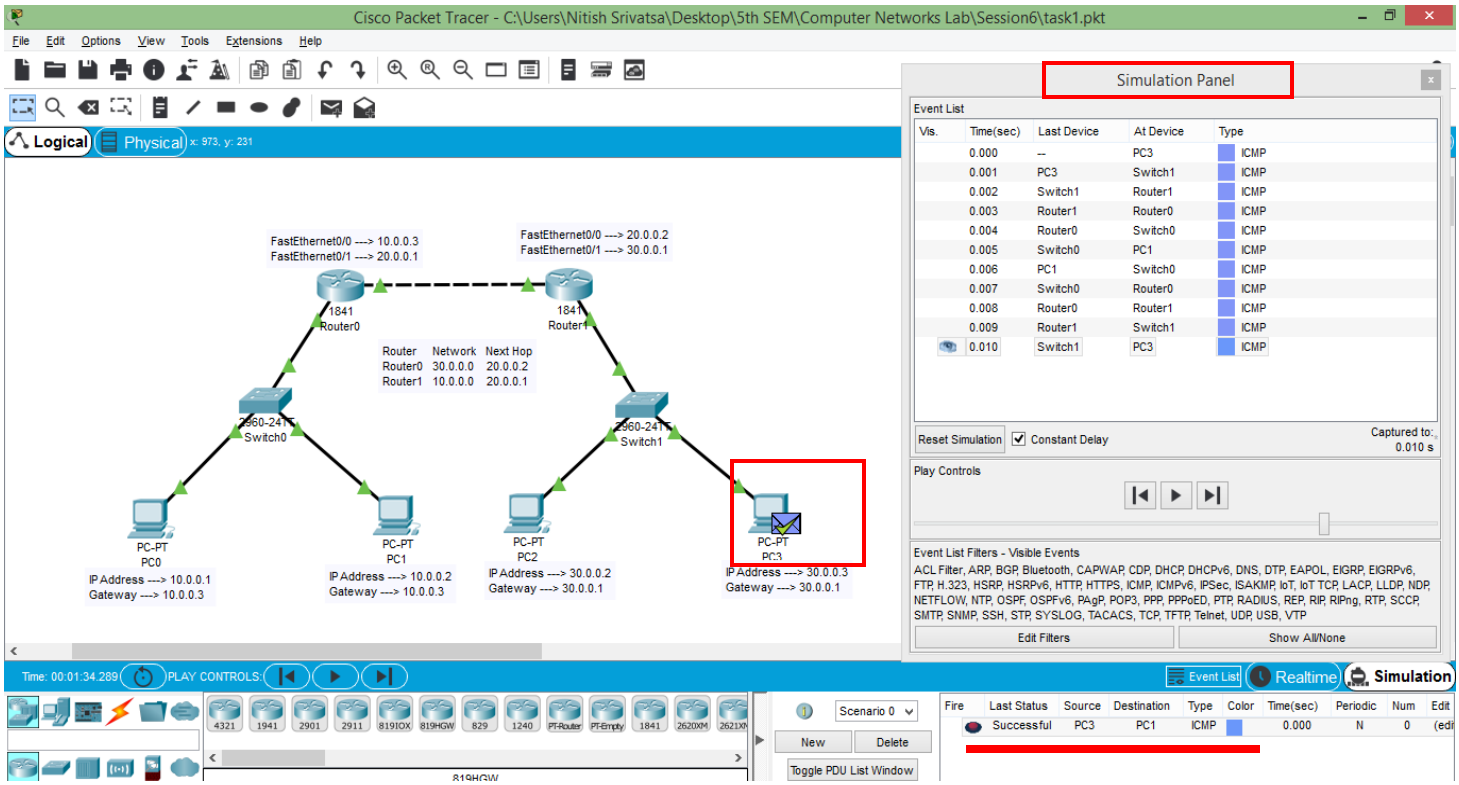
Similar procedure is followed for all the PCs and routers.

Step 3: Send a simple PDU from any PC on network 10.0.1.0 to any other PC on other network 10.0.3.0 and vice-versa.
Step 4: Simulate the network and observe the packet flow from one network to other.

Eg.1) SENDING A PACKET FROM PC0 to PC2:



Eg .2) SENDING A PACKET FROM PC3 to PC1:



TASK 2 (MANDATORY FOR WEEK-6):

Execution Procedure:

Step 1: Design a network topology with desktops, switches and routers similar to the network depicted in the above diagram.

Step 2: Configure the PCs and routers with the details provided above.

