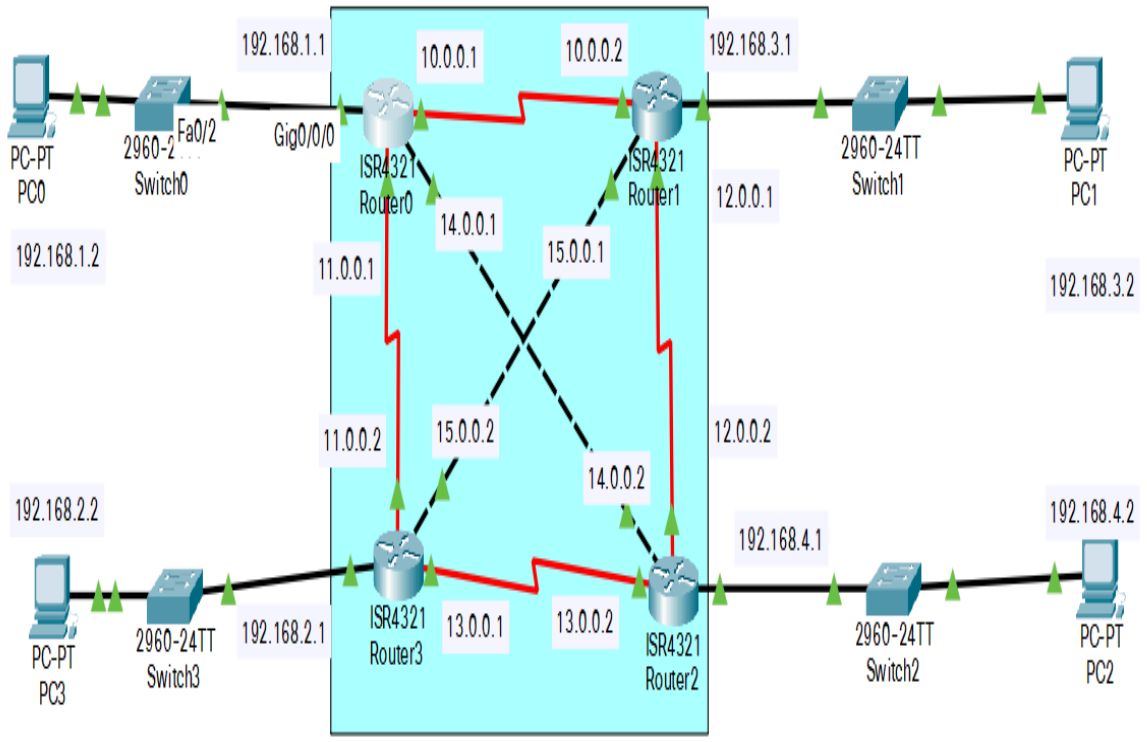
Experiment 5 : Use Packet tracer software to build network topology and configure using Link State routing protocol.

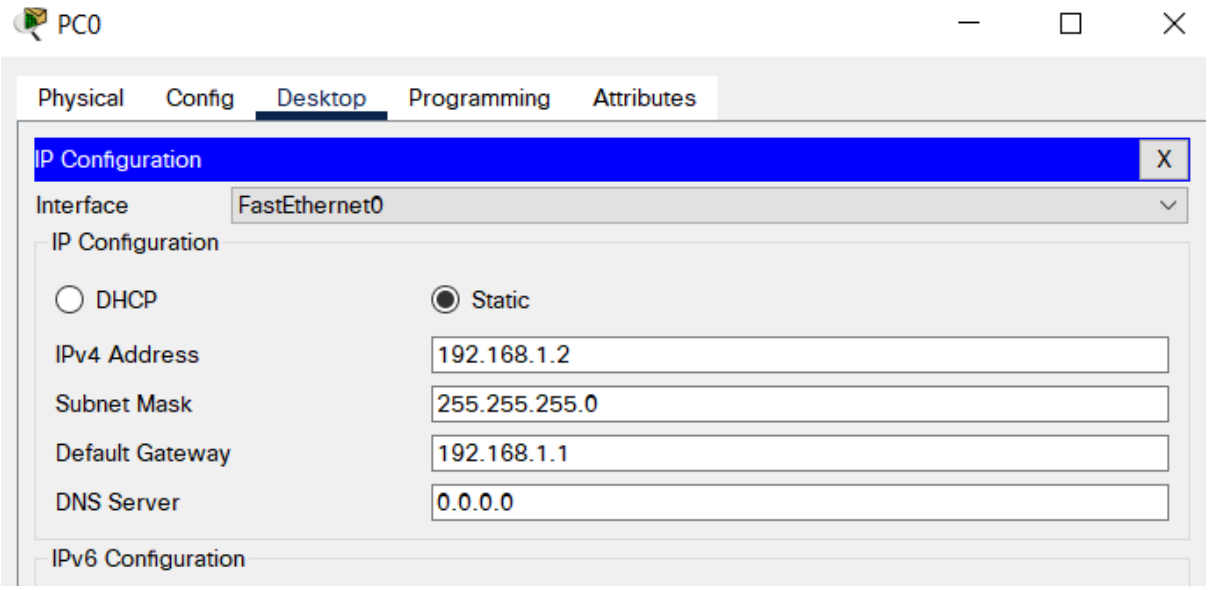
Apparatus (Software): Packet Tracer Software

