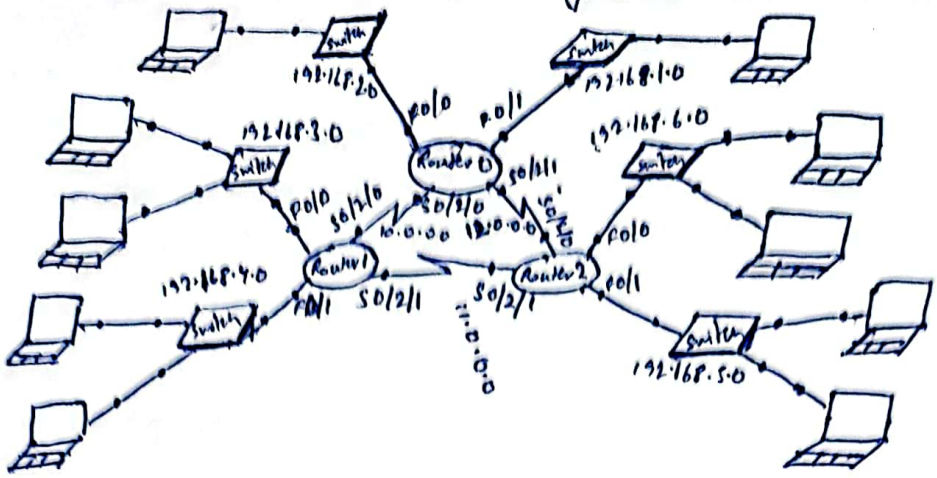
ASSIGNMENT-9

1. Configure RIP in a diamond configuration with 3 routers and 6 LAN's



→ Routers are connected in a circular way with serial DTE wire and then each router is connected with two switch and some PCs.

→ IP address of each PCs were manually given and default gateway as routers IP address

→ IP address for Routers at each port :-

Router 0

	IP Address	Subnet Mask
f0/0	192.168.2.1	255.255.255.0
f0/1	192.168.1.1	255.255.255.0
s0/2/0	10.0.0.1	255.0.0.0
s0/2/1	12.0.0.2	255.0.0.0

Router 1

f0/0	192.168.3.1	255.255.255.0
f0/1	192.168.4.1	255.255.255.0
s0/2/0	10.0.0.2	255.0.0.0
s0/2/1	11.0.0.1	255.0.0.0

Router 2

f0/0	192.168.6.1	255.255.255.0
f0/1	192.168.5.1	255.255.255.0
s0/2/0	12.0.0.1	255.0.0.0
s0/2/1	11.0.0.2	255.0.0.0

→ RIP routing for Routers :-

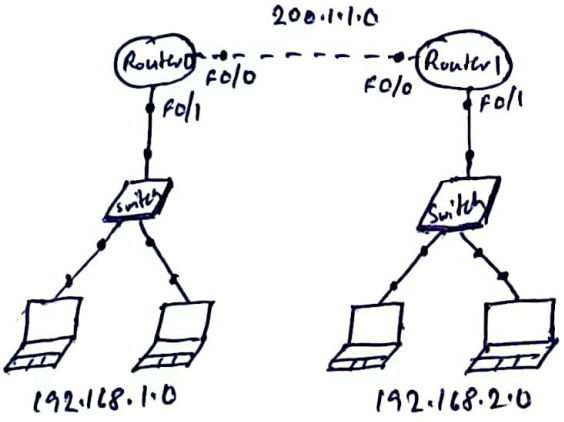
	Network
Router 0	10.0.0.0
	12.0.0.0
	192.168.1.0
	192.168.2.0

```
Router(config-if)## int f0/0
Router(config-if)## ip add 200.1.1.1 255.255.255.0
Router(config-if)## no sh
Router(config-if)## route ospf 1
Router(config-router)## network 192.168.1.0 0.0.0.255 area 0
Router(config-router)## network 200.1.1.0 0.0.0.255 area 0
Router(config-router)## ^Z
Router## wr
  Building configuration...
  [OK]
Router## sh ip protocols
  Routing Protocol is "ospf 1"
    Outgoing update filter list.....
    ..... is not set
    Router ID 200.1.1.1
    Number of areas in this router is 1. 1 normal 0 stub 0 nssa
    Maximum path: 4
    Routing for Networks:
      192.168.1.0 0.0.0.255 area0
      200.1.1.0 0.0.0.255 area 0
    Routing Information Sources:
      Gateway         Distance      Last Update
      200.1.1.1         110         00:00:52
    Distance: (default is 110)

Router# sh ip route
Codes: C - connected
       ....
       ....
       ....

Gateway of last report is not set
C 192.168.1.0/24 is directly connected, F0/1
O 192.168.2.0/24 [110/2] via 200.1.1.2, 00:00:22, F0/0
C 200.1.1.0/24 is directly connected, F0/0

Router# sh ip ospf database
            OSPF Router with ID (200.1.1.1) (Process ID 1)
                Router Link States (Area 0)

Link ID       ADV Router     Age   Seq#       Checksum  Link Count
200.1.1.1     200.1.1.1      69    0x80000003 0x0001a7  2
200.1.1.2     200.1.1.2      69    0x80000003 0x00f490  2
```

	Network
Router 1	10.0.0.0
	11.0.0.0
	192.168.3.0
	192.168.4.0
Router 2	11.0.0.0
	12.0.0.0
	192.168.5.0
	192.168.6.0

→ Now packets can be transferred from any PC to another PC connected with different Routers.
At first we will get 25% loss
At last we will get 0% loss.

2. Configure OSPF with 2 Routers and 2 LAN's



→ Two routers are connected with each other. Each router is connected with a switch and it is connected with two PCs
→ IP addresses of each PCs were manually given and default gateways as routers IP address.
→ Now in CLI menu we will give IP address to router and set OSPF. In Router 0

```
Router>en
Router# config t
Router(config)#int f0/1
Router(config-if)# ip add 192.168.1.1 255.255.255.0
Router(config-if)#no sh
```

Net Link States (Area 0)

Link ID	Adv Router	Age	seq#	Checksum
200.1.1.1	200.1.1.1	69	0x80000001	0x00420a

Router# sh ip ospf neighbor

Neighbor ID	Pri	State	Dead Time	Address	Interface
200.1.1.2	1	FULL/BDR	00:00:31	200.1.1.2	R0/0

→ Same commands have to be done on Router 1 in CLI mode.

→ After that we can send packets from one PC to another PC connected with another router.

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