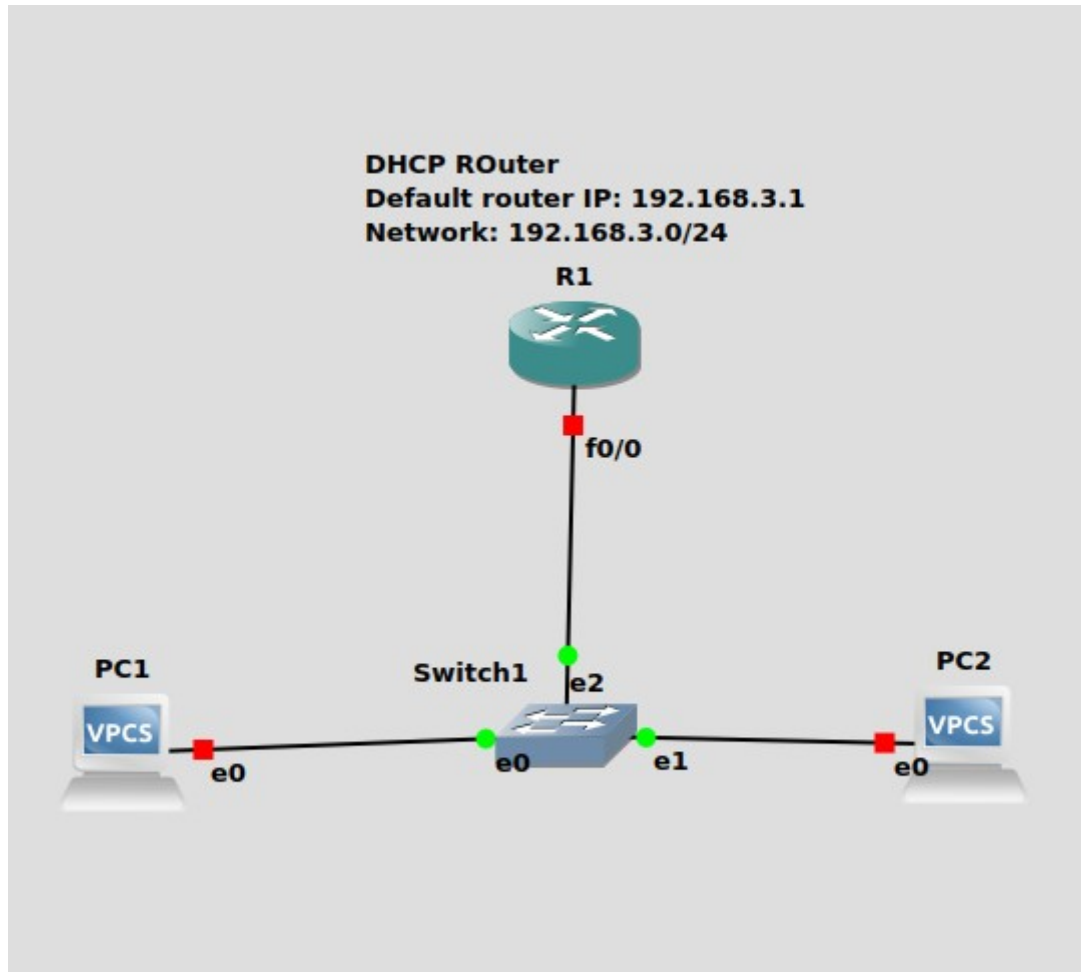


LAB8> STUDY OF DHCP PROTOCOL

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Q1)



R1 is assigned as the dhcp router and it assigns pc1 and pc2 their ip addresses.
D O R A packets observed.
DHCP discover, offer, request, acknowledge

R1)

```
R1#config t
R1(config)#ip dhcp pool NAME
R1(dhcp-config)#network 192.168.3.0 255.255.255.0
R1(dhcp-config)#default-router 192.168.3.1
R1(dhcp-config)#exit
R1(config)#interface f0/0
R1(config-if)#ip address 192.168.3.1 255.255.255.0
R1(config-if)#no shutdown
R1(config-if)#exit
R1(config)#
```