Procedure :

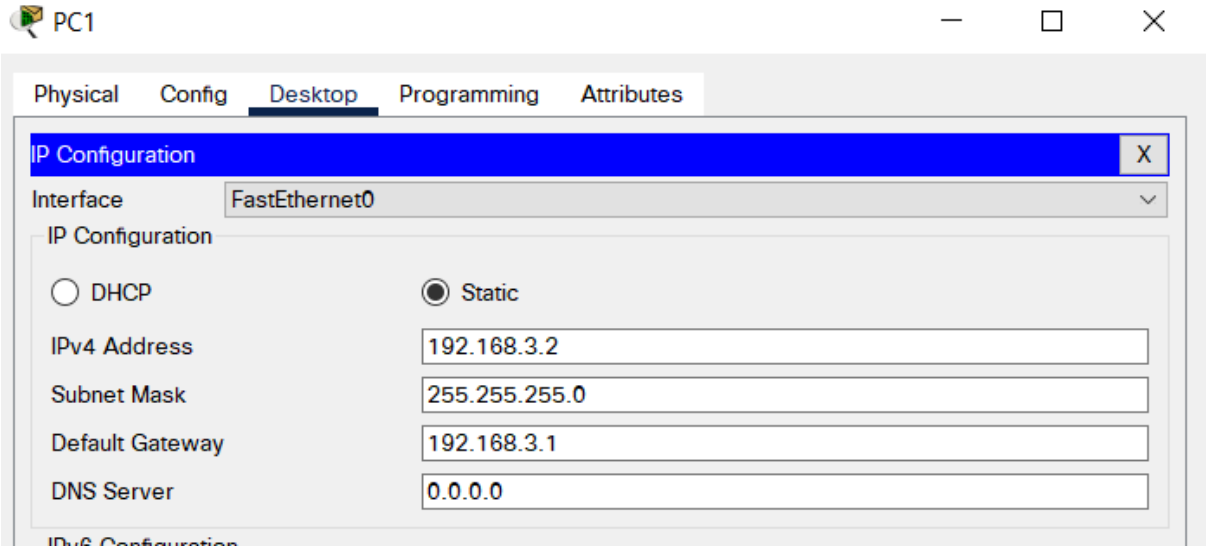
1. Develop a Topology shown in figure given below.
2. Configure all the Workstations.
3. Configure all Switches.
4. Configure all Routers.
5. Implement OSPF protocols in Router to configure network.



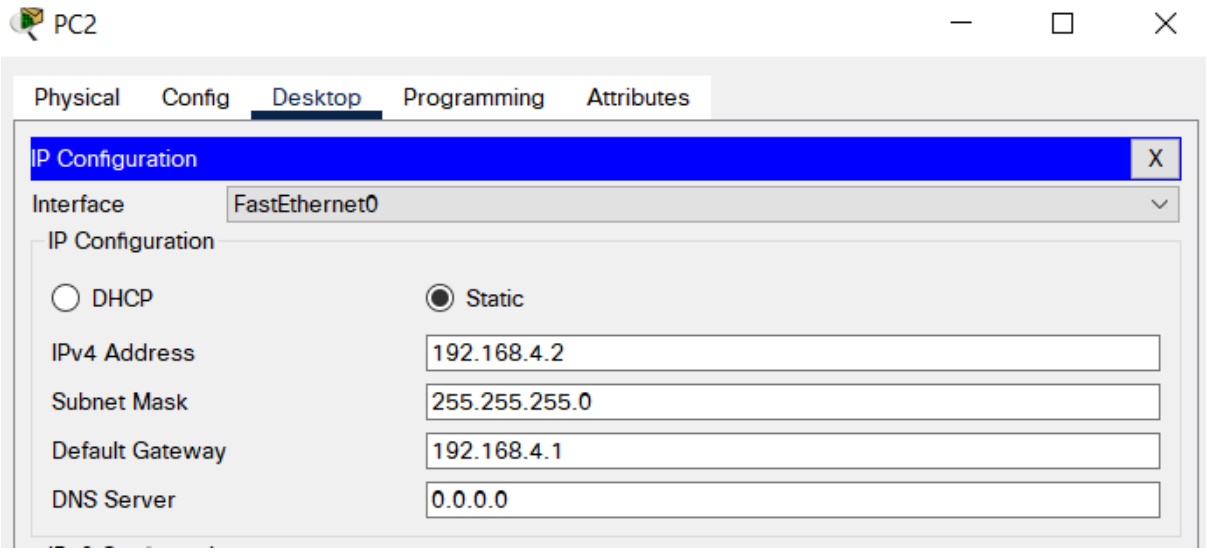
Configure PC0: Configure IP Addresses for each PCs.