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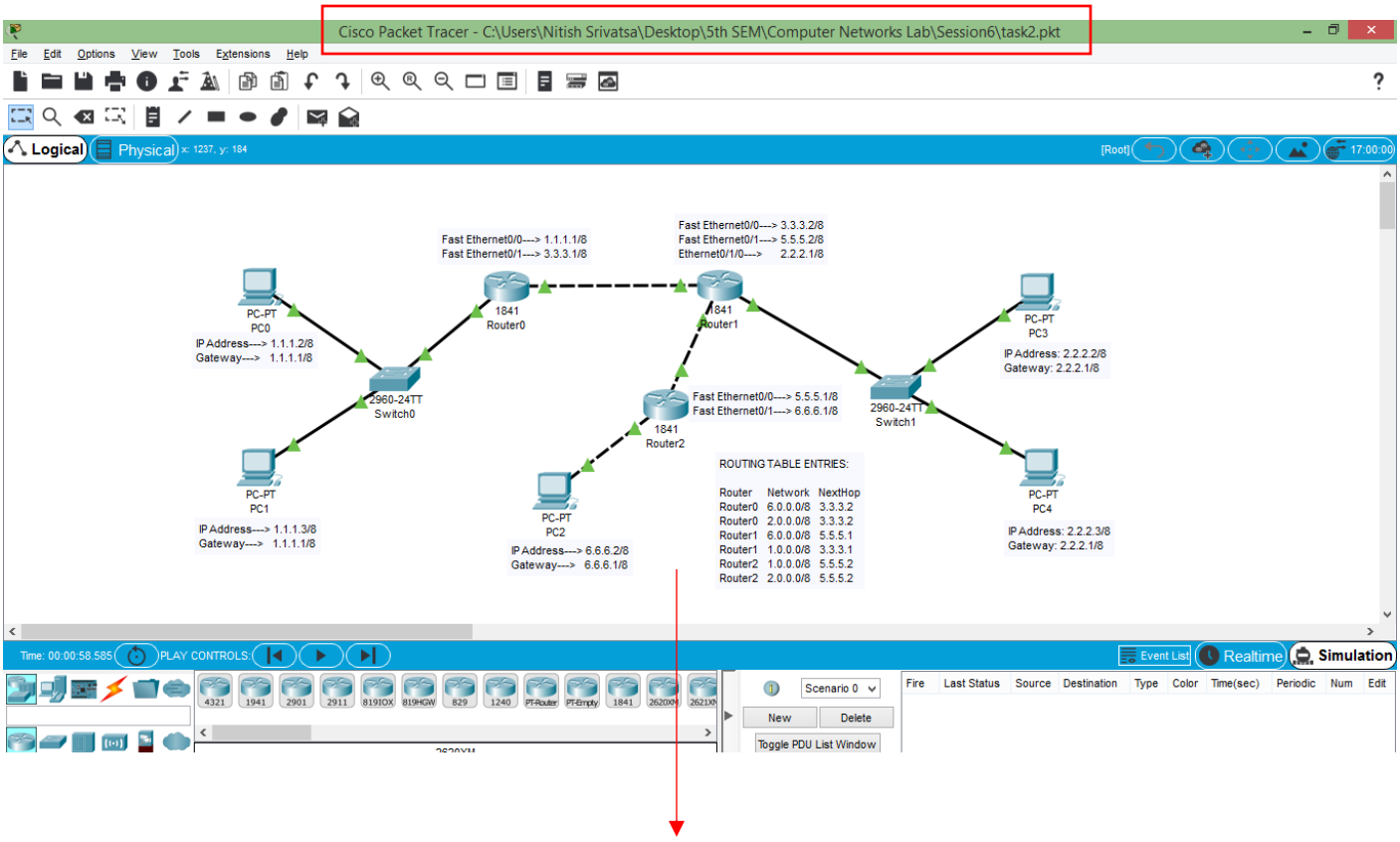

