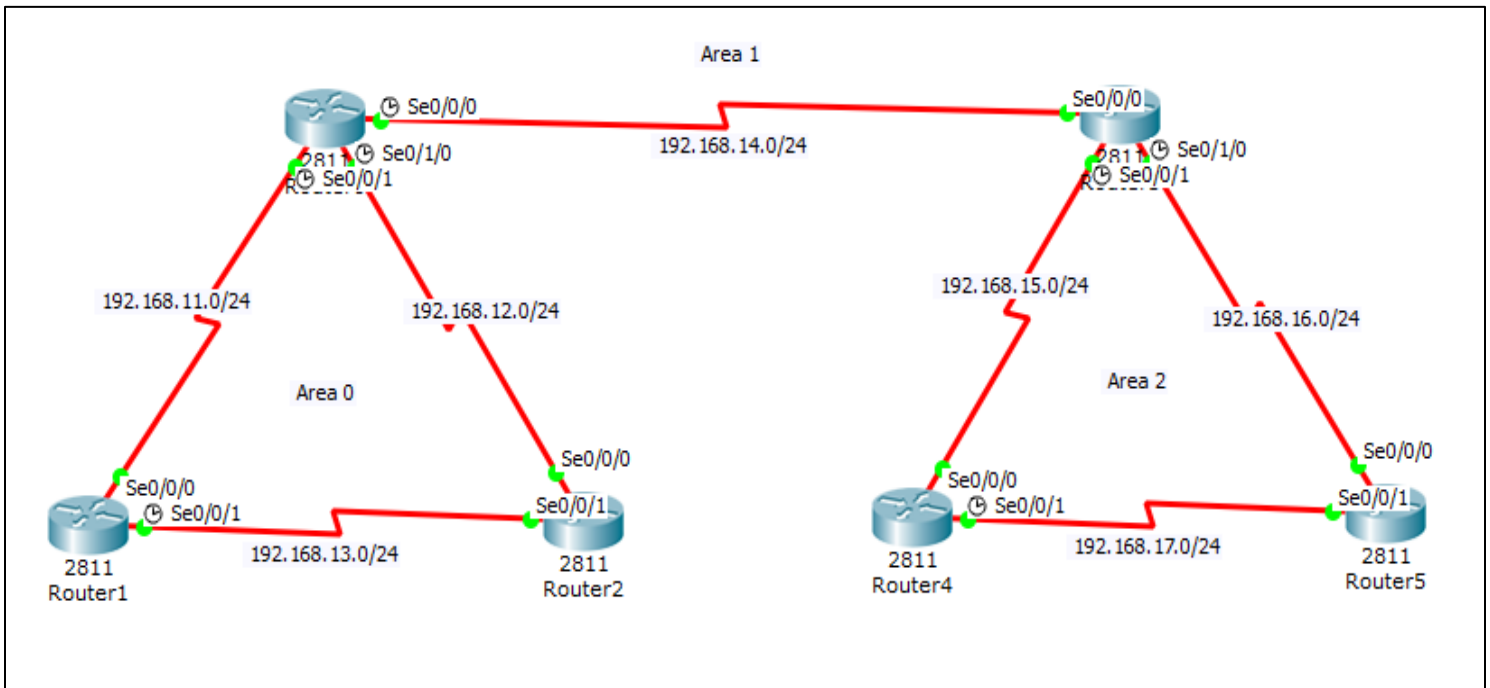**Military Institute of Science and Technology**
Department of Computer Science and Engineering
CSE-18, Level-3, Term-II, 2020
CSE-310
Assignment-4

Problem:

Design the following network in packet tracer. Use OSPF protocol for dynamic routing to ensure that each Router/PC can communicate with each other.