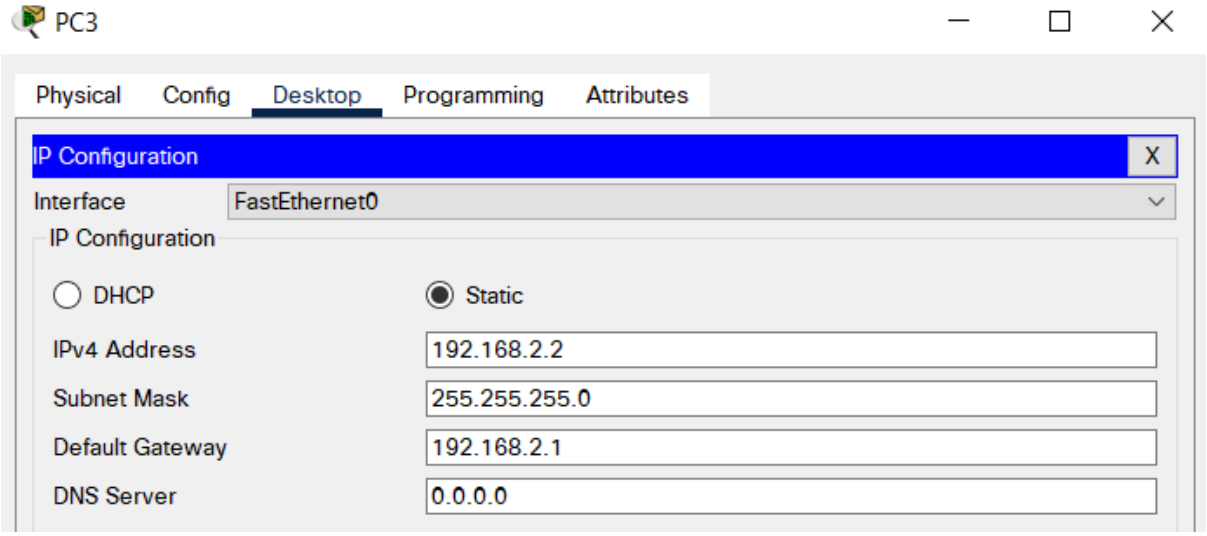
Configure PC1:



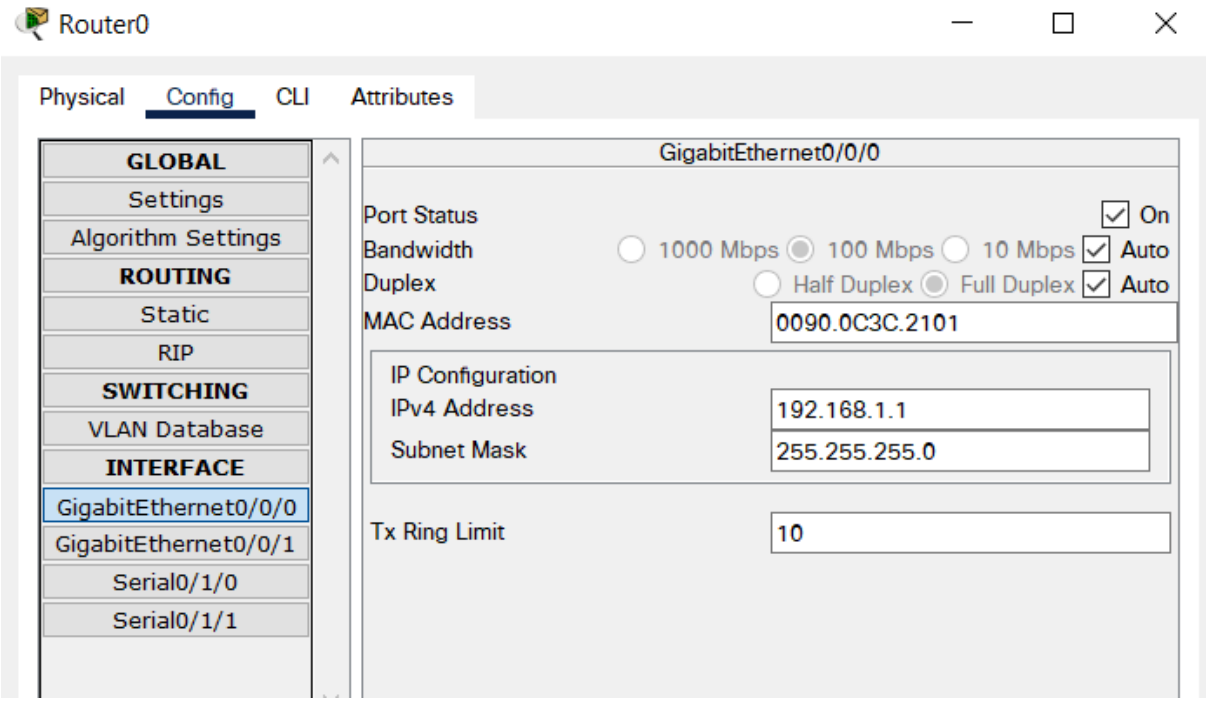
Configure PC2:

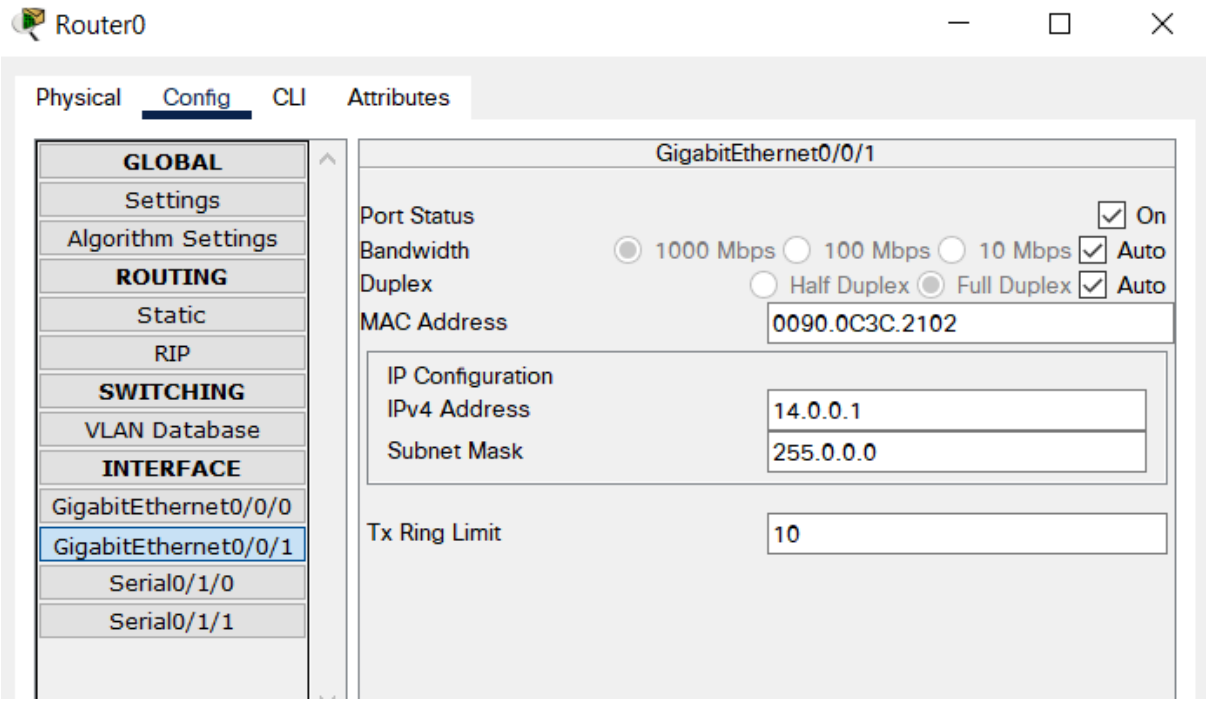


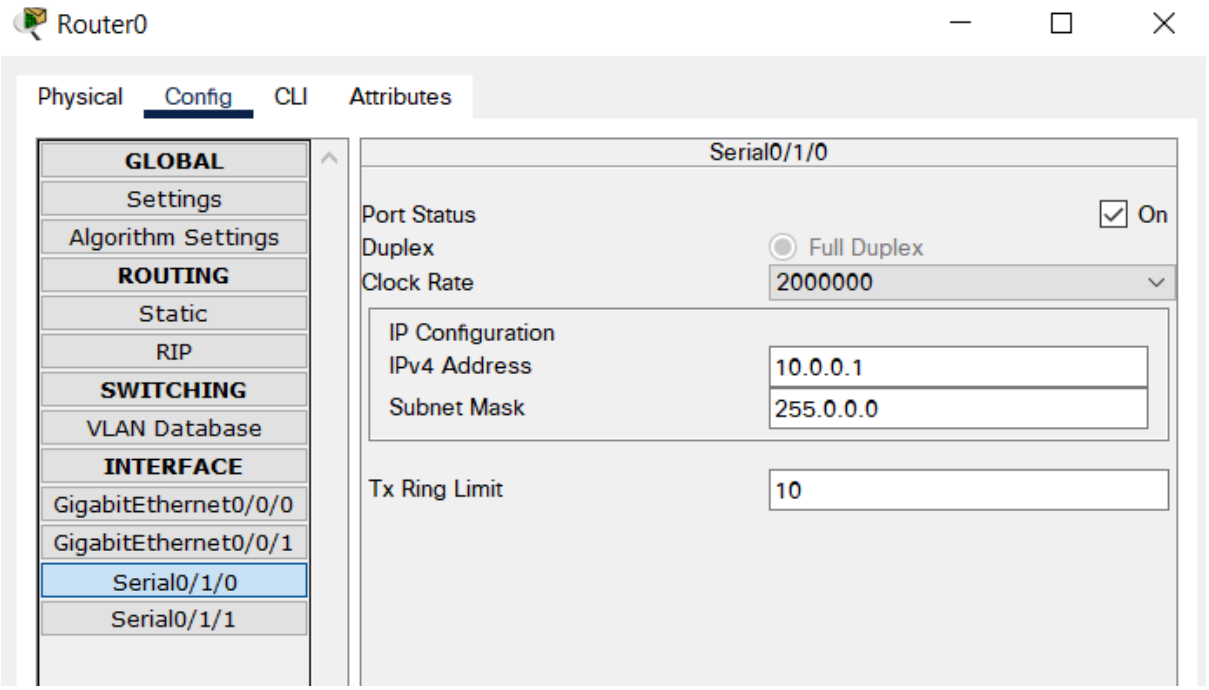
Configure PC3:

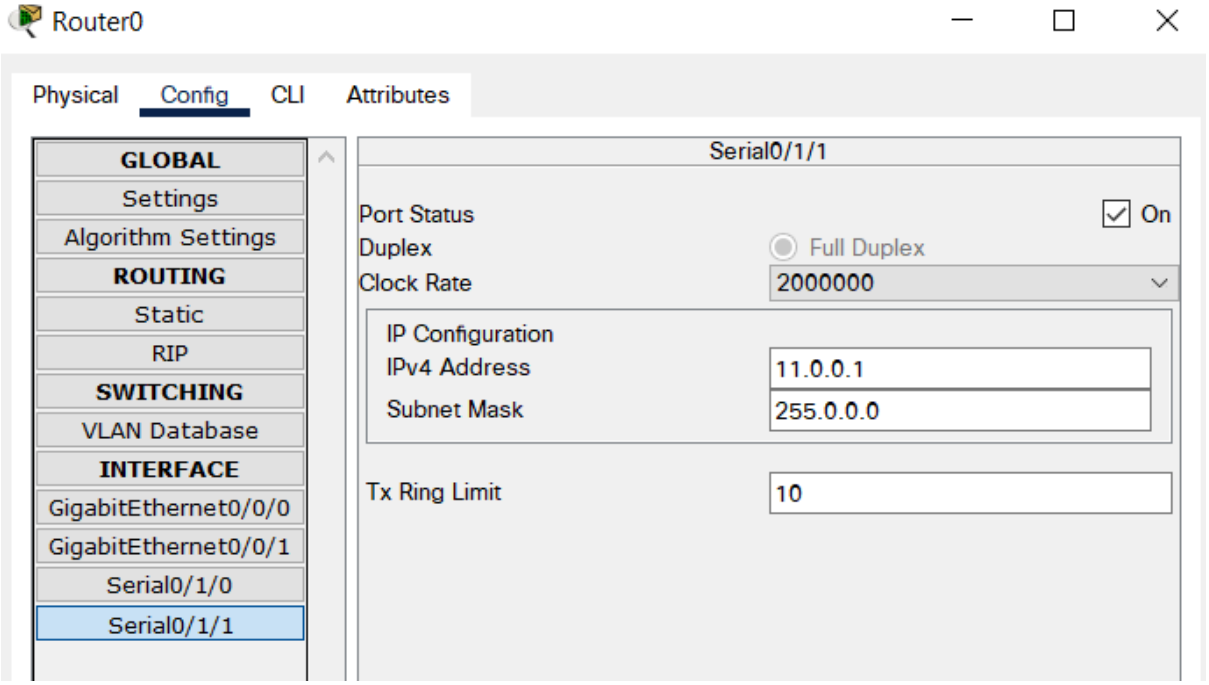


Configuring IP Addresses for Router0: Configure all the IP Address for 4 ports as given below


Router0
Physical
Config
CLI
Attributes
GLOBAL
Settings
Algorithm Settings
ROUTING
Static
RIP
SWITCHING
VLAN Database
INTERFACE
GigabitEthernet0/0/0
GigabitEthernet0/0/1
Serial0/1/0
Serial0/1/1
GigabitEthernet0/0/0
Port Status
On
Bandwidth
1000 Mbps
100 Mbps
10 Mbps
Auto
Duplex
Half Duplex
Full Duplex
Auto
MAC Address
0090.0C3C.2101
IP Configuration
IPv4 Address
192.168.1.1
Subnet Mask
255.255.255.0
Tx Ring Limit
10