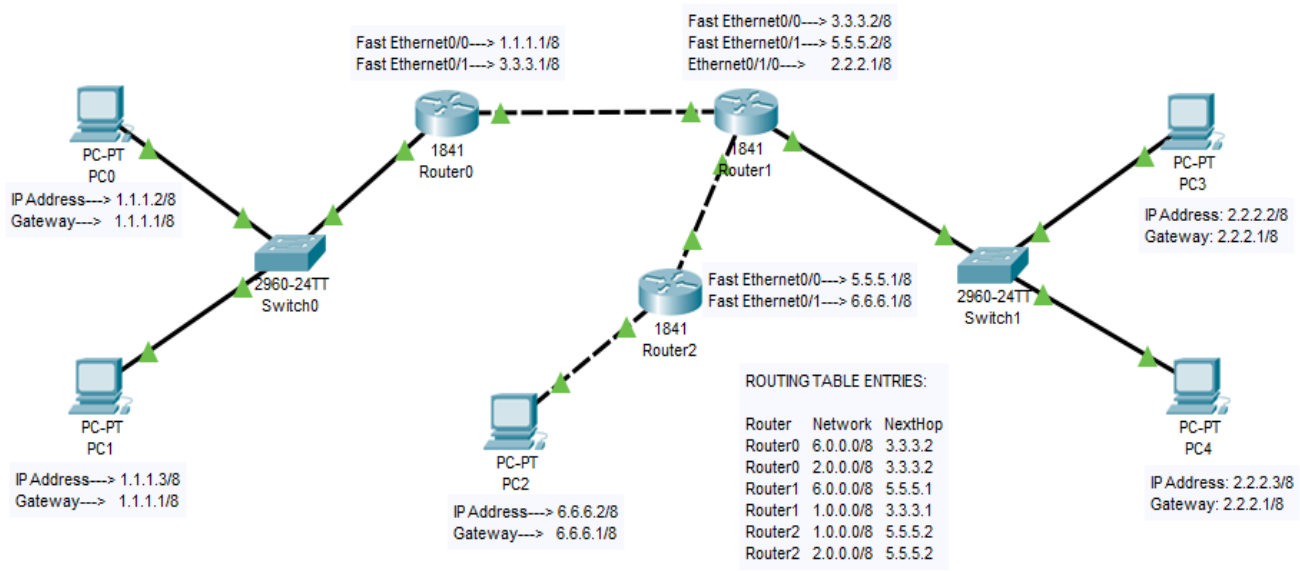

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