PC1)

```
PC1> dhcp
DDORA IP 192.168.3.2/24 GW 192.168.3.1
```

```
PC1> show ip
NAME      : PC1[1]
IP/MASK   : 192.168.3.2/24
GATEWAY   : 192.168.3.1
DNS       :
DHCP SERVER : 192.168.3.1
DHCP LEASE : 86368, 86400/43200/75600
MAC       : 00:50:79:66:68:00
LPORT     : 10008
RHOST:PORT : 127.0.0.1:10009
MTU       : 1500
```

PC2)

```
PC2> dhcp
DORA IP 192.168.3.3/24 GW 192.168.3.1
```

```
PC2> show ip
NAME      : PC2[1]
IP/MASK   : 192.168.3.3/24
GATEWAY   : 192.168.3.1
DNS       :
DHCP SERVER : 192.168.3.1
DHCP LEASE : 86398, 86400/43200/75600
MAC       : 00:50:79:66:68:01
LPORT     : 10010
RHOST:PORT : 127.0.0.1:10011
MTU       : 1500
```

```
Changed state to down
R1#config t
Enter configuration commands, one per line. End with CNTL/Z.
R1(config)#ip dhcp pool NAME
R1(dhcp-config)#network 192.168.3.0 255.255.255.0
R1(dhcp-config)#default-router 192.168.3.1
R1(dhcp-config)#no shut
^
% Invalid input detected at '^' marker.

R1(dhcp-config)#exit
R1(config)#interface f0/0
R1(config-if)#ip address 192.168.3.1 255.255.255.0
R1(config-if)#no shutdown
```

```
PC1
GNS3
Executing the startup file
PC1> dhcp
DDORA IP 192.168.3.2/24 GW 192.168.3.1
```

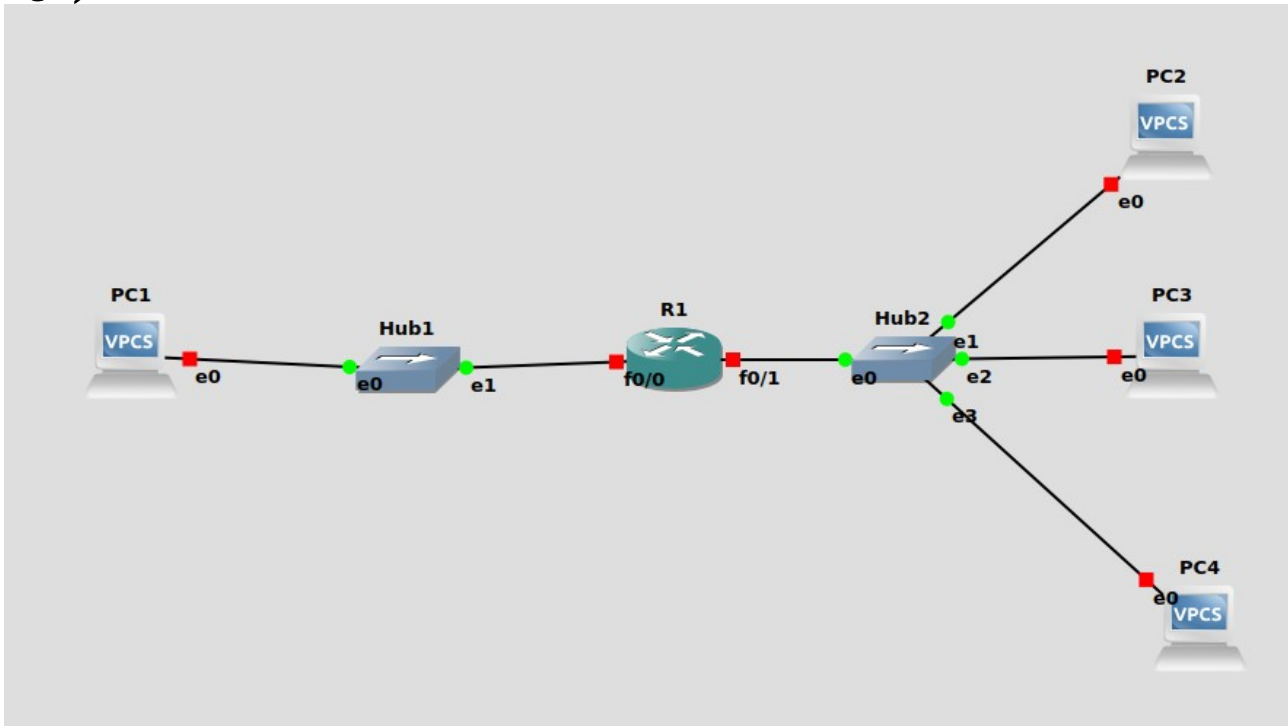
```
PC1> show ip
NAME      : PC1[1]
IP/MASK   : 192.168.3.2/24
GATEWAY   : 192.168.3.1
DNS       :
DHCP SERVER : 192.168.3.1
DHCP LEASE : 86368, 86400/43200/75600
MAC       : 00:50:79:66:68:00
LPORT     : 10008
RHOST:PORT : 127.0.0.1:10009
MTU       : 1500
```

```
PC1> dhcp
DORA IP 192.168.3.2/24 GW 192.168.3.1
```

