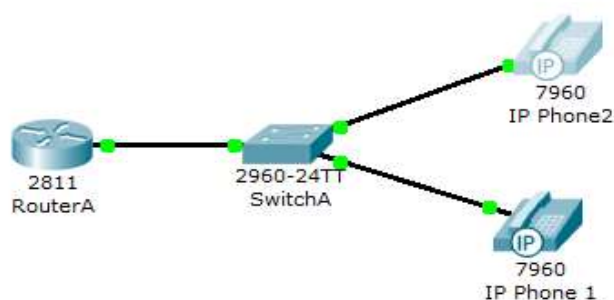
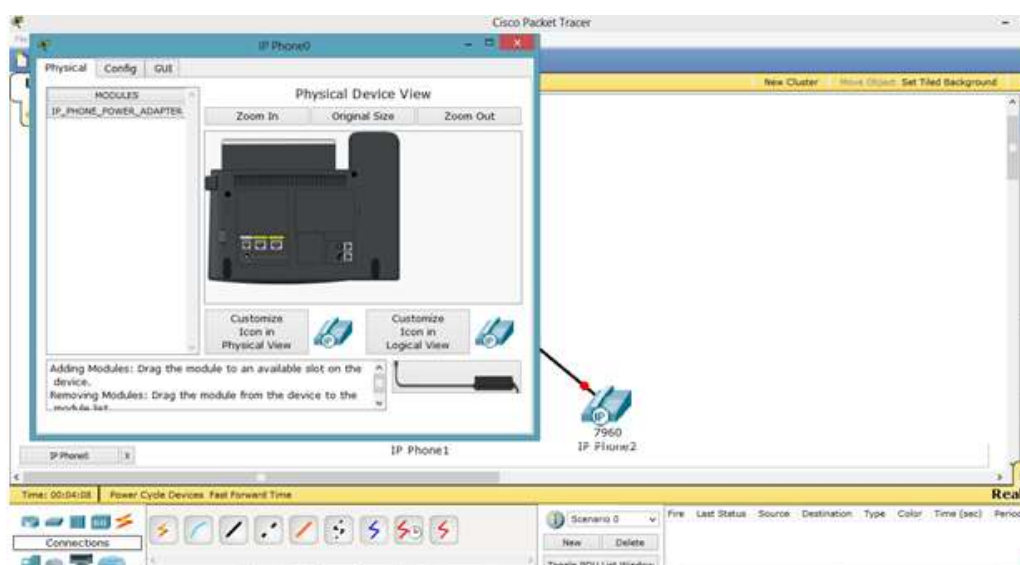


## Practical 09 Configure Voice Over IP(VOIP) in Packet Tracer.

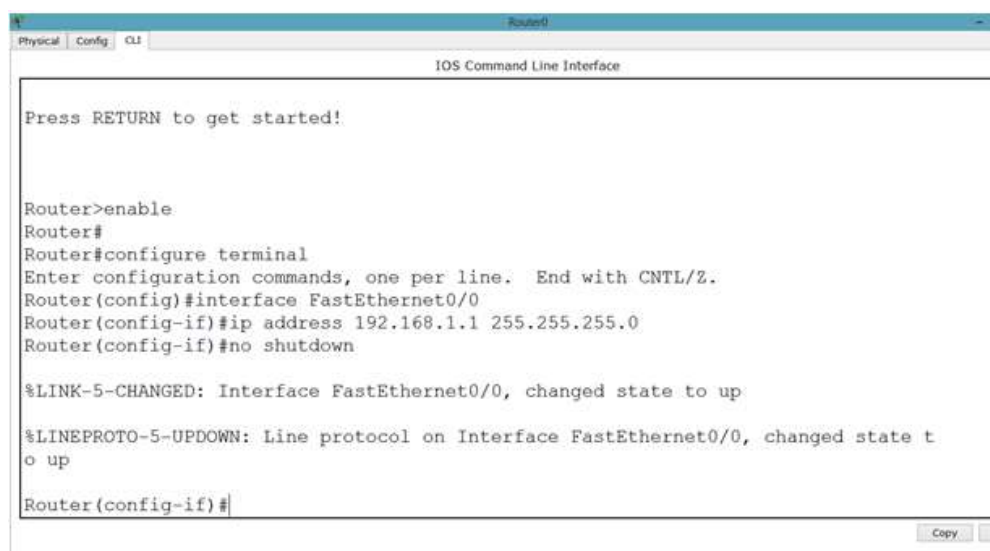
Step 1: Take one router and two IP phone and one switch and set proper connections among them.