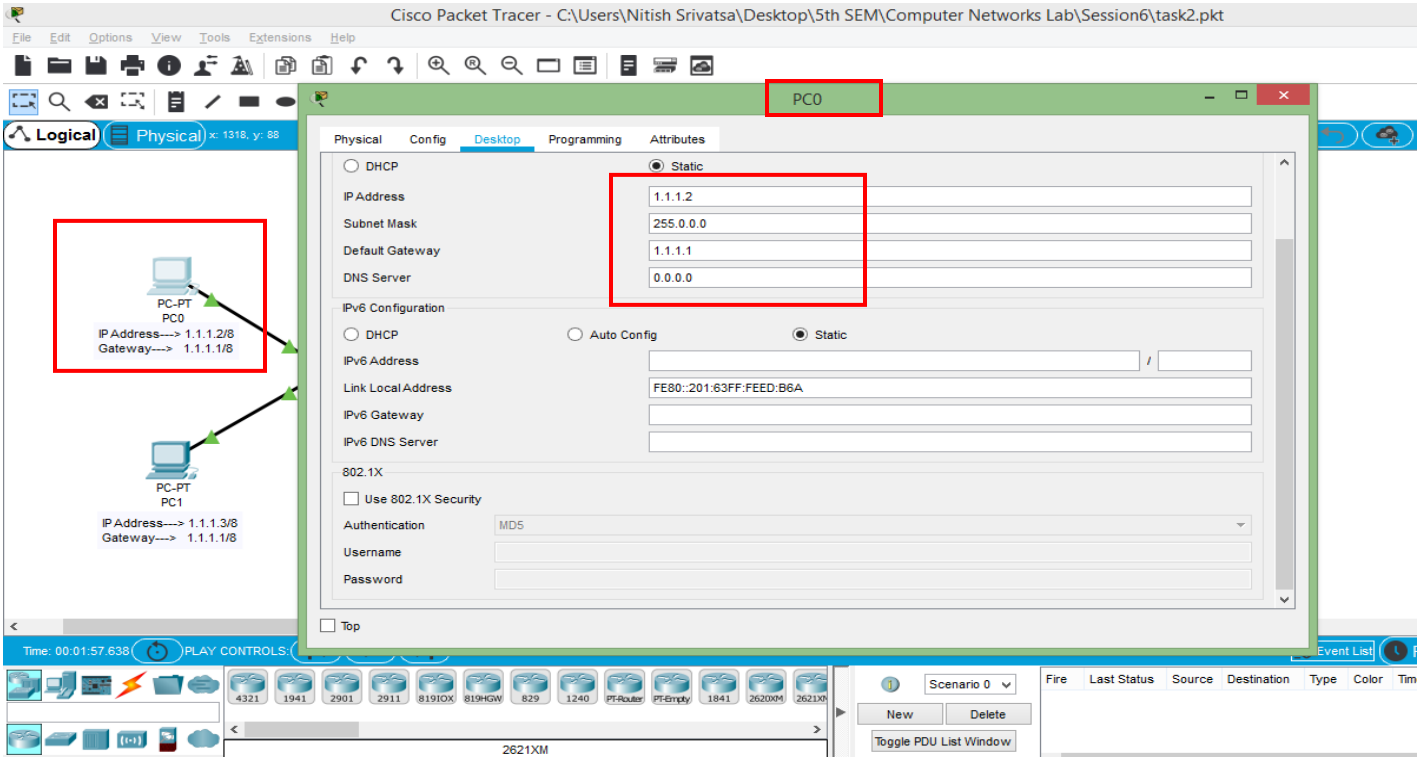
