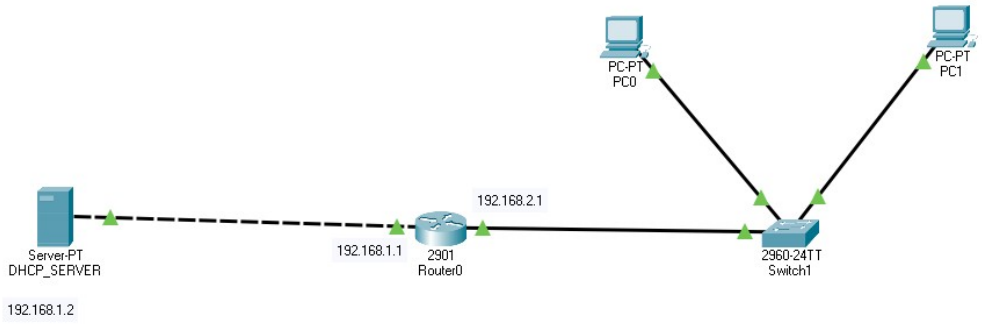
Name : Jawad Ahmed

Roll No : 20P-0165

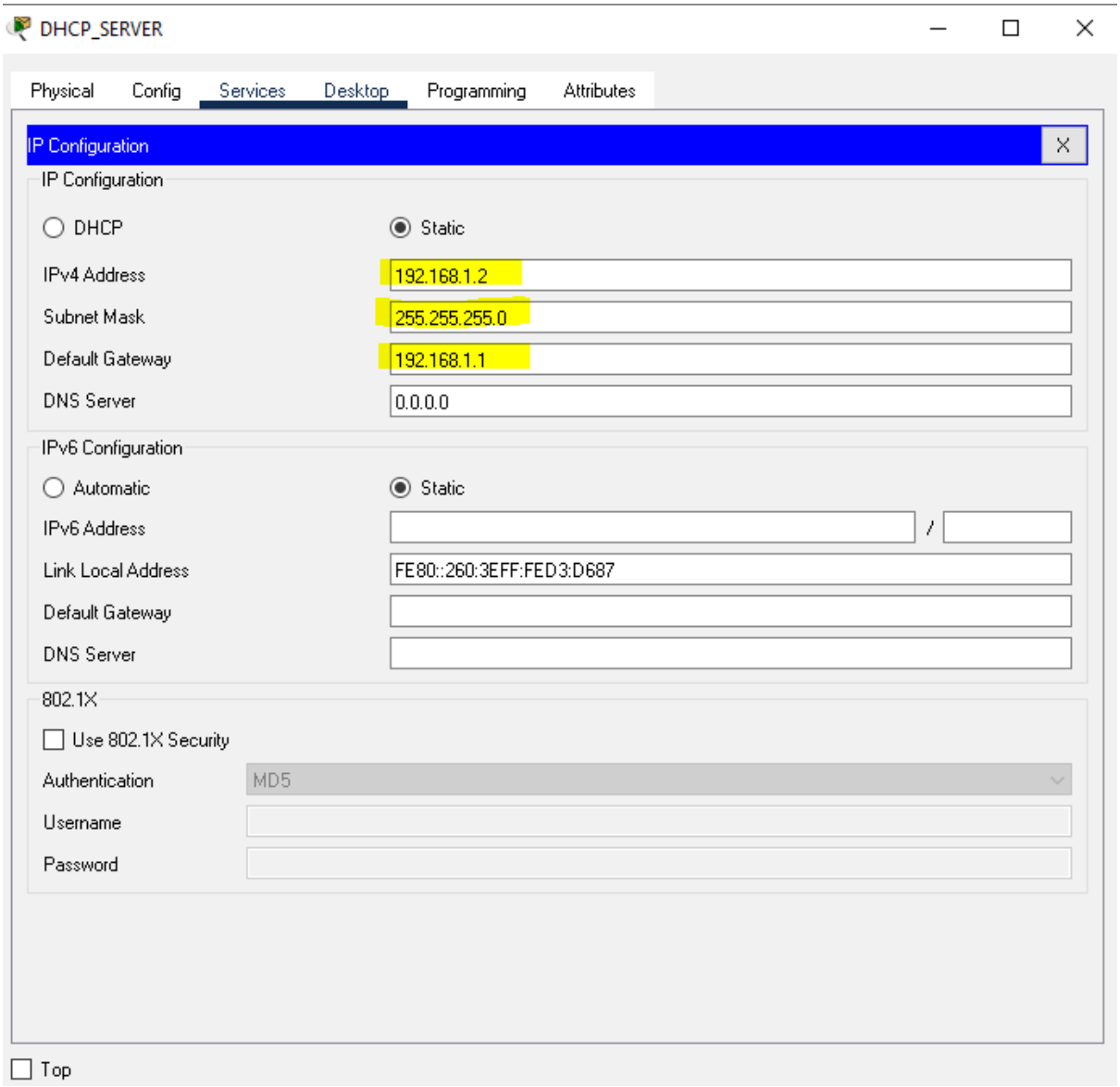
Section : BCS-5A

Lab No 5

- **Lab Task is starting From Page 7**
- **Task1: Configuring an IP helper address:**
  Step1: Create This Topology



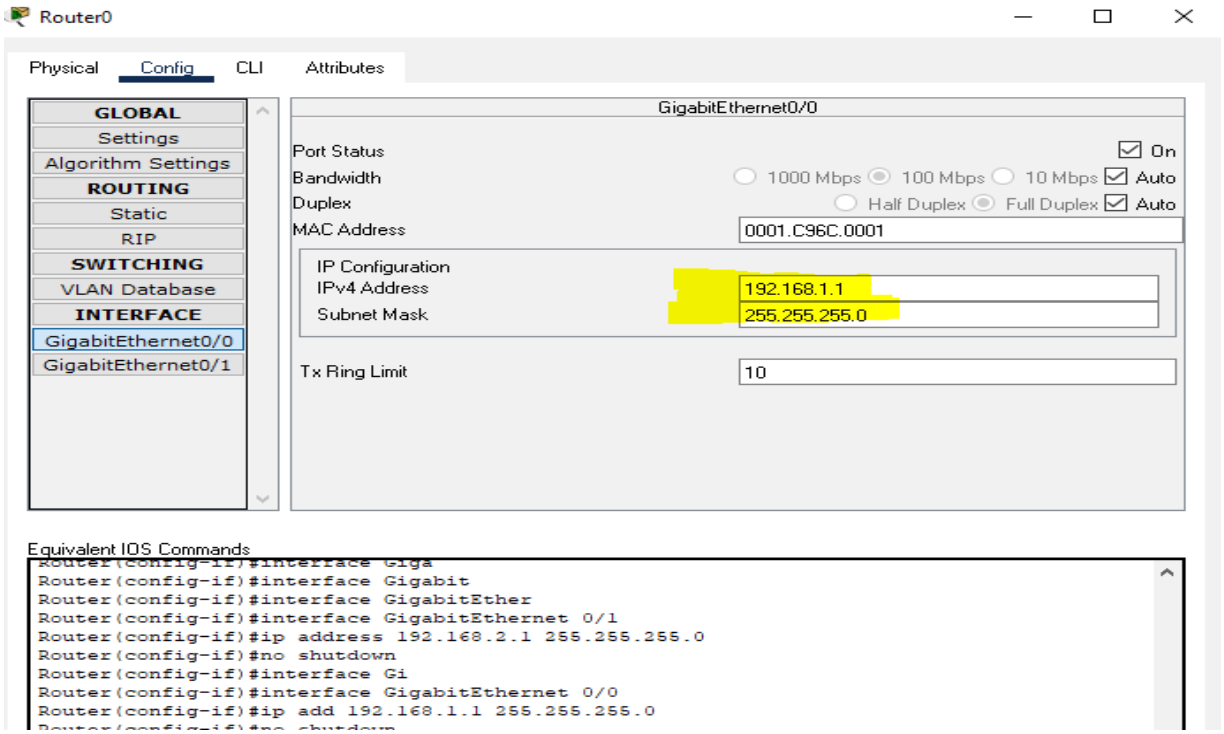
Step2: After Creating this topology Assign IP addresses to the Server.
Server: IP address: 192.168.1.2 Subnet mask: 255.255.255.0 Default gateway: 192.168.1.1