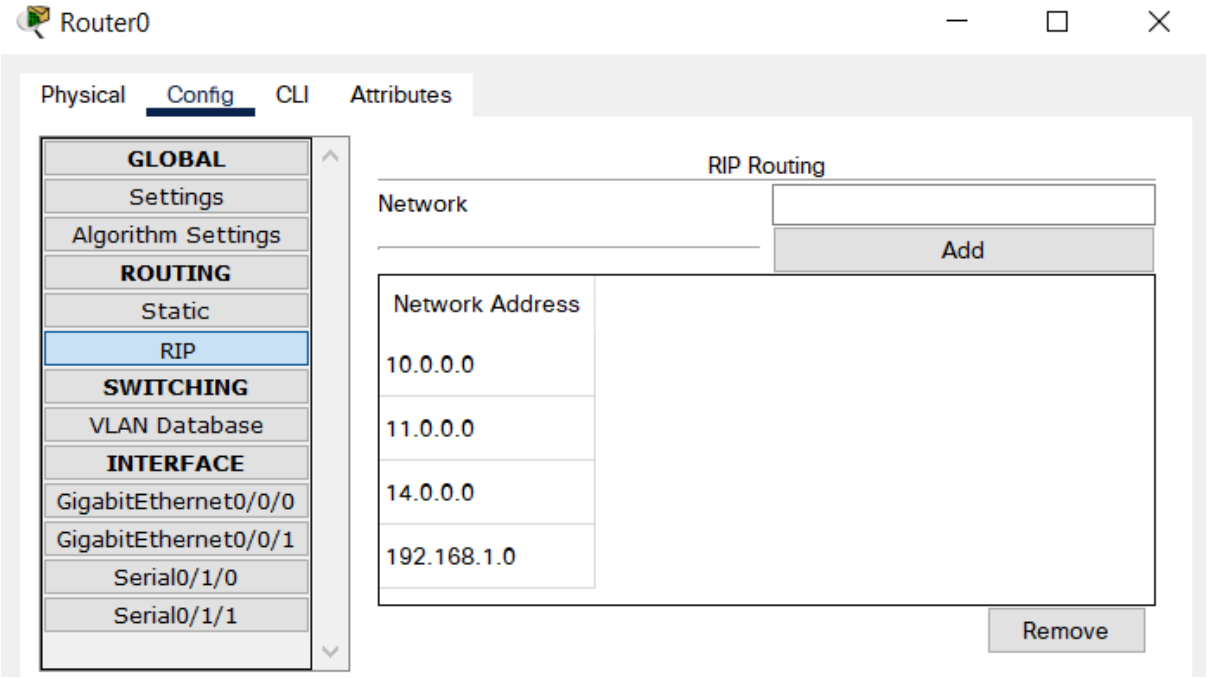

Router0
Physical
Config
CLI
Attributes
GLOBAL
Settings
Algorithm Settings
ROUTING
Static
RIP
SWITCHING
VLAN Database
INTERFACE
GigabitEthernet0/0/0
GigabitEthernet0/0/1
Serial0/1/0
Serial0/1/1
GigabitEthernet0/0/1
Port Status
On
Bandwidth
1000 Mbps
100 Mbps
10 Mbps
Auto
Duplex
Half Duplex
Full Duplex
Auto
MAC Address
0090.0C3C.2102
IP Configuration
IPv4 Address
14.0.0.1
Subnet Mask
255.0.0.0
Tx Ring Limit
10