Step 2 : when we try to go to any other mode its give us error and ask us to switch it on first. For that, go to Physical mode and put the power adapter (in the bottom right corner) into the phone as shown in figure.



Step 3 : Now, go to router and assign IP address.



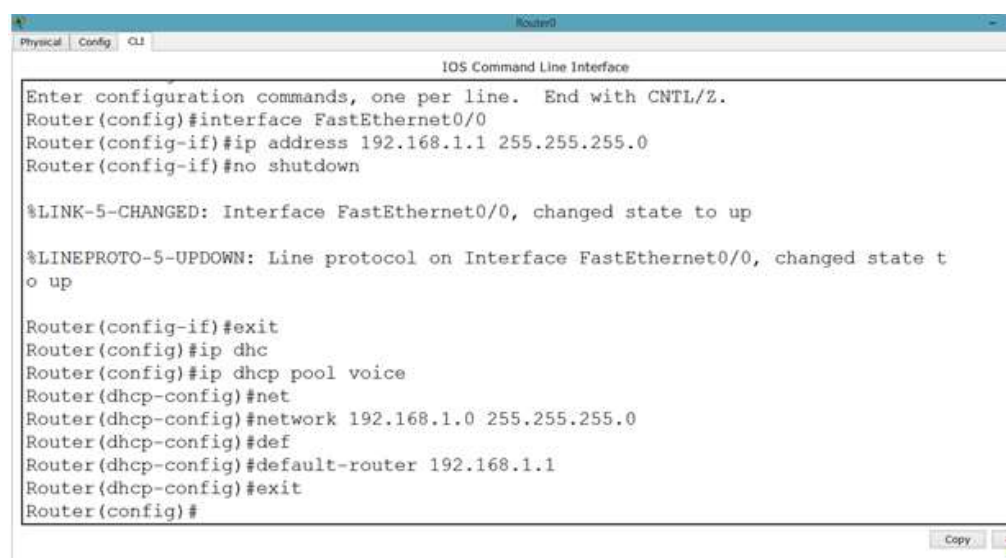
```
Router>enable
Router#
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface FastEthernet0/0
Router(config-if)#ip address 192.168.1.1 255.255.255.0
Router(config-if)#no shutdown

%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up

Router(config-if)#
```

Step 4 : We will have to set DHCP server on router to assign IP addresses to IP phones.



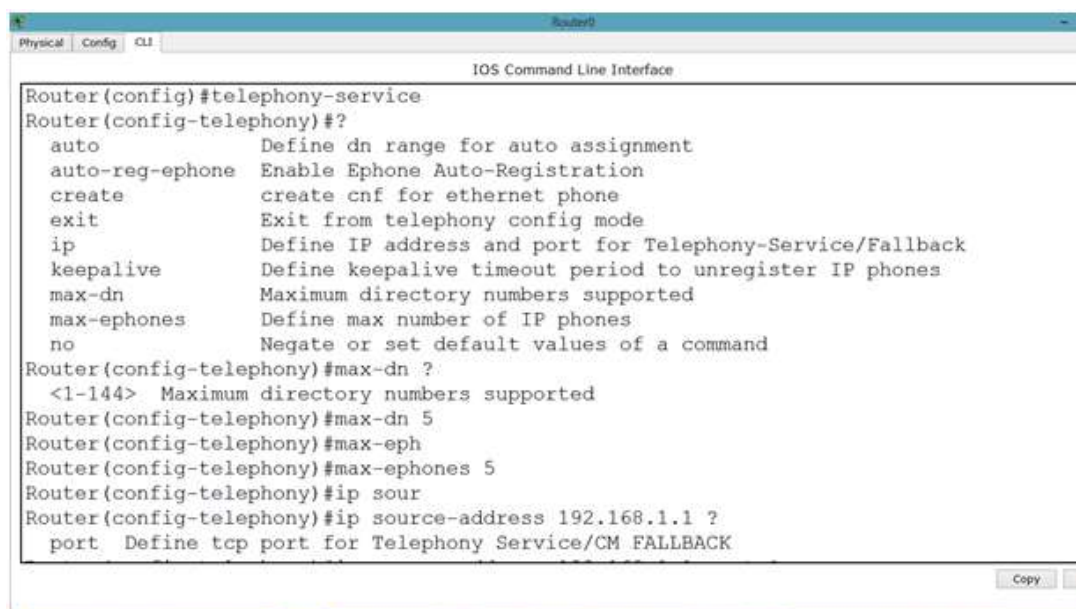
```
Router>enable
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface FastEthernet0/0
Router(config-if)#ip address 192.168.1.1 255.255.255.0
Router(config-if)#no shutdown

%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up

Router(config-if)#exit
Router(config)#ip dhcp
Router(config)#ip dhcp pool voice
Router(dhcp-config)#net
Router(dhcp-config)#network 192.168.1.0 255.255.255.0
Router(dhcp-config)#def
Router(dhcp-config)#default-router 192.168.1.1
Router(dhcp-config)#exit
Router(config)#
```