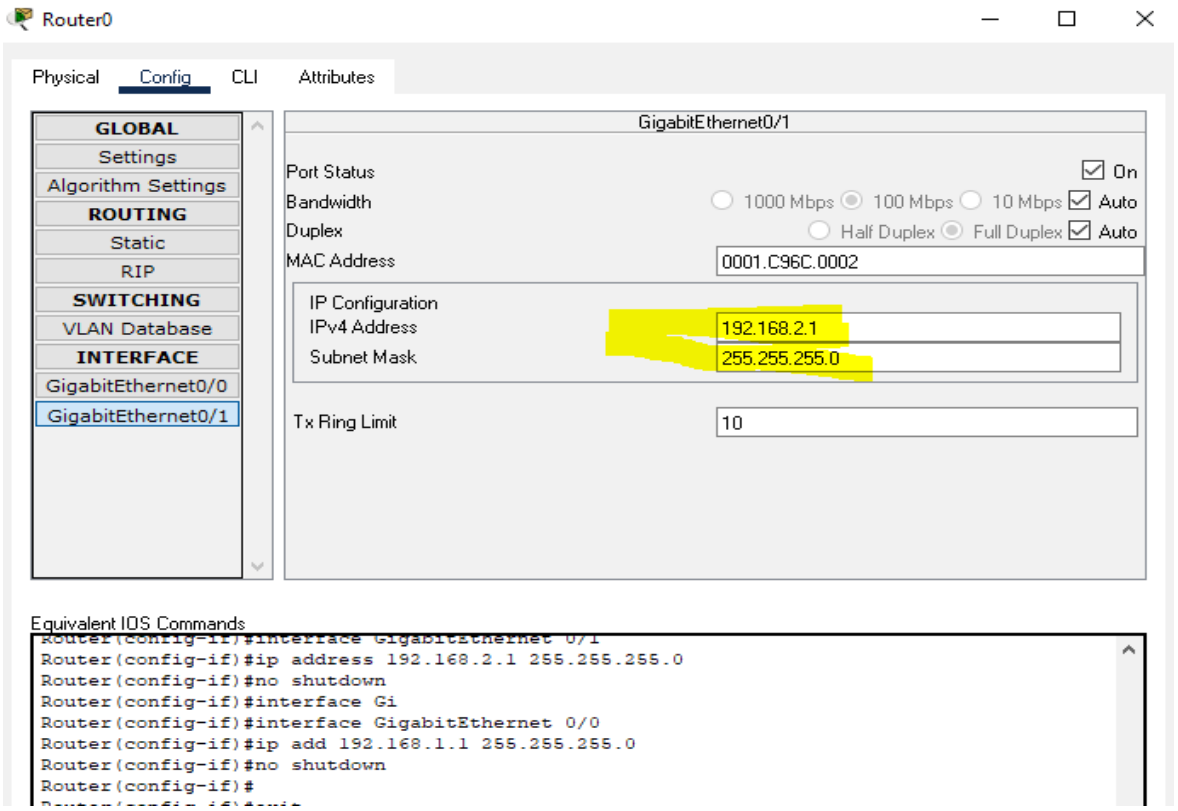


Step3: Do Router Interface Configurations.

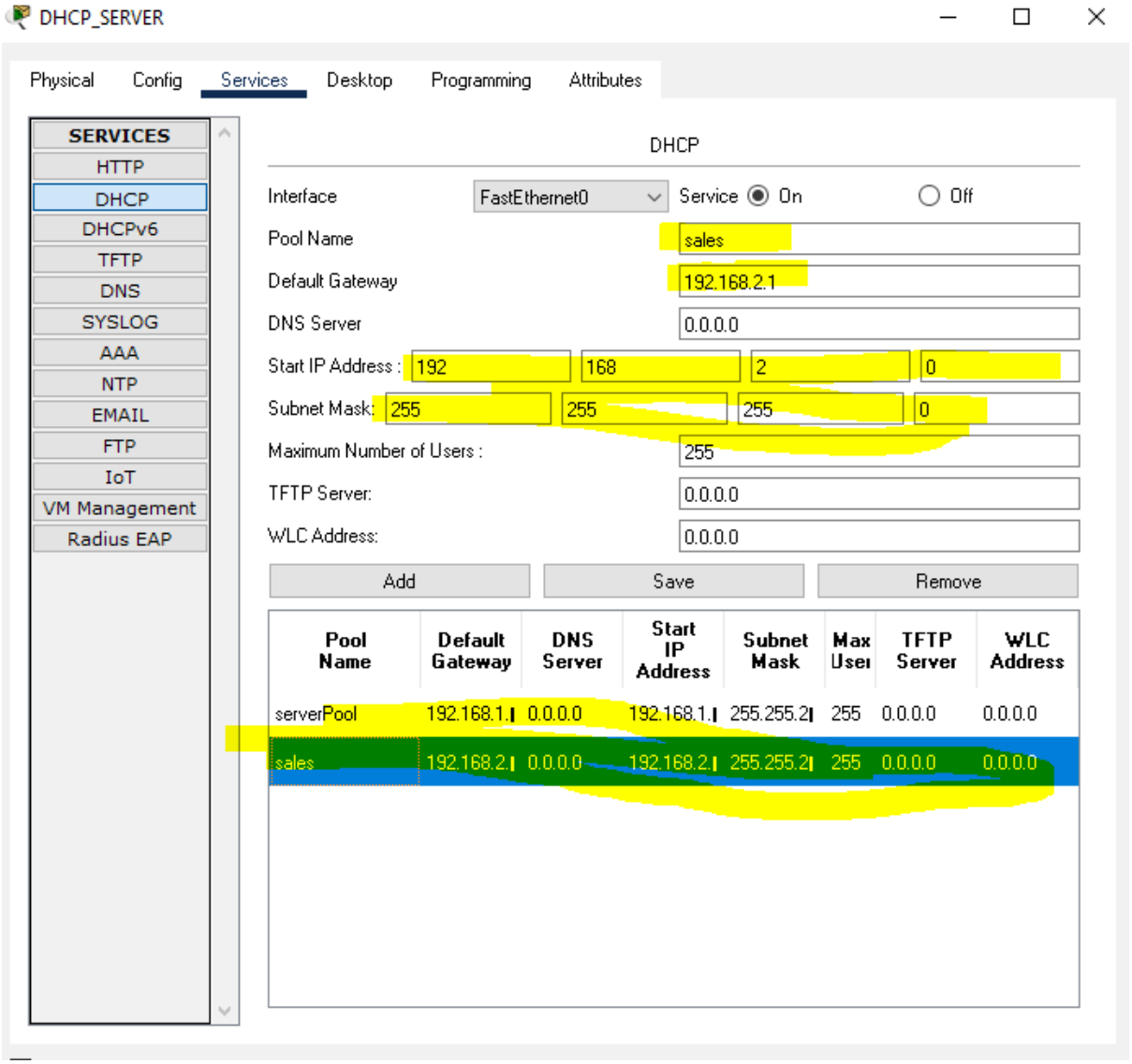
```
Router(config-if)#
Router(config-if)#
Router(config-if)#
Router(config-if)#interface Gi
Router(config-if)#interface Giga
Router(config-if)#interface Gigabit
Router(config-if)#interface GigabitEther
Router(config-if)#interface GigabitEthernet 0/1
Router(config-if)#ip address 192.168.2.1 255.255.255.0
Router(config-if)#no shutdown
Router(config-if)#interface Gi
Router(config-if)#interface GigabitEthernet 0/0
Router(config-if)#ip add 192.168.1.1 255.255.255.0
Router(config-if)#no shutdown
Router(config-if)#
```