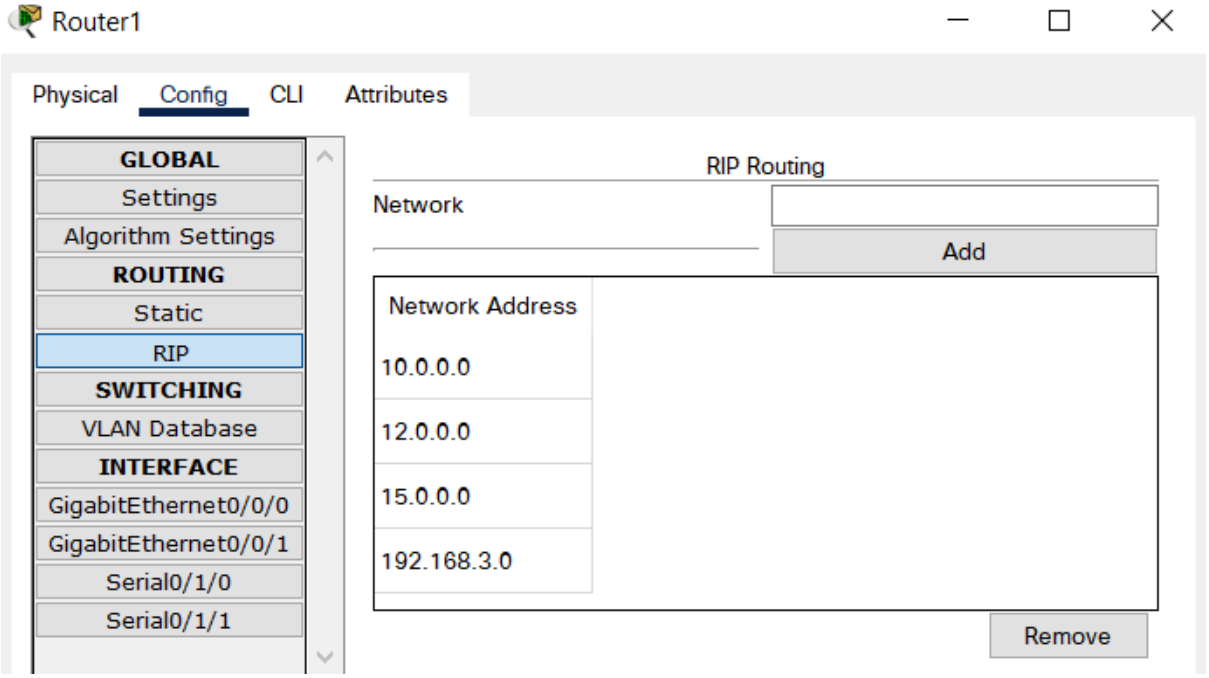


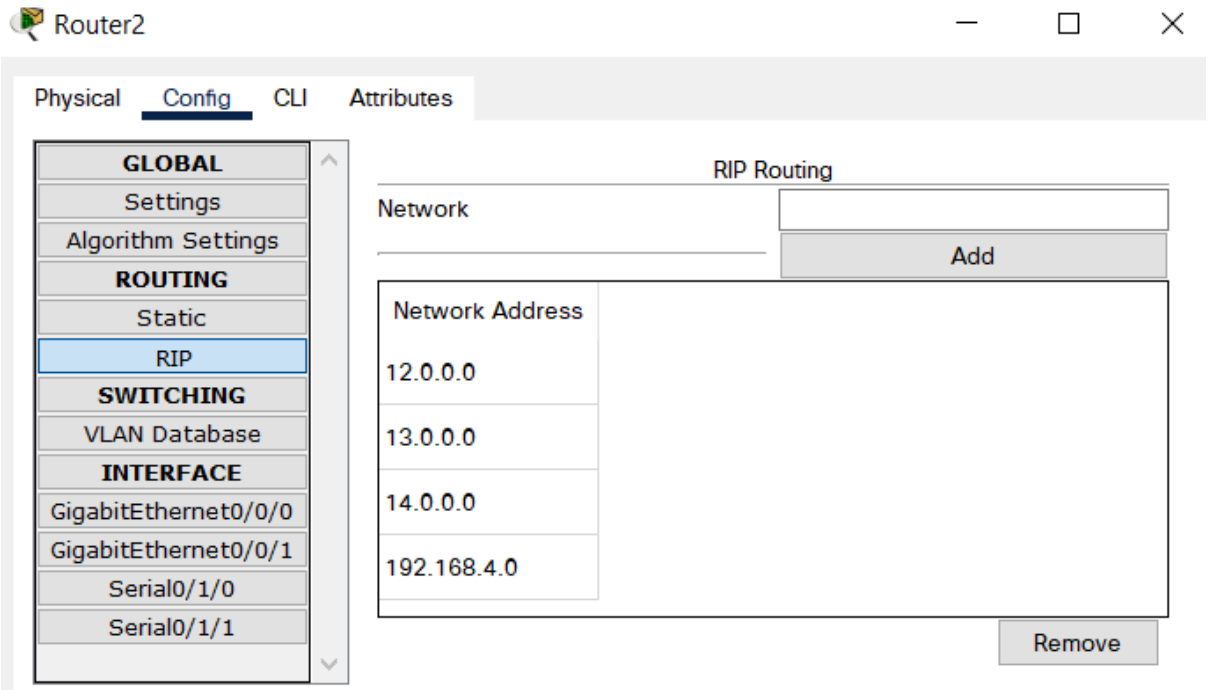


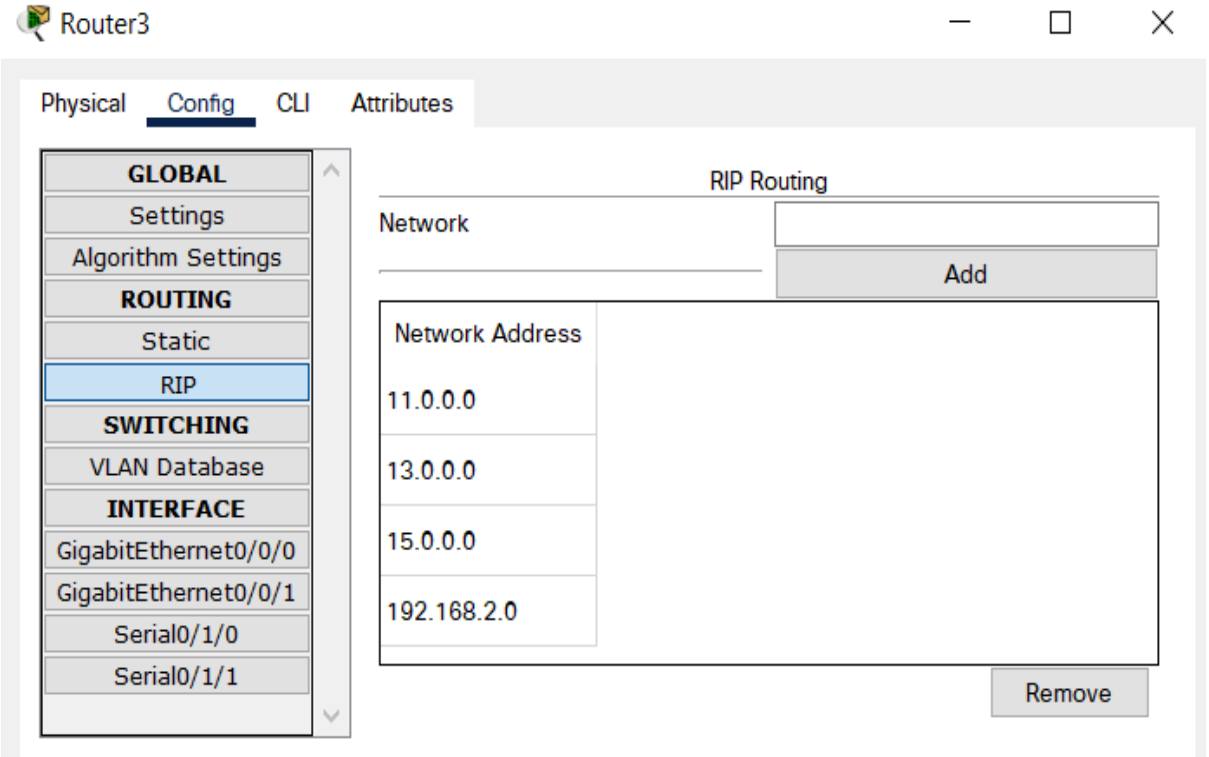
Note: Configure IP Addreses for remaining routers router1, router2 and router3 also.