Soliution:

Router Configuration

Router 0

Router>enable
Router#config t
Router(config)#interface s0/0/0
Router(config-if)#clock rate 64000
Router(config-if)#no shut down
Router(config-if)#ip address 192.168.14.1 255.255.255.0
Router(config-if)#exit

Router(config)#interface s0/0/1
Router(config-if)#clock rate 64000
Router(config-if)#no shut down
Router(config-if)#ip address 192.168.11.1 255.255.255.0
Router(config-if)#exit

Router(config)#interface s0/1/0
Router(config-if)#clock rate 64000
Router(config-if)#no shut down
Router(config-if)#ip address 192.168.12.1 255.255.255.0
Router(config-if)#exit

Router 1

Router>enable
Router#config t
Router(config)#interface s0/0/0
Router(config-if)#no shut down
Router(config-if)#ip address 192.168.11.2 255.255.255.0
Router(config-if)#exit

Router(config)#interface s0/0/1
Router(config-if)#clock rate 64000
Router(config-if)#no shut down
Router(config-if)#ip address 192.168.13.1 255.255.255.0
Router(config-if)#exit

Router 2

Router>enable
Router#config t
Router(config)#interface s0/0/0
Router(config-if)#no shut down
Router(config-if)#ip address 192.168.12.2 255.255.255.0
Router(config-if)#exit

Router(config)#interface s0/0/1
Router(config-if)#no shut down
Router(config-if)#ip address 192.168.13.2 255.255.255.0
Router(config-if)#exit

Router 3

Router>enable
Router#config t
Router(config)#interface s0/0/0
Router(config-if)#no shut down
Router(config-if)#ip address 192.168.14.2 255.255.255.0
Router(config-if)#exit

Router(config)#interface s0/0/1
Router(config-if)#clock rate 64000
Router(config-if)#no shut down
Router(config-if)#ip address 192.168.15.1 255.255.255.0
Router(config-if)#exit

Router(config)#interface s0/1/0
Router(config-if)#clock rate 64000
Router(config-if)#no shut down
Router(config-if)#ip address 192.168.16.1 255.255.255.0
Router(config-if)#exit

Router 4

Router>enable
Router#config t
Router(config)#interface s0/0/0
Router(config-if)#no shut down
Router(config-if)#ip address 192.168.15.2 255.255.255.0

Router(config-if)#exit

Router(config)#interface s0/0/1
Router(config-if)#clock rate 64000
Router(config-if)#no shut down
Router(config-if)#ip address 192.168.17.1 255.255.255.0
Router(config-if)#exit

Router 5

Router>enable
Router#config t
Router(config)#interface s0/0/0
Router(config-if)#no shut down
Router(config-if)#ip address 192.168.16.2 255.255.255.0
Router(config-if)#exit

Router(config)#interface s0/0/1
Router(config-if)#no shut down
Router(config-if)#ip address 192.168.17.2 255.255.255.0
Router(config-if)#exit

Implement OSPF

Router 0

Router(config)#router ospf 1
Router(config-router)#router-id 1.1.1.1
Router(config-router)#network 192.168.11.0 0.0.0.255 area 0
Router(config-router)#network 192.168.12.0 0.0.0.255 area 0
Router(config-router)#network 192.168.14.0 0.0.0.255 area 1

Router(config-router)#area 1 virtual-link 4.4.4.4

Router(config-router)#exit

Router 1

Router(config)#router ospf 1
Router(config-router)#router-id 2.2.2.2
Router(config-router)#network 192.168.11.0 0.0.0.255 area 0
Router(config-router)#network 192.168.13.0 0.0.0.255 area 0
Router(config-router)#exit

Router 2

Router(config)#router ospf 1
Router(config-router)#router-id 3.3.3.3
Router(config-router)#network 192.168.12.0 0.0.0.255 area 0
Router(config-router)#network 192.168.13.0 0.0.0.255 area 0
Router(config-router)#exit

Router 3

Router(config)#router ospf 1
Router(config-router)#router-id 4.4.4.4
Router(config-router)#network 192.168.14.0 0.0.0.255 area 1
Router(config-router)#network 192.168.15.0 0.0.0.255 area 2
Router(config-router)#network 192.168.16.0 0.0.0.255 area 2

Router(config-router)#area 1 virtual-link 1.1.1.1

Router(config-router)#exit

Router 4

Router(config)#router ospf 1
Router(config-router)#router-id 5.5.5.5
Router(config-router)#network 192.168.15.0 0.0.0.255 area 2
Router(config-router)#network 192.168.17.0 0.0.0.255 area 2
Router(config-router)#exit

Router 5

Router(config)#router ospf 1
Router(config-router)#router-id 6.6.6.6
Router(config-router)#network 192.168.16.0 0.0.0.255 area 2
Router(config-router)#network 192.168.17.0 0.0.0.255 area 2
Router(config-router)#exit