Ctrl+F6 to exit CLI focus


Router0
Physical
Config
CLI
Attributes
GLOBAL
Settings
Algorithm Settings
ROUTING
Static
RIP
SWITCHING
VLAN Database
INTERFACE
GigabitEthernet0/0
GigabitEthernet0/1
GigabitEthernet0/0
Port Status
On
Bandwidth
1000 Mbps
100 Mbps
10 Mbps
Auto
Duplex
Half Duplex
Full Duplex
Auto
MAC Address
0001.C96C.0001
IP Configuration
IPv4 Address
192.168.1.1
Subnet Mask
255.255.255.0
Tx Ring Limit
10
Equivalent IOS Commands
Router(config-if)#interface Giga
Router(config-if)#interface Gigabit
Router(config-if)#interface GigabitEther
Router(config-if)#interface GigabitEthernet 0/1
Router(config-if)#ip address 192.168.2.1 255.255.255.0
Router(config-if)#no shutdown
Router(config-if)#interface Gi
Router(config-if)#interface GigabitEthernet 0/0
Router(config-if)#ip add 192.168.1.1 255.255.255.0


Router0
Physical
Config
CLI
Attributes
GLOBAL
Settings
Algorithm Settings
ROUTING
Static
RIP
SWITCHING
VLAN Database
INTERFACE
GigabitEthernet0/0
GigabitEthernet0/1
GigabitEthernet0/1
Port Status
On
Bandwidth
1000 Mbps
100 Mbps
10 Mbps
Auto
Duplex
Half Duplex
Full Duplex
Auto
MAC Address
0001.C96C.0002
IP Configuration
IPv4 Address
192.168.2.1
Subnet Mask
255.255.255.0
Tx Ring Limit
10
Equivalent IOS Commands
Router(config-if)#interface GigabitEthernet 0/1
Router(config-if)#ip address 192.168.2.1 255.255.255.0
Router(config-if)#no shutdown
Router(config-if)#interface Gi
Router(config-if)#interface GigabitEthernet 0/0
Router(config-if)#ip add 192.168.1.1 255.255.255.0
Router(config-if)#no shutdown
Router(config-if)#

Step4: Enable DHCP services and create a pool of IP addresses.

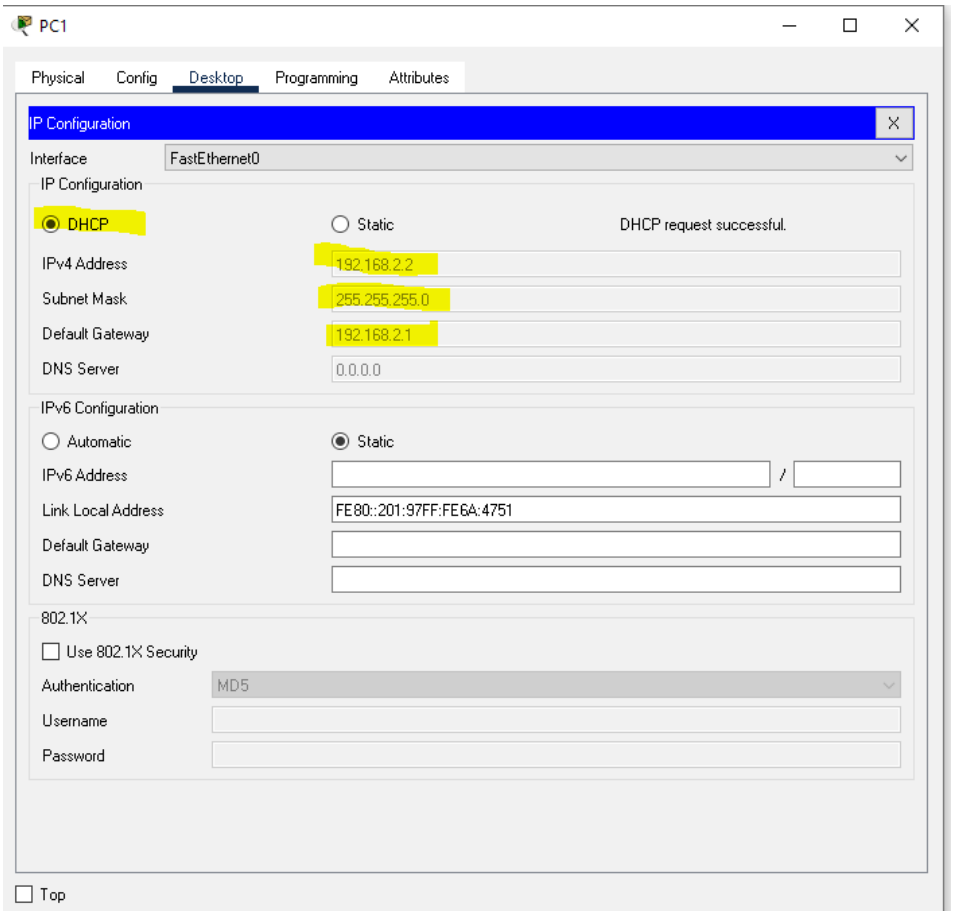


Step5: Add helper ip address using router cli.