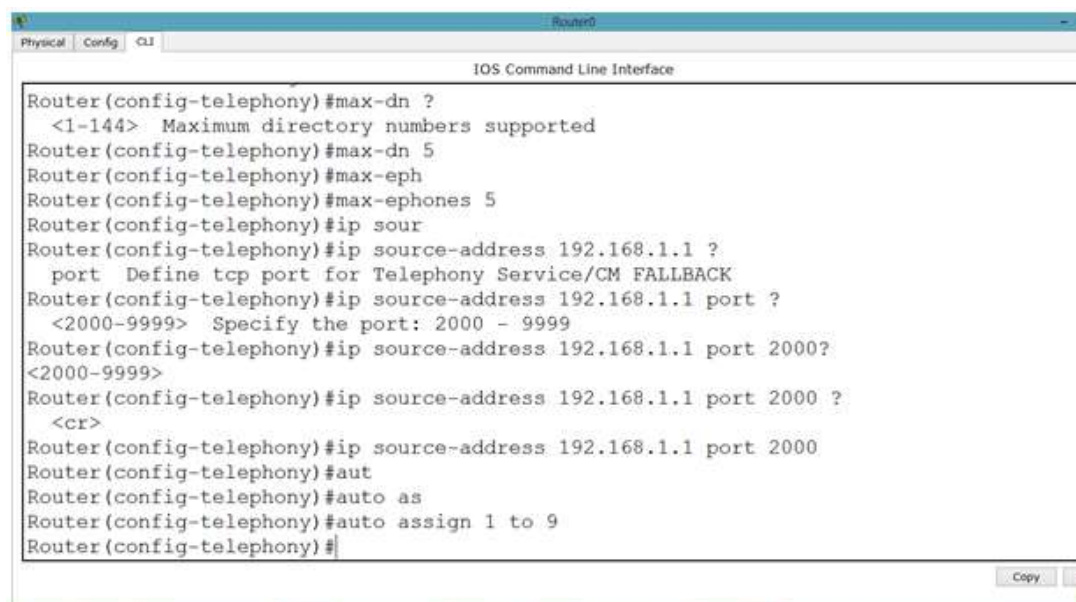
Step 5 : let us apply commands to the router for voip. You might have noticed we took 2811 series router because it facilitates the following commands.



```
Router0
Physical Config CLI
IOS Command Line Interface

Router(config)#telephony-service
Router(config-telephony)#?
  auto          Define dn range for auto assignment
  auto-reg-ephone Enable Ephone Auto-Registration
  create        create cnf for ethernet phone
  exit          Exit from telephony config mode
  ip            Define IP address and port for Telephony-Service/Fallback
  keepalive     Define keepalive timeout period to unregister IP phones
  max-dn        Maximum directory numbers supported
  max-ephones   Define max number of IP phones
  no            Negate or set default values of a command

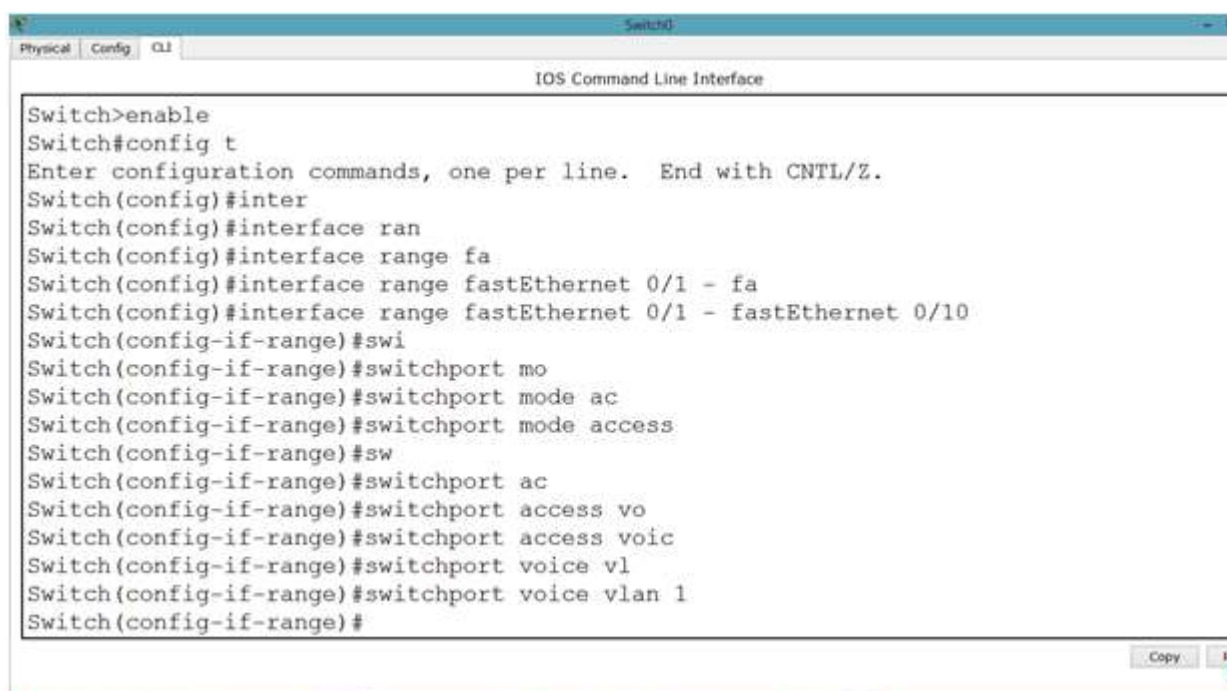
Router(config-telephony)#max-dn ?
  <1-144> Maximum directory numbers supported
Router(config-telephony)#max-dn 5