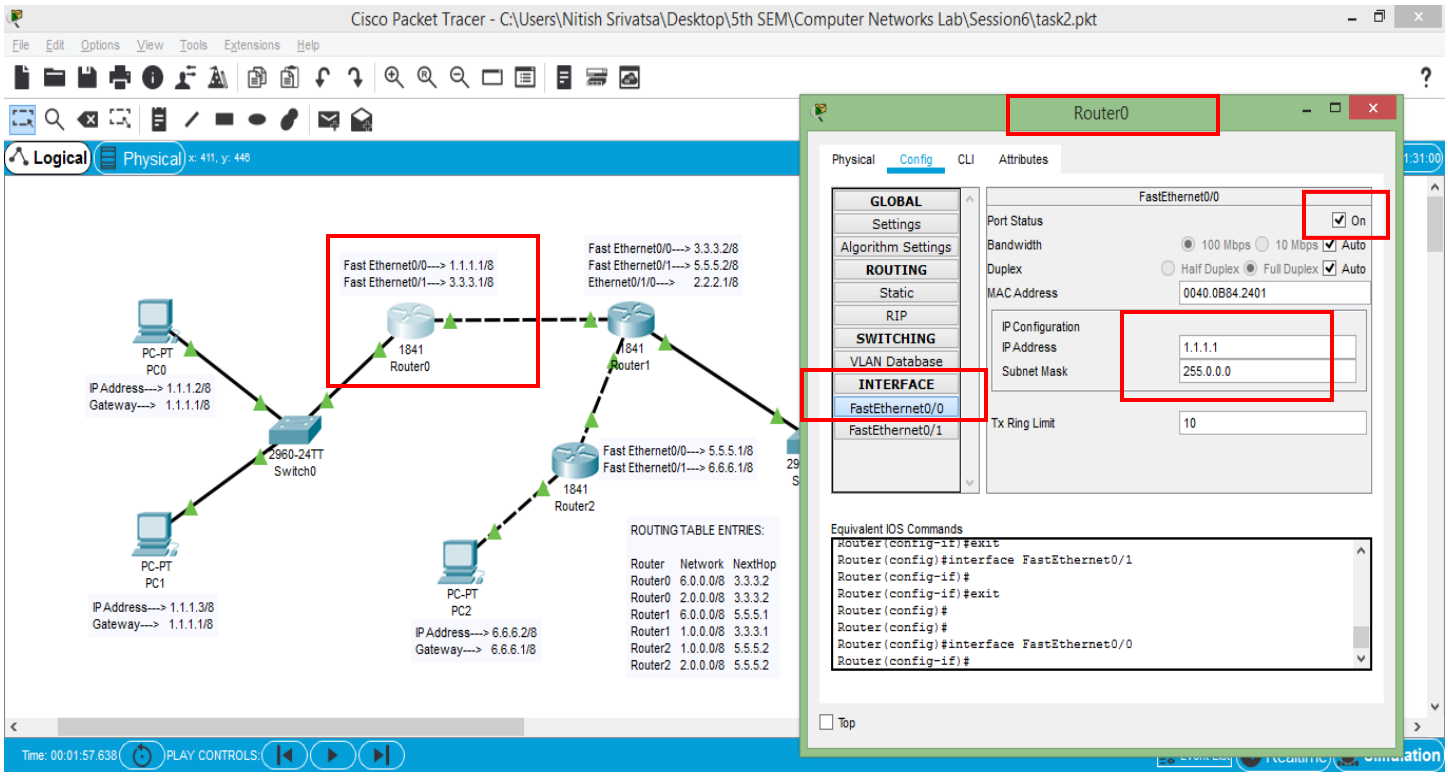
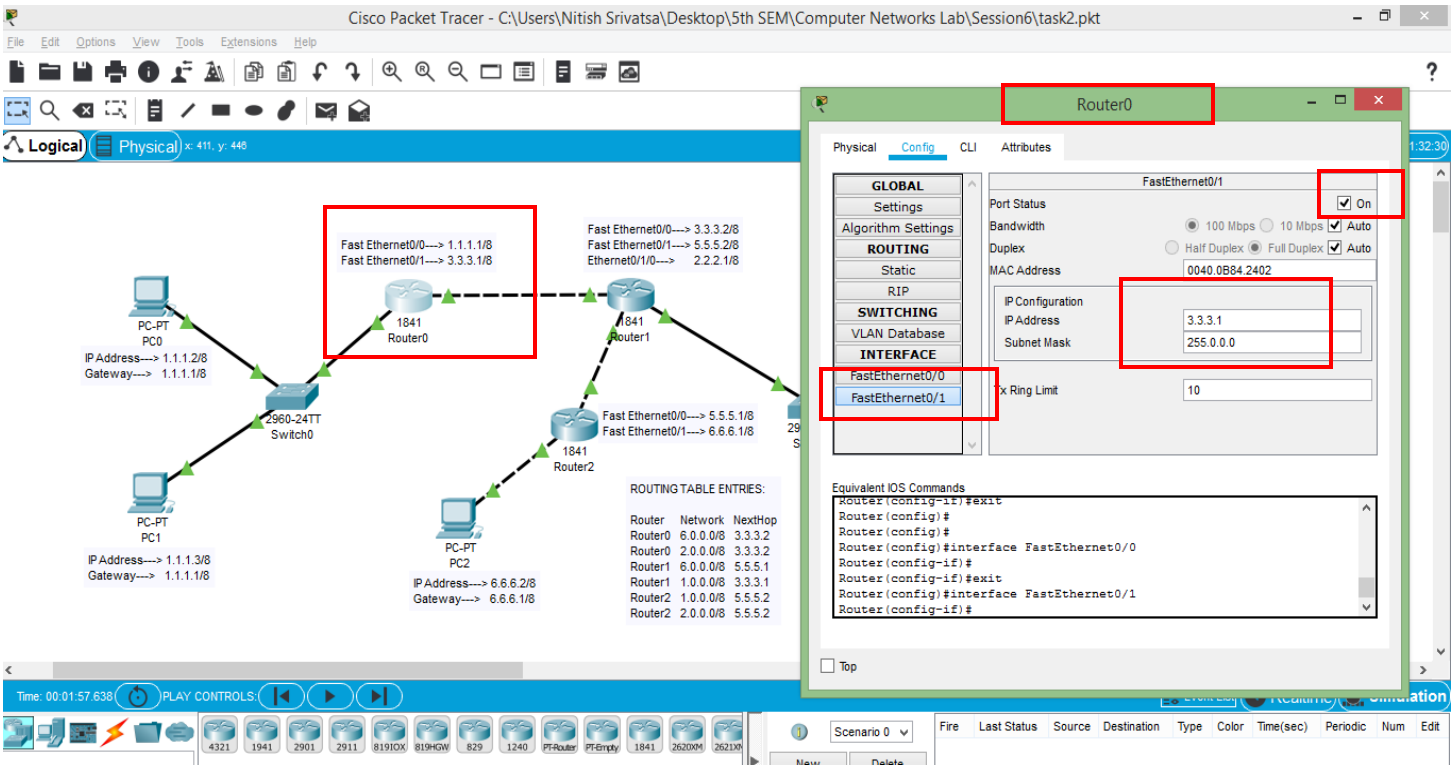