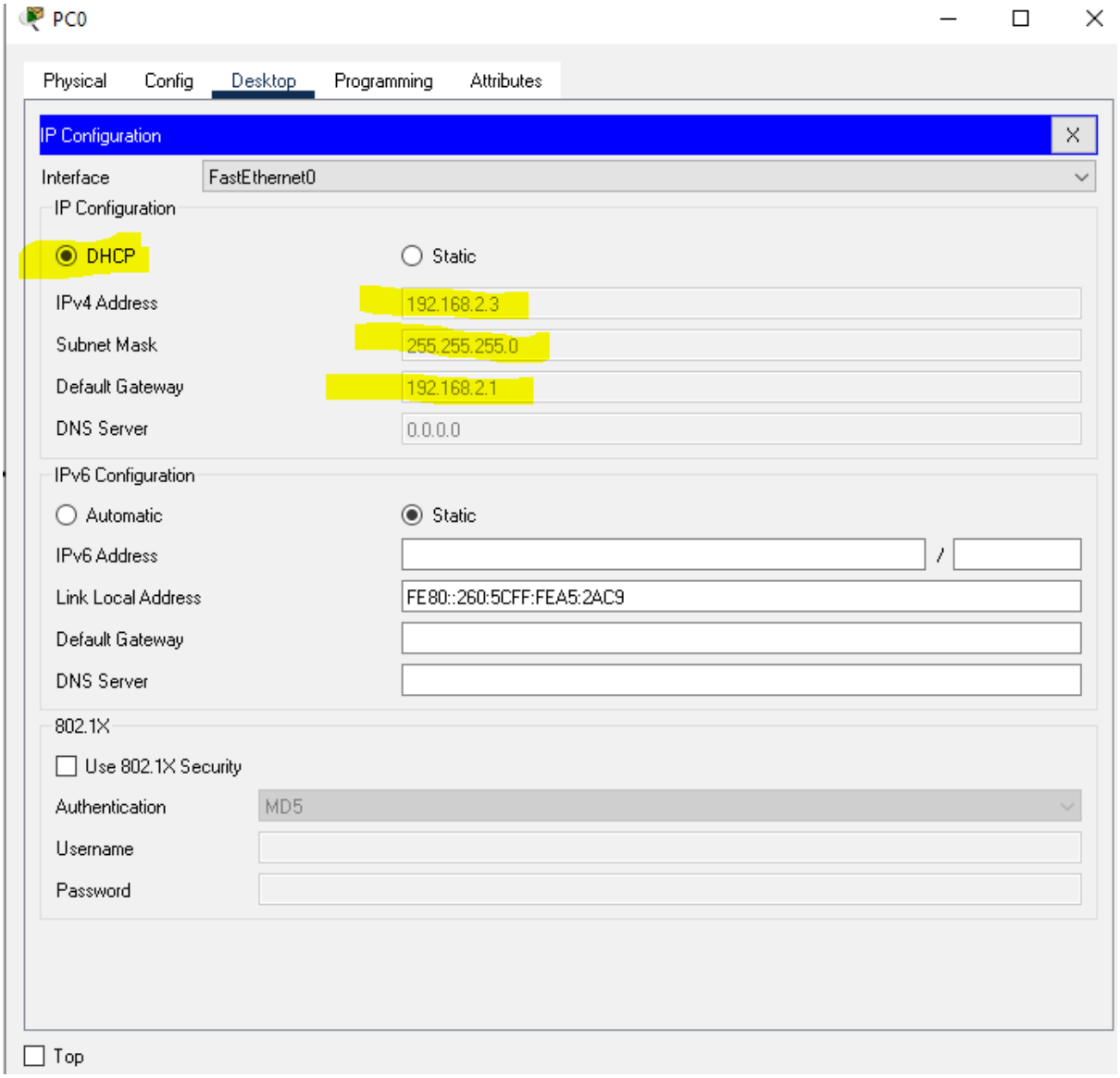
```
Router(config-if)#ip address 192.168.2.1 255.255.255.0
Router(config-if)#no shutdown
Router(config-if)#interface Gi
Router(config-if)#interface GigabitEthernet 0/0
Router(config-if)#ip add 192.168.1.1 255.255.255.0
Router(config-if)#no shutdown
Router(config-if)#
Router(config-if)#exit
Router(config)#interface GigabitEthernet0/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface GigabitEthernet0/1
Router(config-if)#interface GigabitEthernet0/1
Router(config-if)#ip helper-address 192.168.1.2
Router(config-if)#
```

Ctrl+F6 to exit CLI focus

Step6: Now go to the PC1 and enable **DHCP** in it IP addresses will be assigned.



Same goes for PC0.


PC0
Physical
Config
Desktop
Programming
Attributes
IP Configuration
Interface
FastEthernet0
IP Configuration
DHCP
Static
IPv4 Address
192.168.2.3
Subnet Mask
255.255.255.0
Default Gateway
192.168.2.1
DNS Server
0.0.0.0
IPv6 Configuration
Automatic
Static
IPv6 Address
Link Local Address
FE80::260:5CFF:FEA5:2AC9
Default Gateway
DNS Server
802.1X
Use 802.1X Security
Authentication
MD5
Username
Password
Top

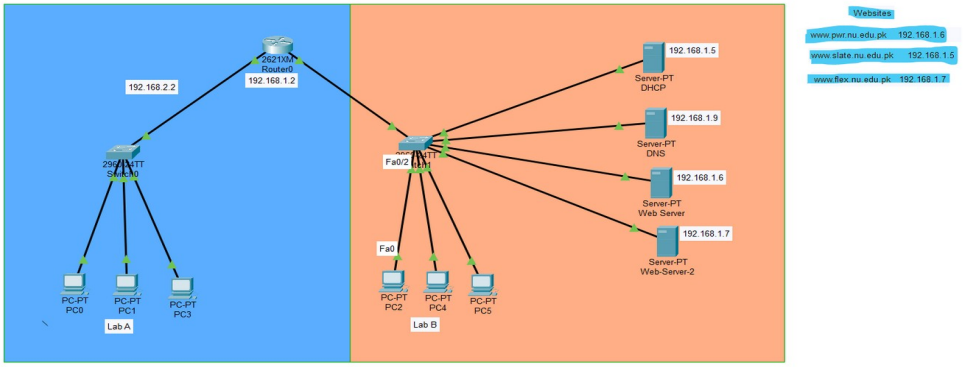
Lab Task:

Lab Task

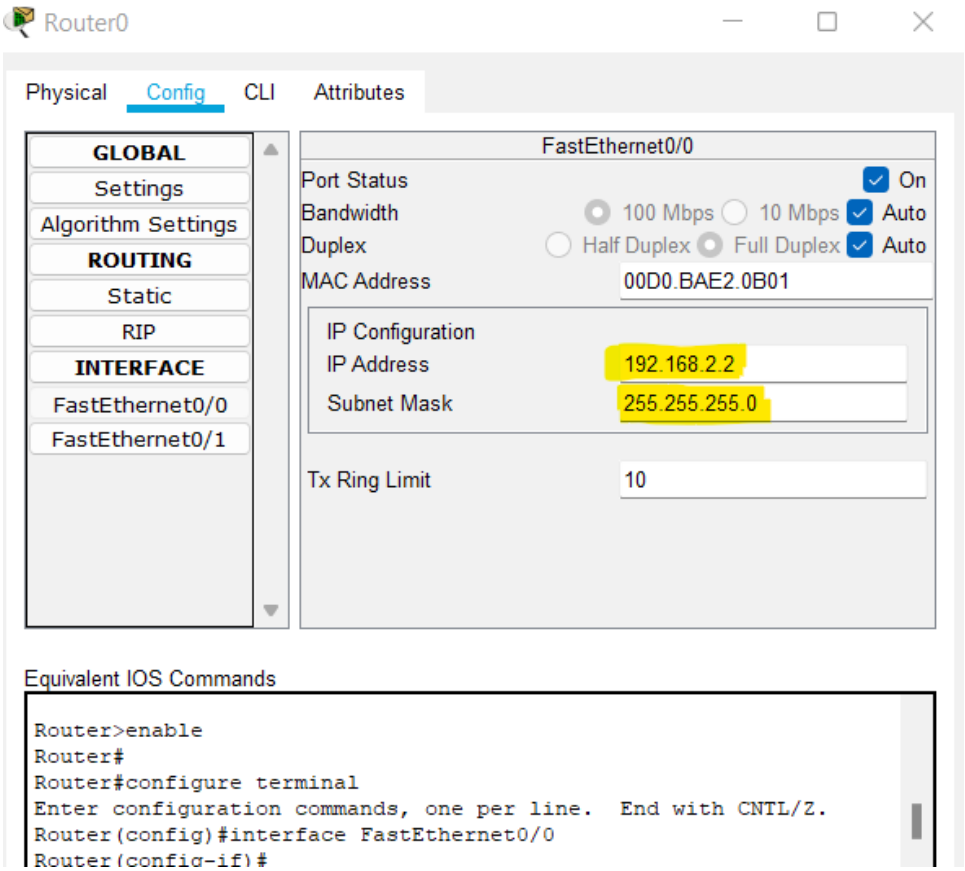
Students should make the scenario exactly implemented in Lab 4 and implement the following:

1. We have three website each of them is stored on separate Web Server,
   - (www.slate.nu.edu.pk or state.nu.edu.pk) having IP address 192.168.1.5
   - (www.pwr.nu.edu.pk or pwr.nu.edu.pk) having IP address 192.168.1.6
   - (www.flex.nu.edu.pk or flex.nu.edu.pk) having IP address 192.168.1.7
2. A DHCP server and a DNS server configured as follow:
   - DHCP IP : 192.168.1.9
   - DNS Server IP : 192.168.1.4
3. We are going to make Two Labs "**Lab A**" and "**Lab B**". In each Lab there are three PC's. We want to use DHCP Server to avoid static IP's. We also have our own DNS Server. Use the Class C IP Address like 192.168.1.0 or 192.168.2.0

Step1: Create This Topology.