Capturing from - [PC1 Ethernet0 to Switch1 Ethernet0]

Source	Destination	Protocol	Length	Info
c4:01:0b:01:00:00	DEC-MOP-Remote-Console	8x6882	77	DEC DMA Remote Console
0.0.0.0	255.255.255.255	DHCP	406	DHCP Discover - Transaction ID 0x37f9827
Private_66:08:01	Broadcast	ARP	64	Gratuitous ARP for 192.168.3.3 (Request)
Private_66:08:01	Broadcast	ARP	64	Gratuitous ARP for 192.168.3.3 (Request)
Private_66:08:01	Broadcast	ARP	64	Gratuitous ARP for 192.168.3.3 (Request)
0.0.0.0	255.255.255.255	DHCP	406	DHCP Discover - Transaction ID 0x9e22906
c4:01:0b:01:00:00	CDP/VTP/DTP/PagP/UDLD	CDP	350	Device ID: R1 Port ID: FastEthernet0/0
Private_66:08:01	Broadcast	ARP	64	Gratuitous ARP for 192.168.3.3 (Request)
Private_66:08:01	Broadcast	ARP	64	Gratuitous ARP for 192.168.3.3 (Request)
Private_66:08:01	Broadcast	ARP	64	Gratuitous ARP for 192.168.3.3 (Request)
0.0.0.0	255.255.255.255	DHCP	406	DHCP Discover - Transaction ID 0x78719a0
192.168.3.1	192.168.3.2	DHCP	342	DHCP Offer - Transaction ID 0x78719a0
0.0.0.0	255.255.255.255	DHCP	406	DHCP Request - Transaction ID 0x78719a0
192.168.3.1	192.168.3.2	DHCP	342	DHCP ACK - Transaction ID 0x78719a0
Private_66:08:00	Broadcast	ARP	64	Gratuitous ARP for 192.168.3.2 (Request)
Private_66:08:00	Broadcast	ARP	64	Gratuitous ARP for 192.168.3.2 (Request)
c4:01:0b:01:00:00	CDP/VTP/DTP/PagP/UDLD	CDP	350	Device ID: R1 Port ID: FastEthernet0/0
c4:01:0b:01:00:00	CDP/VTP/DTP/PagP/UDLD	CDP	350	Device ID: R1 Port ID: FastEthernet0/0
c4:01:0b:01:00:00	CDP/VTP/DTP/PagP/UDLD	CDP	350	Device ID: R1 Port ID: FastEthernet0/0