PROCEDURE OF HOW IP ADDRESS AND ROUTING TABLE ENTRIES ARE CONFIGURED FOR A ROUTER:





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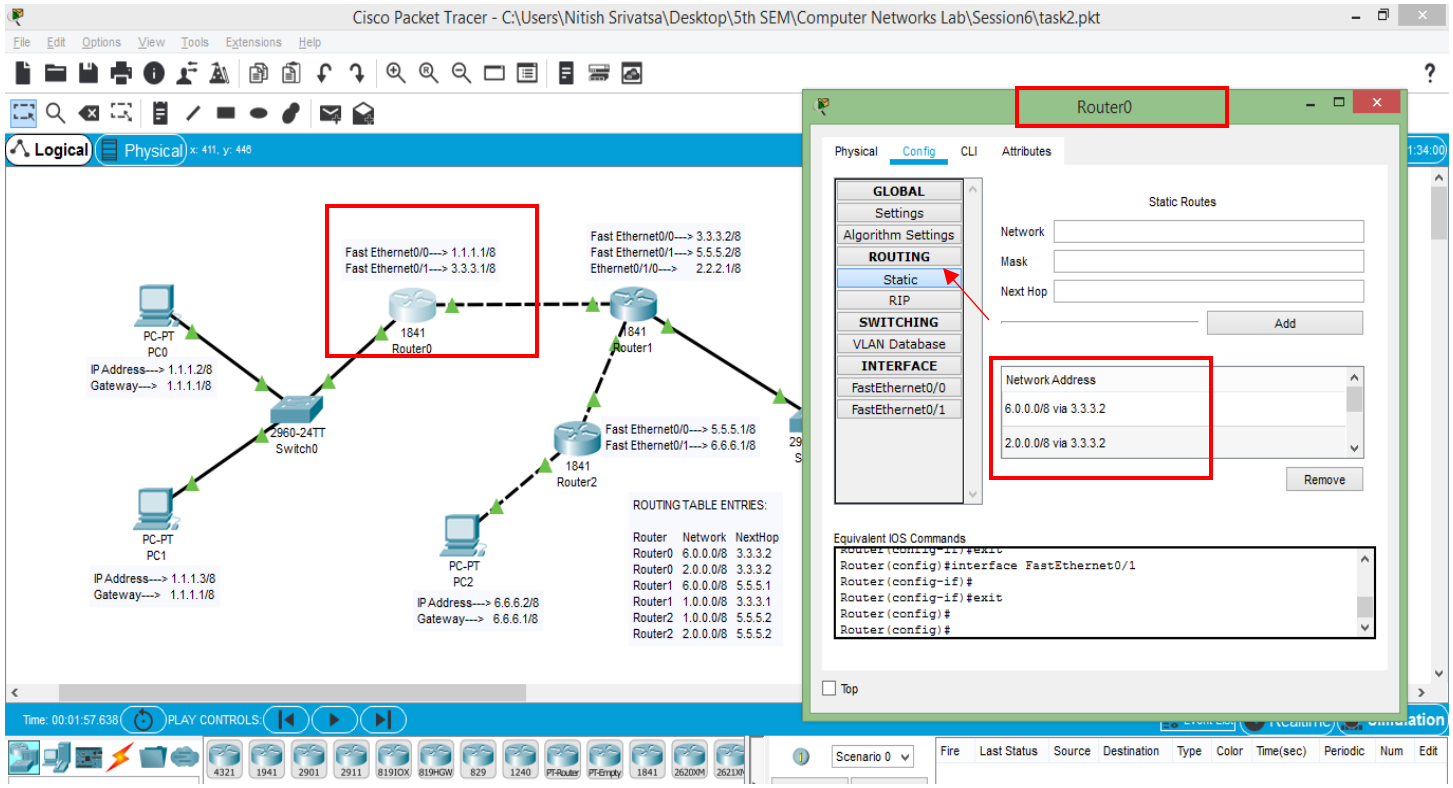

Similar procedure is followed for all the PCs and routers.