Step2: Assign Ip Addresses to the Router to both the wires **FastEthernet0/0** and **FastEthernet0/1.**

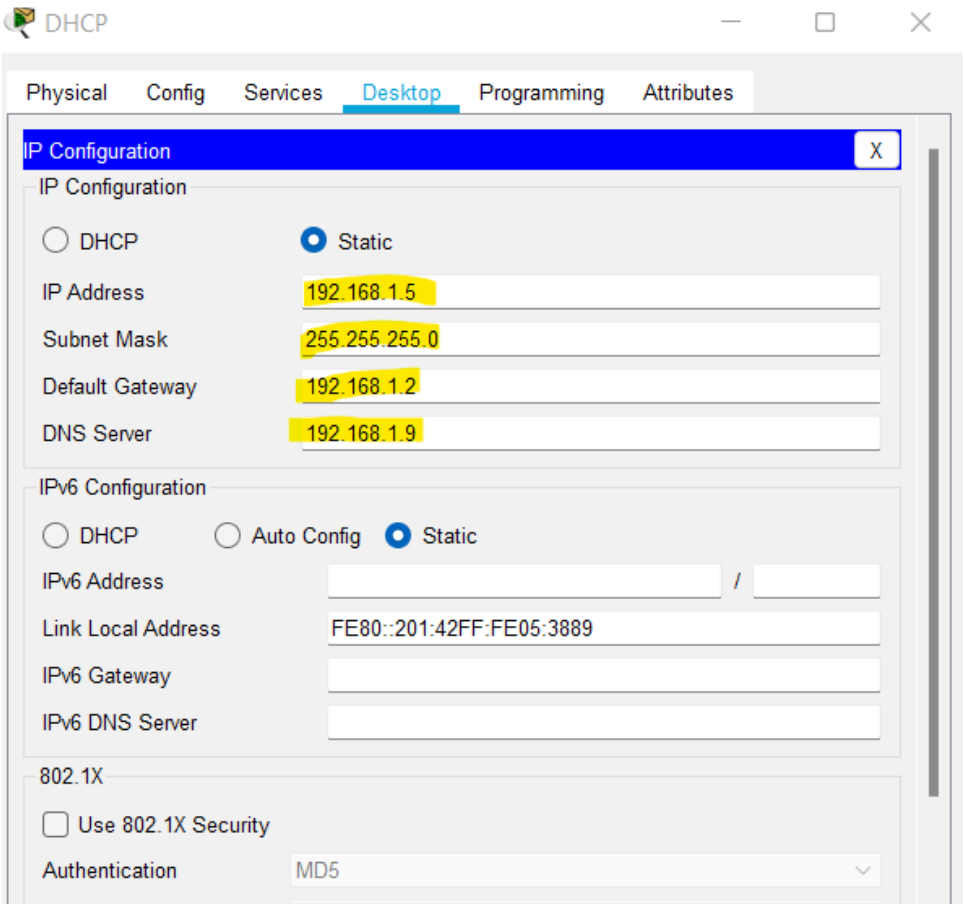


Step3: Go to router CLI and Add Pool P1 and P2.

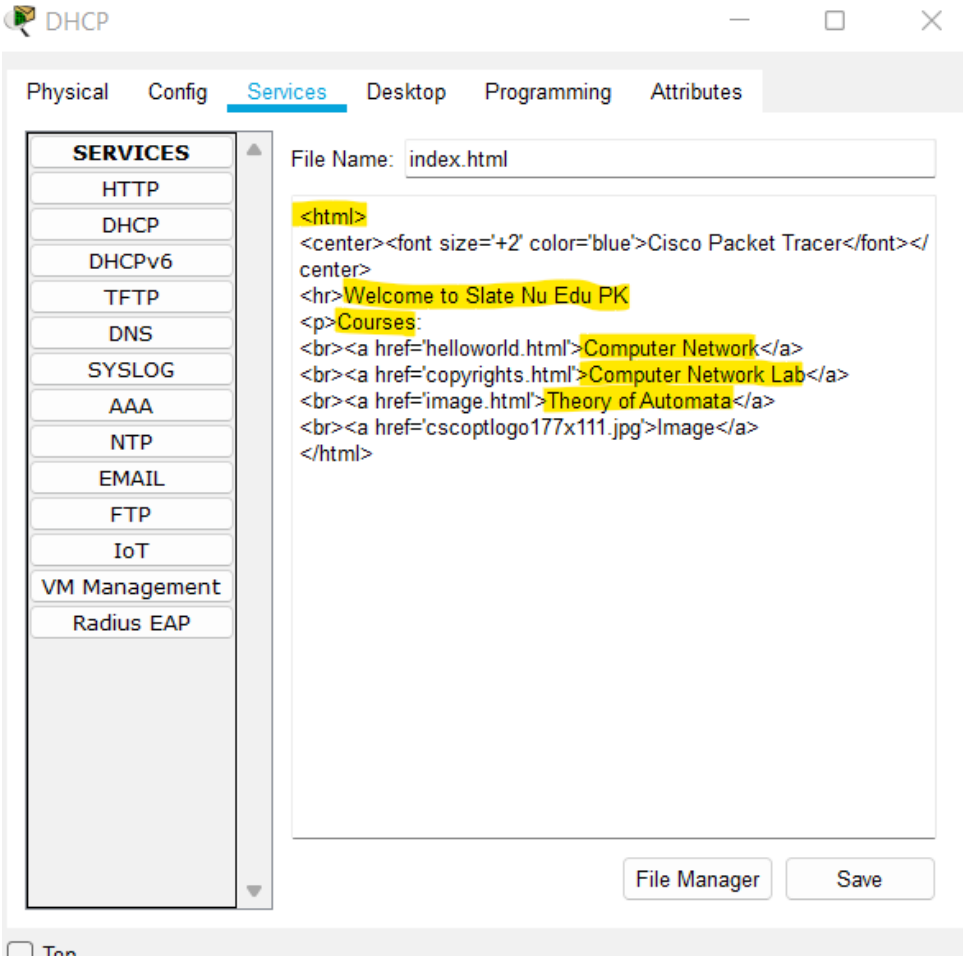
```
Router#
Router#
Router#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#
Router(config)#ip dhcp pool P1
Router(dhcp-config)#network 192.168.1.0 255.255.255.0
Router(dhcp-config)#default-router 192.168.1.2
Router(dhcp-config)#ip dhcp pool P2
Router(dhcp-config)#network 192.168.2.0 255.255.255.0
Router(dhcp-config)#default-router 192.168.2.2
Router(dhcp-config)#%DHCPD-4-PING_CONFLICT: DHCP address
conflict:  server pinged 192.168.2.2.
```

Step4: We need three servers to have three websites. Assign the given IP addresses to the three servers and edit the index file as per your need.