Configure Shortest Path by assigning Network Addresses for router0, router1, router2 and router3 as shown below:

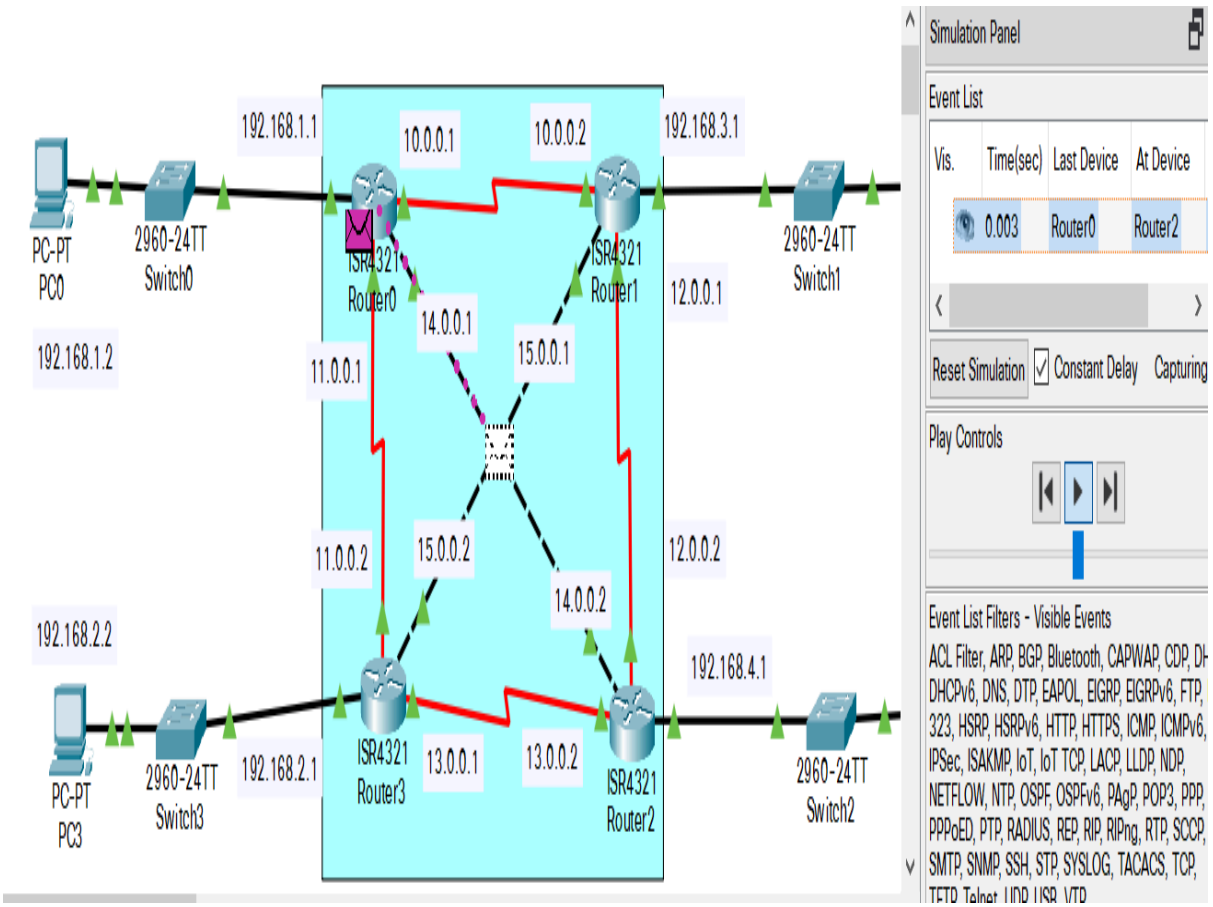

Router0
Physical
Config
CLI
Attributes
GLOBAL
Settings
Algorithm Settings
ROUTING
Static
RIP
SWITCHING
VLAN Database
INTERFACE
GigabitEthernet0/0/0
GigabitEthernet0/0/1
Serial0/1/0
Serial0/1/1
RIP Routing
Network
Add
Network Address
10.0.0.0
11.0.0.0
14.0.0.0
192.168.1.0
Remove


Router1
Physical
Config
CLI
Attributes
GLOBAL
Settings
Algorithm Settings
ROUTING
Static
RIP
SWITCHING
VLAN Database
INTERFACE
GigabitEthernet0/0/0
GigabitEthernet0/0/1
Serial0/1/0
Serial0/1/1
RIP Routing
Network
Add
Network Address
10.0.0.0
12.0.0.0
15.0.0.0
192.168.3.0
Remove





Simulation: Sending data from PC0 to PC2 via Router0 and Router2 which takes open shortest path.


192.168.1.1
10.0.0.1
10.0.0.2
192.168.3.1
PC-PT
PC0
2960-24TT
Switch0
ISR4321
Router0
ISR4321
Router1
2960-24TT
Switch1
192.168.1.2
14.0.0.1
15.0.0.1
12.0.0.1
11.0.0.1
11.0.0.2
15.0.0.2
12.0.0.2
14.0.0.2
192.168.2.2
192.168.4.1
PC-PT
PC3
2960-24TT
Switch3
192.168.2.1
ISR4321
Router3
13.0.0.1
13.0.0.2
ISR4321
Router2
2960-24TT
Switch2
Simulation Panel
Event List
Vis.
Time(sec)
Last Device
At Device
0.003
Router0
Router2
Reset Simulation
Constant Delay
Capturing
Play Controls
Event List Filters - Visible Events
ACL Filter, ARP, BGP, Bluetooth, CAPWAP, CDP, DH
DHCPv6, DNS, DTP, EAPOL, EIGRP, EIGRPv6, FTP,
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