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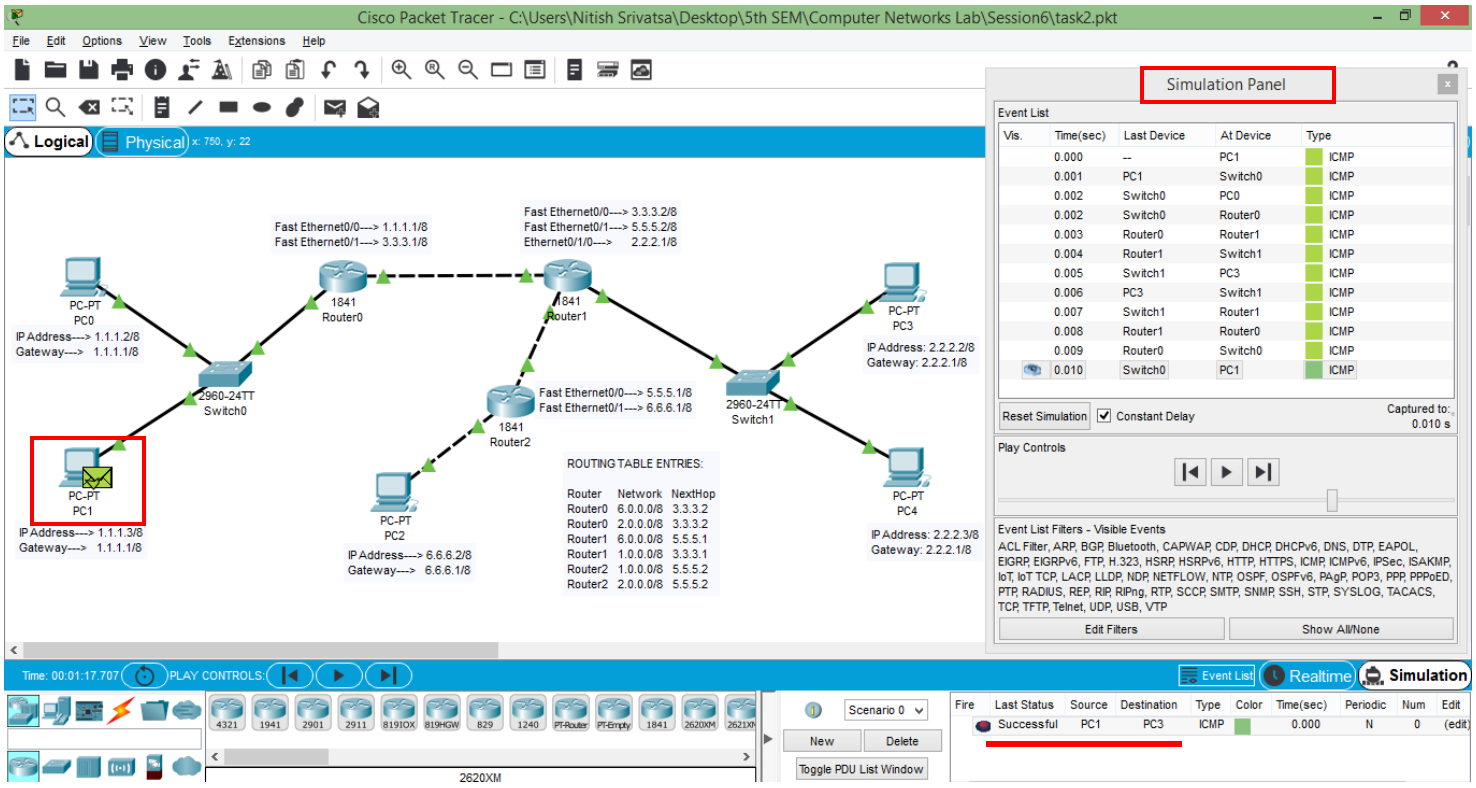
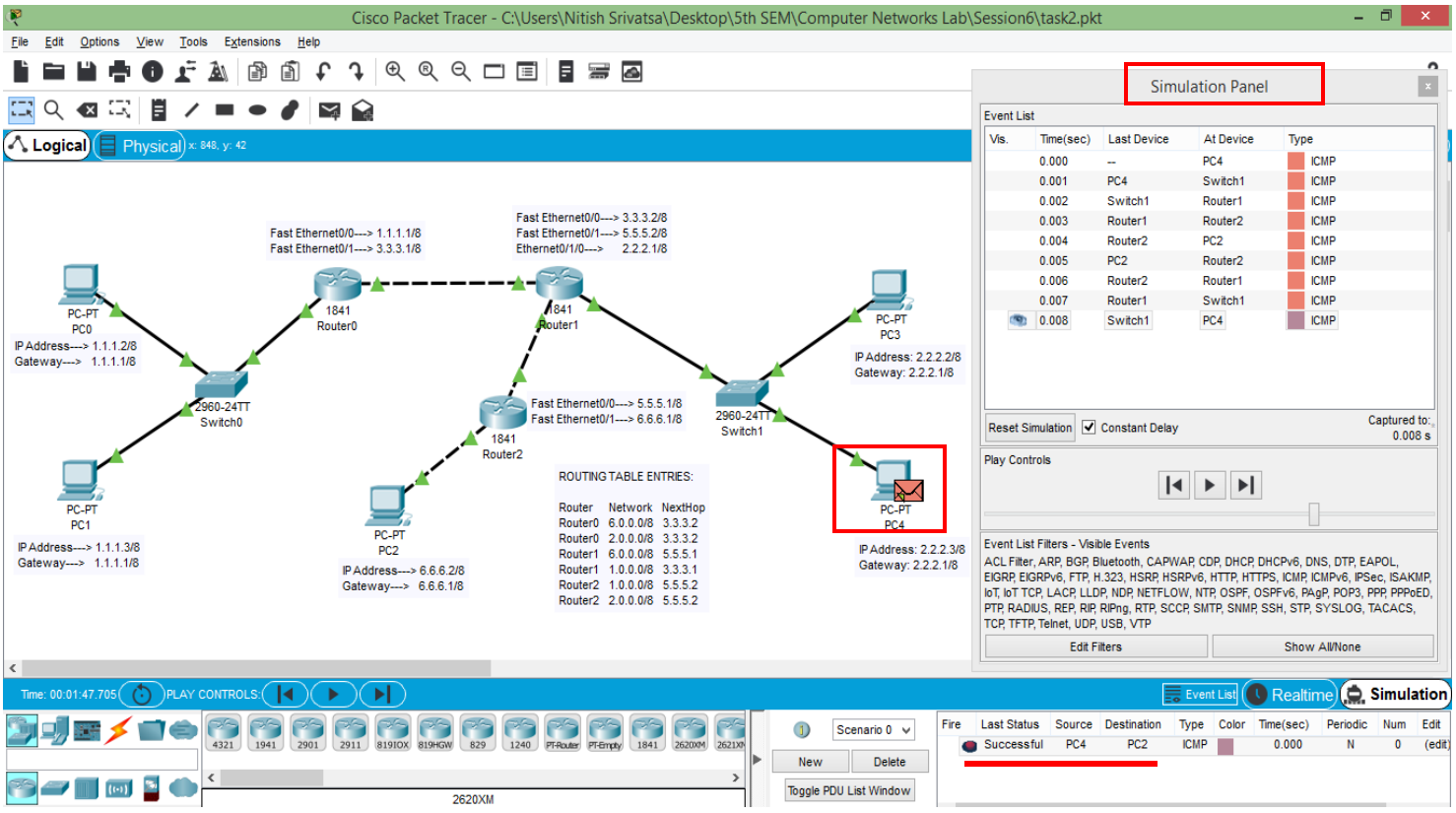
Eg.1) SENDING A PACKET FROM PC1 to PC3:



Eg.2) SENDING A PACKET FROM PC4 to PC2:


Cisco Packet Tracer - C:\Users\Nitish Srivatsa\Desktop\5th SEM\Computer Networks Lab\Session6\task2.pkt
File Edit Options View Tools Extensions Help
Logical
Physical
Simulation Panel
Event List
Vis. Time(sec) Last Device At Device Type
0.000 -- PC4 ICMP
0.001 PC4 Switch1 ICMP
0.002 Switch1 Router1 ICMP
0.003 Router1 Router2 ICMP
0.004 Router2 PC2 ICMP
0.005 PC2 Router2 ICMP
0.006 Router2 Router1 ICMP
0.007 Router1 Switch1 ICMP
0.008 Switch1 PC4 ICMP
Reset Simulation
Constant Delay
Captured to: 0.008 s
Play Controls
Event List Filters - Visible Events
ACL Filter, ARP, BGP, Bluetooth, CAPWAP, CDP, DHCP, DHCPv6, DNS, DTP, EAPOL, EIGRP, EIGRPv6, FTP, H.323, HSRP, HSRPv6, HTTP, HTTPS, ICMP, ICMPv6, IPSec, ISAKMP, IoT, IoT TCP, LACP, LLDP, NDP, NETFLOW, NTP, OSPF, OSPFv6, PAgP, POP3, PPP, PPPoED, PTP, RADIUS, REP, RIP, RIPng, RTP, SCCP, SMTP, SNMP, SSH, STP, SYSLOG, TACACS, TCP, TFTP, Telnet, UDP, USB, VTP
Edit Filters
Show All/None
Fast Ethernet0/0----> 1.1.1.1/8
Fast Ethernet0/1----> 3.3.3.1/8
Fast Ethernet0/0----> 3.3.3.2/8
Fast Ethernet0/1----> 5.5.5.2/8
Ethernet0/1/0----> 2.2.2.1/8
1841 Router0
1841 Router1
PC-PT PC0
IP Address----> 1.1.1.2/8
Gateway----> 1.1.1.1/8
2960-24TT Switch0
PC-PT PC1
IP Address----> 1.1.1.3/8
Gateway----> 1.1.1.1/8
PC-PT PC3
IP Address: 2.2.2.2/8
Gateway: 2.2.2.1/8
2960-24TT Switch1
Fast Ethernet0/0----> 5.5.5.1/8
Fast Ethernet0/1----> 6.6.6.1/8
1841 Router2
PC-PT PC2
IP Address----> 6.6.6.2/8
Gateway----> 6.6.6.1/8
PC-PT PC4
IP Address: 2.2.2.3/8
Gateway: 2.2.2.1/8
ROUTING TABLE ENTRIES:
Router Network NextHop
Router0 6.0.0.0/8 3.3.3.2
Router0 2.0.0.0/8 3.3.3.2
Router1 6.0.0.0/8 5.5.5.1
Router1 1.0.0.0/8 3.3.3.1
Router2 1.0.0.0/8 5.5.5.2
Router2 2.0.0.0/8 5.5.5.2
Time: 00:01:47.705
PLAY CONTROLS:
Event List
Realtime
Simulation
Scenario 0
New
Delete
Toggle PDU List Window
Fire Last Status Source Destination Type Color Time(sec) Periodic Num Edit
Successful PC4 PC2 ICMP 0.000 N 0 (edit)
2620XM