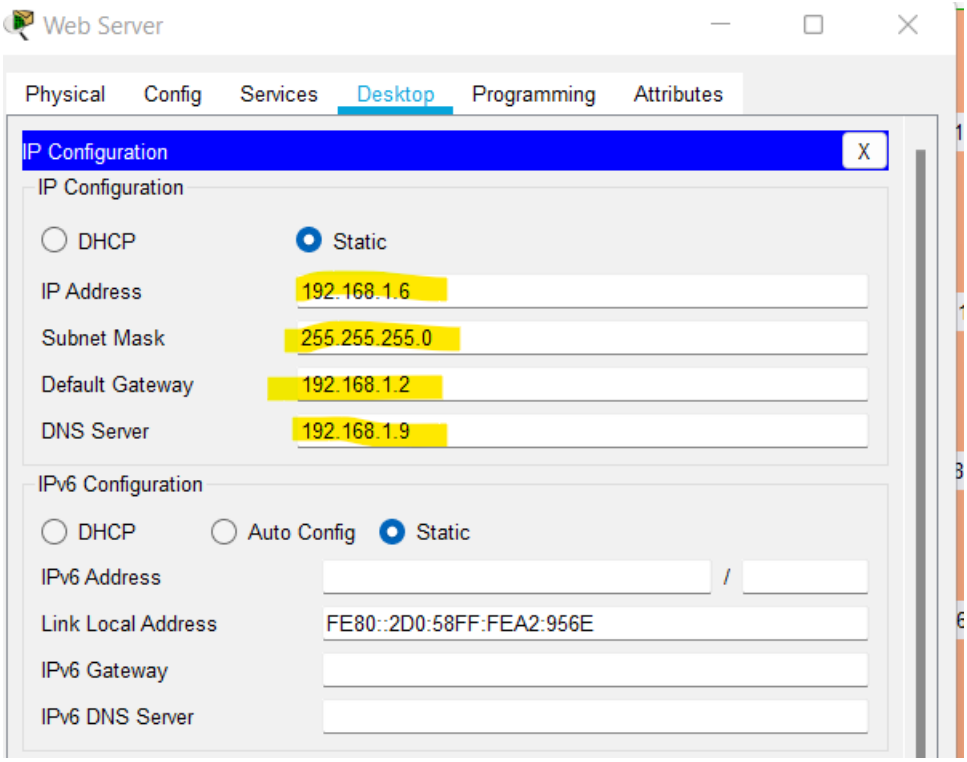
First Edit DHCP server 192.168.1.5 => slate



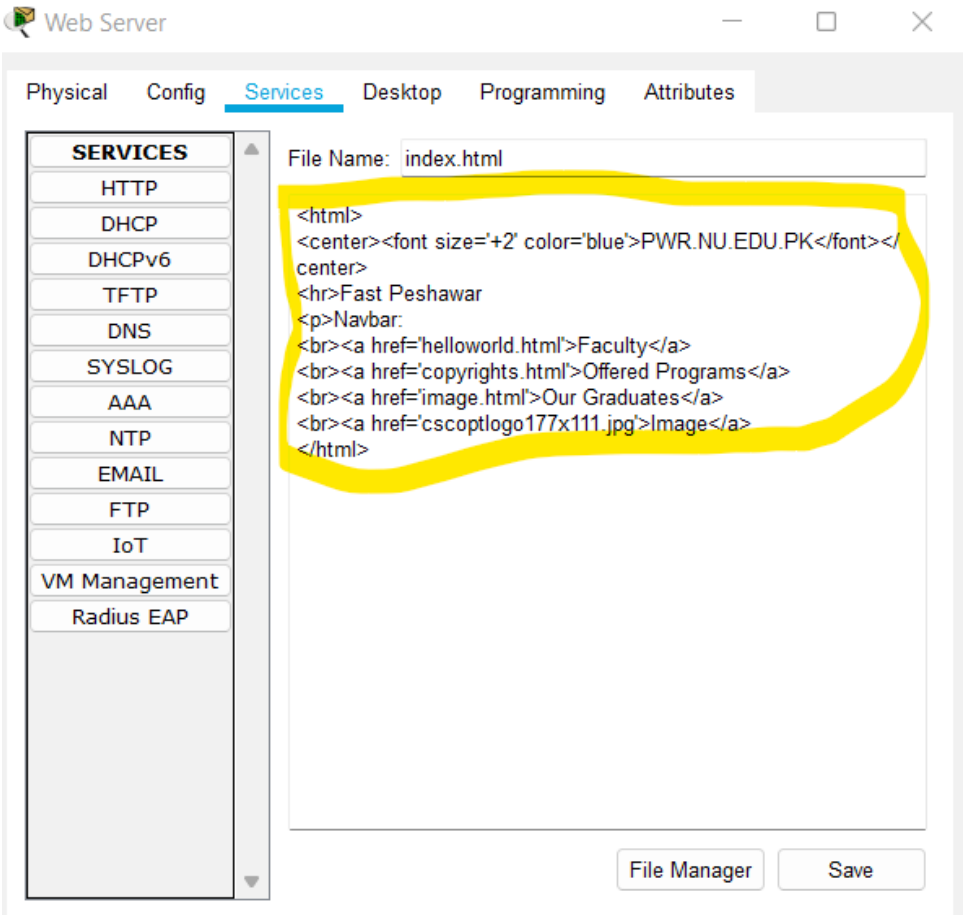
Go to the services and then Edit the index.html file.



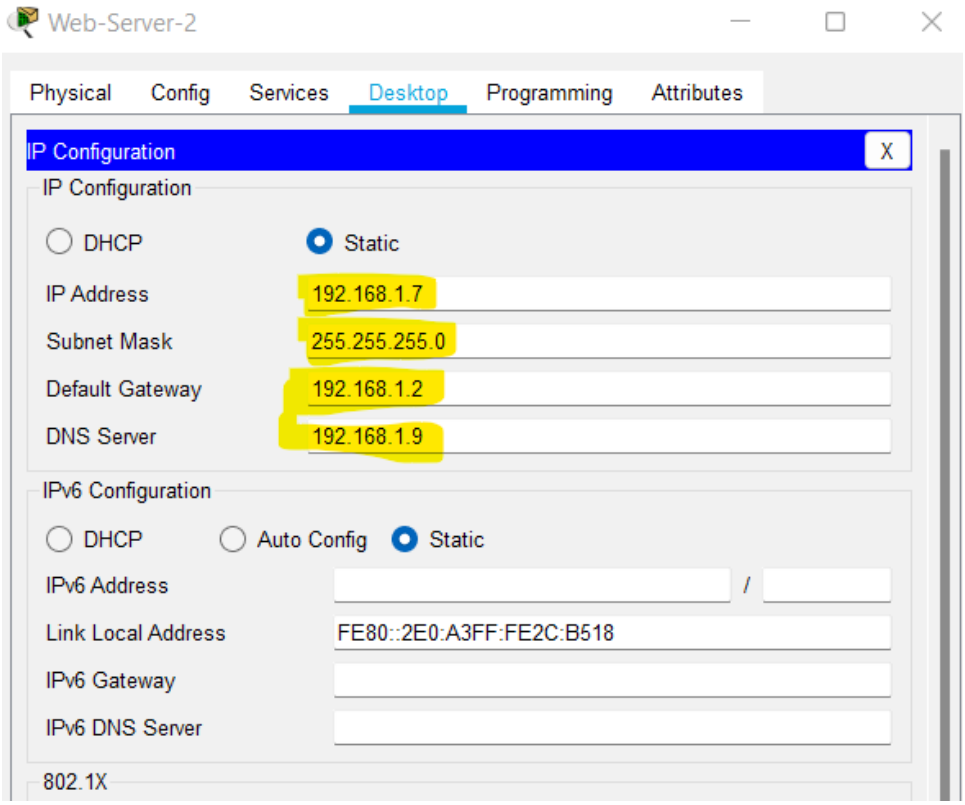
Second Edit Web Server 192.168.1.6 => pwr.