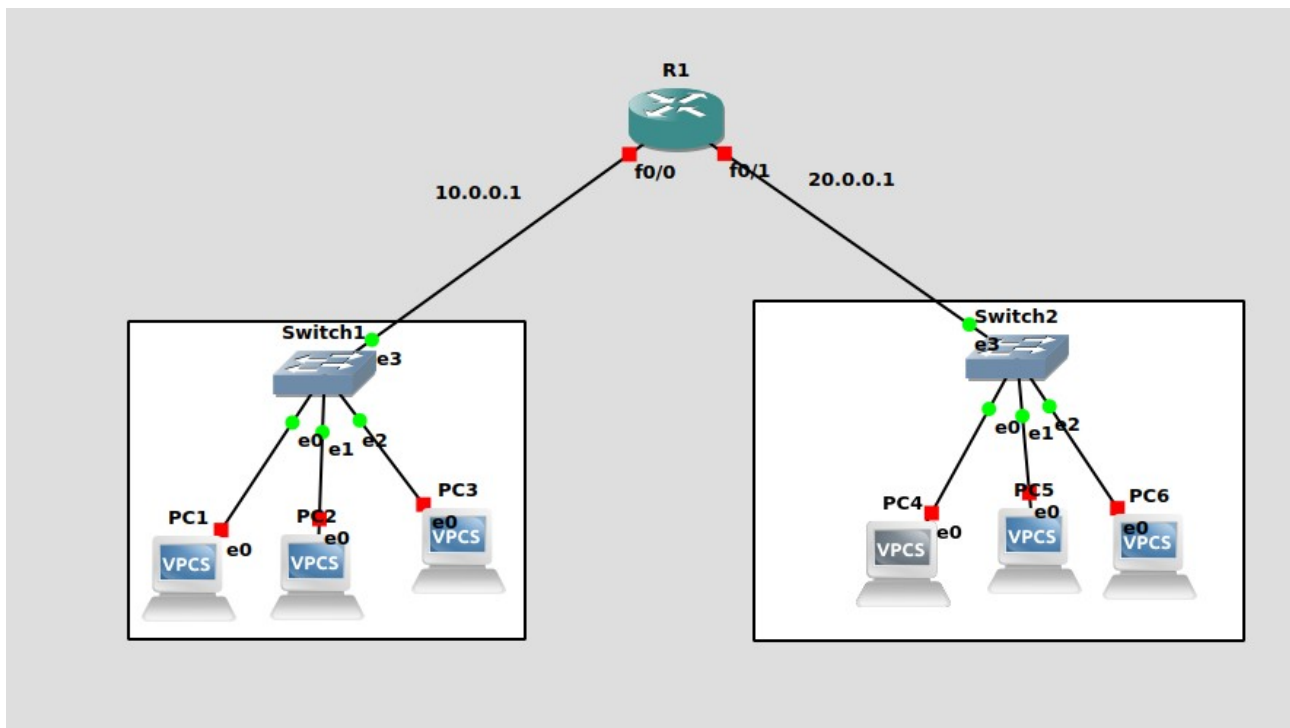
Q2)



R1)

```
R1#config t
R1(config)#interface f0/0
R1(config-if)#ip address 10.1.1.1 255.255.255.0
R1(config-if)#no shutdown
R1(config-if)#
*Mar 1 00:13:32.447: %LINK-3-UPDOWN: Interface FastEthernet0/0, changed state to up
*Mar 1 00:13:33.447: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0,
changed state to up
R1(config-if)#exit
R1(config)#interface f0/1
R1(config-if)#ip address 10.0.2.138 255.255.255.0
R1(config-if)#no shut
R1(config-if)#
*Mar 1 00:17:27.483: %LINK-3-UPDOWN: Interface FastEthernet0/1, changed state to up
*Mar 1 00:17:28.483: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1,
changed state to up
R1(config-if)#exit
R1(config)#end
```

Q3)



R1)

R1#config t

Enter configuration commands, one per line. End with CNTL/Z.