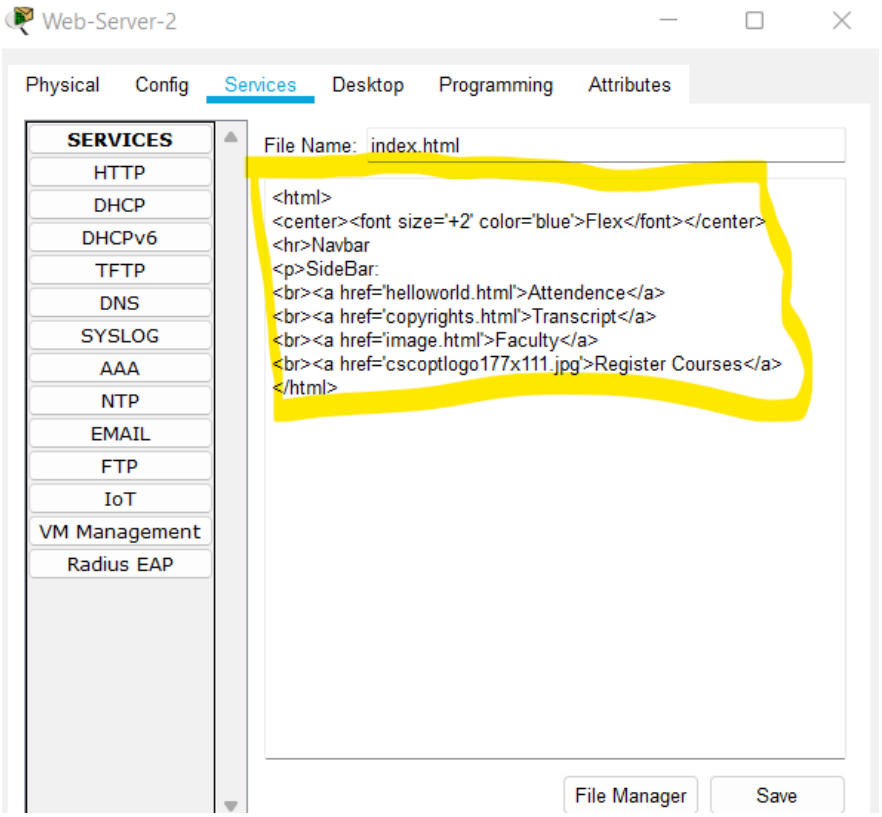
Go to the Services Tab and Edit the index.html file as per your need.



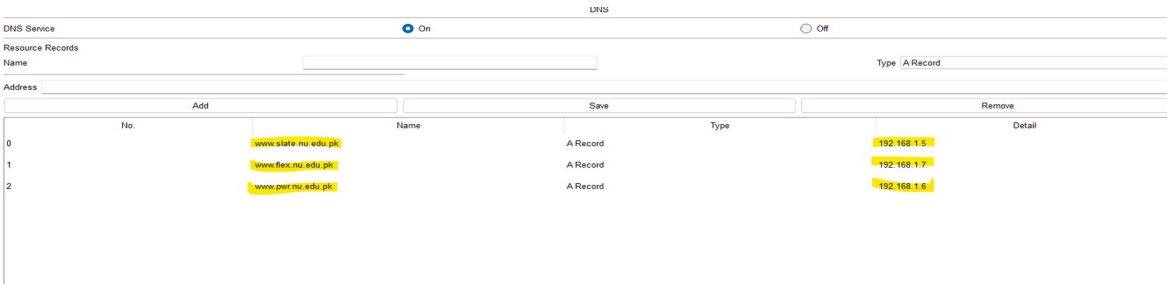
Third Edit Web Server-2 server 192.168.1.7 => flex.



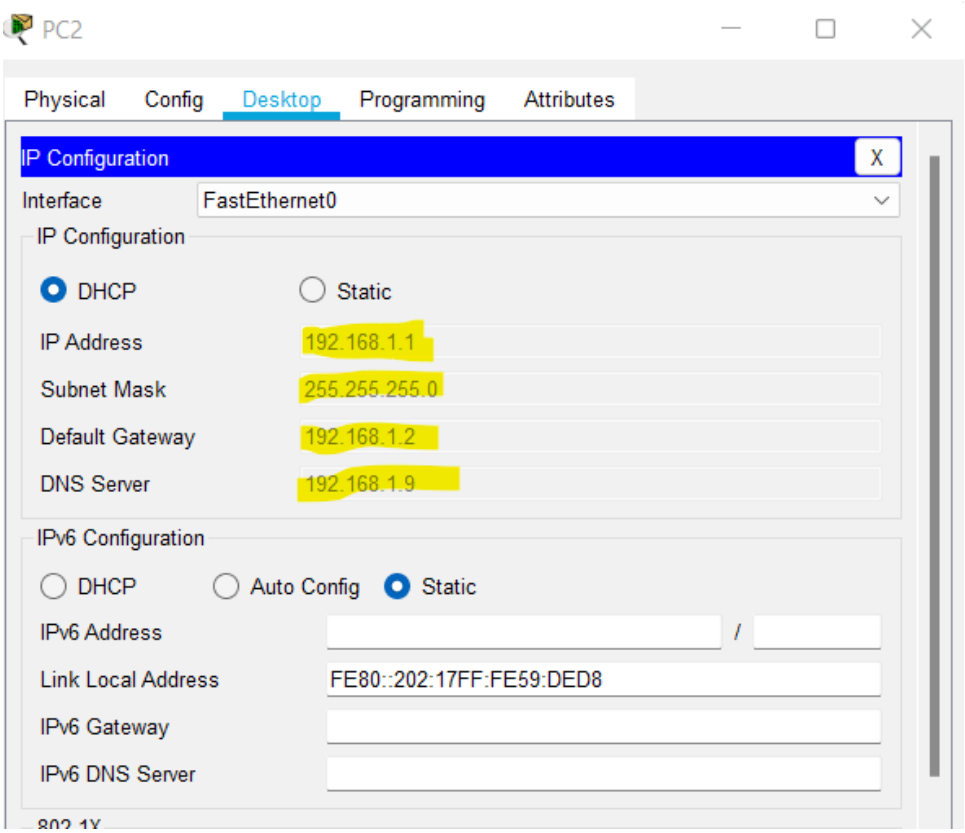
Then Edit the index.html file.



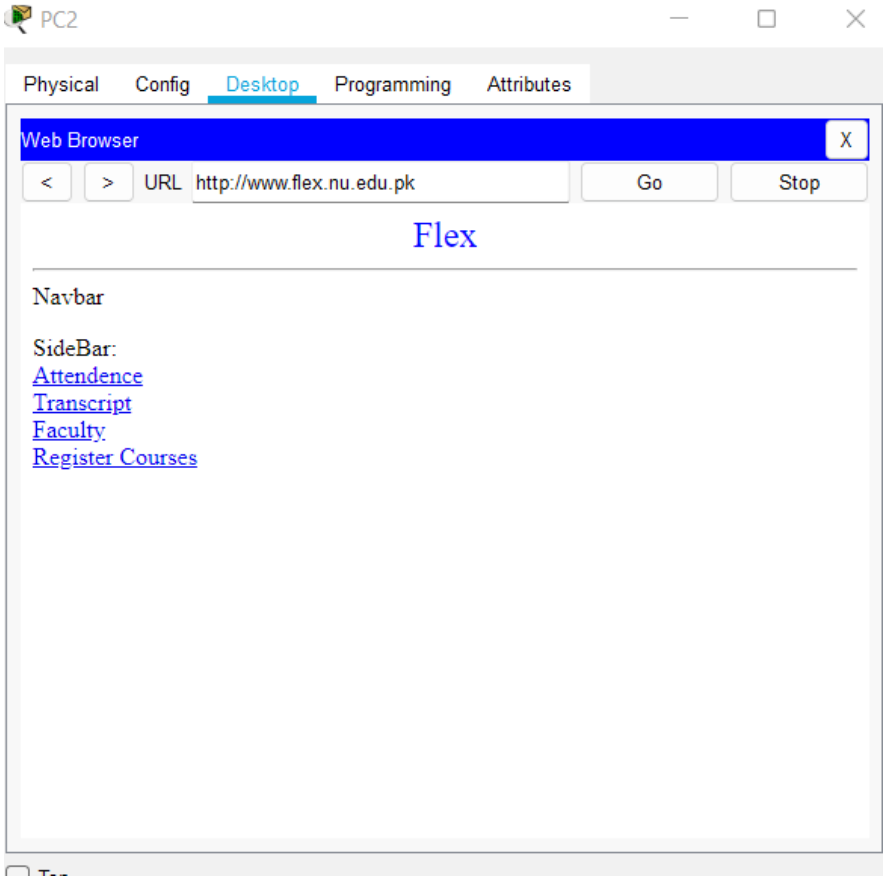
After All this done now **On the http and https service** in the **DNS server** and then add the websites and the servers IP addresses in the DNS server.

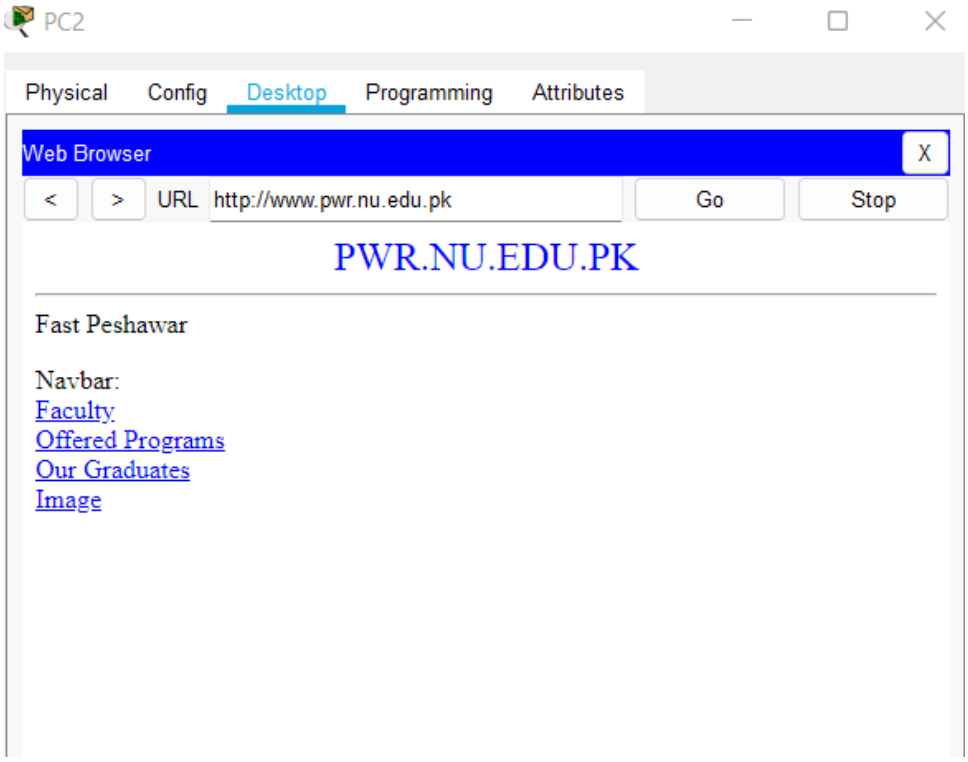


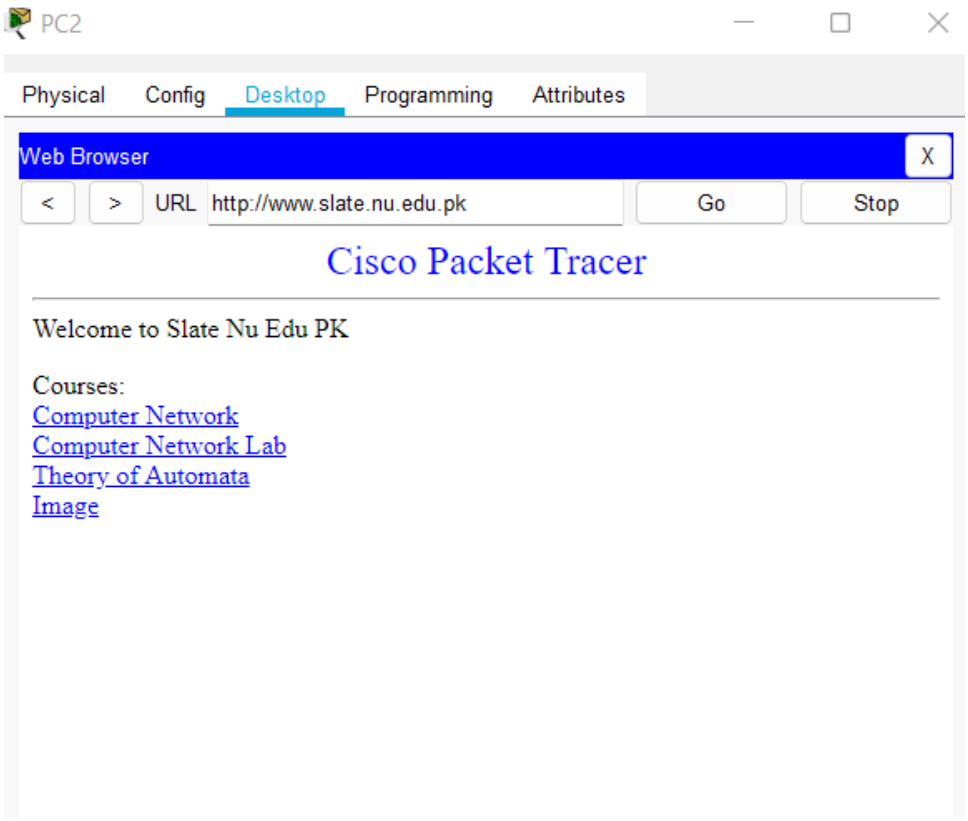
Now to Go the any Lab PC and then assign IP using the option DHCP. I am doing using the PC2.



Now open the browser and enter the website url. These are all the screeenshots of proof.


PC2
Physical
Config
Desktop
Programming
Attributes
Web Browser
X
<
>
URL
http://www.flex.nu.edu.pk
Go
Stop
Flex
Navbar
SideBar:
Attendence
Transcript
Faculty
Register Courses


PC2
Physical
Config
Desktop
Programming
Attributes
Web Browser
X
<
>
URL
http://www.pwr.nu.edu.pk
Go
Stop
PWR.NU.EDU.PK
Fast Peshawar
Navbar:
Faculty
Offered Programs
Our Graduates
Image


PC2
Physical
Config
Desktop
Programming
Attributes
Web Browser
X
<
>
URL
http://www.slate.nu.edu.pk
Go
Stop
Cisco Packet Tracer
Welcome to Slate Nu Edu PK
Courses:
Computer Network
Computer Network Lab
Theory of Automata
Image