R1(config)#interface f0/0

R1(config-if)#ip address 10.0.0.1 255.255.255.0

R1(config-if)#no shut

R1(config-if)#exit

R1(config)#interface f0/1

R1(config-if)#ip address 20.0.0.1 255.255.255.0

R1(config-if)#no shut

R1(config-if)#exit

R1(config)#ip dhcp pool NAME

R1(dhcp-config)#network 10.0.0.0 255.255.255.0

R1(dhcp-config)#default-router 10.0.0.1

R1(dhcp-config)#end

R1#config t

Enter configuration commands, one per line. End with CNTL/Z.

R1(config)#ip dhcp pool NAME1

R1(dhcp-config)#network 20.0.0.0 255.255.255.0

R1(dhcp-config)#default-router 20.0.0.1

PC1)

```

PC1> dhcp
DDORA IP 10.0.0.2/24 GW 10.0.0.1

PC1> show ip

NAME          : PC1[1]
IP/MASK       : 10.0.0.2/24
GATEWAY       : 10.0.0.1
DNS           :
DHCP SERVER   : 10.0.0.1
DHCP LEASE    : 86395, 86400/43200/75600
MAC           : 00:50:79:66:68:00
LPORT        : 10020
RHOST:PORT    : 127.0.0.1:10021
MTU           : 1500

```

PC3)

```

PC3> show ip

NAME          : PC3[1]
IP/MASK       : 0.0.0.0/0
GATEWAY       : 0.0.0.0
DNS           :
MAC           : 00:50:79:66:68:02
LPORT        : 10024
RHOST:PORT    : 127.0.0.1:10025
MTU           : 1500

PC3> dhcp
DDORA IP 10.0.0.4/24 GW 10.0.0.1

```

PC4)

pc4capture.pcapng [Switch2 Ethernet0 to PC4 Ethernet0]

File Edit View Go Capture Analyze Statistics Telephony Wireless Tools Help

Apply a display filter ... <Ctrl-/>

No.	Time	Source	Destination	Protocol	Length	Info
1	0.000000	0.0.0.0	255.255.255.255	DHCP	406	DHCP Discover - Transaction ID 0x68f9bf3d
2	0.011360	c4:01:12:9b:00:01	Broadcast	ARP	60	Who has 20.0.0.2? Tell 20.0.0.1
3	1.000056	0.0.0.0	255.255.255.255	DHCP	406	DHCP Discover - Transaction ID 0x68f9bf3d
4	1.672548	20.0.0.1	20.0.0.2	DHCP	342	DHCP Offer - Transaction ID 0x68f9bf3d
5	1.682673	20.0.0.1	20.0.0.2	DHCP	342	DHCP Offer - Transaction ID 0x68f9bf3d
6	4.000148	0.0.0.0	255.255.255.255	DHCP	406	DHCP Request - Transaction ID 0x68f9bf3d
7	4.002901	20.0.0.1	20.0.0.2	DHCP	342	DHCP ACK - Transaction ID 0x68f9bf3d
8	5.000330	Private_66:68:03	Broadcast	ARP	64	Gratuitous ARP for 20.0.0.2 (Request)
9	6.001277	Private_66:68:03	Broadcast	ARP	64	Gratuitous ARP for 20.0.0.2 (Request)
10	7.002234	Private_66:68:03	Broadcast	ARP	64	Gratuitous ARP for 20.0.0.2 (Request)

```

PC4> show ip

NAME          : PC4[1]
IP/MASK       : 0.0.0.0/0
GATEWAY       : 0.0.0.0
DNS           :
MAC           : 00:50:79:66:68:03
LPORT        : 10026
RHOST:PORT    : 127.0.0.1:10027
MTU           : 1500

PC4> dhcp
DDORA IP 20.0.0.2/24 GW 20.0.0.1

PC4>

```

Q4)