Router(config-telephony)#max-eph
Router(config-telephony)#max-ephones 5
Router(config-telephony)#ip sour
Router(config-telephony)#ip source-address 192.168.1.1 ?
  port Define tcp port for Telephony Service/CM FALLBACK
```



```
Router0
Physical Config CLI
IOS Command Line Interface

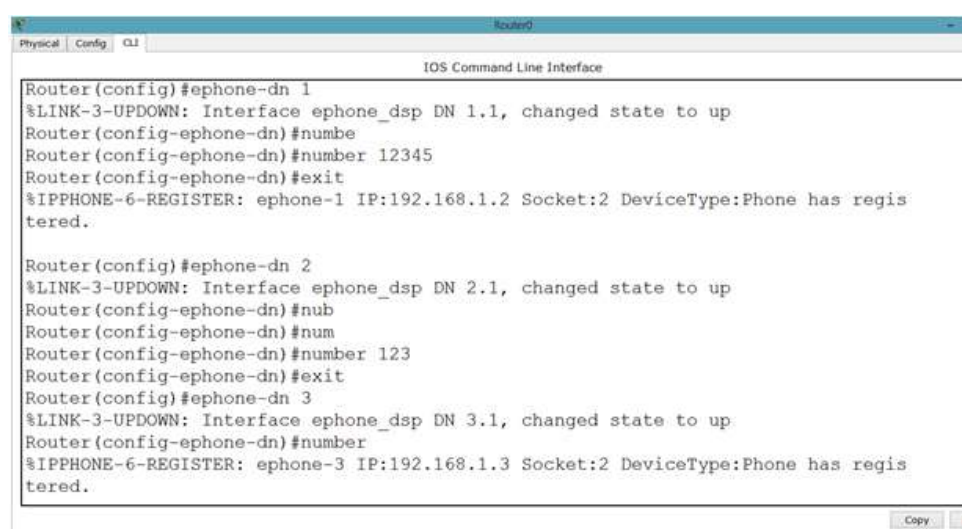
Router(config-telephony)#max-dn ?
  <1-144> Maximum directory numbers supported
Router(config-telephony)#max-dn 5
Router(config-telephony)#max-eph
Router(config-telephony)#max-ephones 5
Router(config-telephony)#ip sour
Router(config-telephony)#ip source-address 192.168.1.1 ?
  port Define tcp port for Telephony Service/CM FALLBACK
Router(config-telephony)#ip source-address 192.168.1.1 port ?
  <2000-9999> Specify the port: 2000 - 9999
Router(config-telephony)#ip source-address 192.168.1.1 port 2000?
  <2000-9999>
Router(config-telephony)#ip source-address 192.168.1.1 port 2000 ?
  <CR>
Router(config-telephony)#ip source-address 192.168.1.1 port 2000
Router(config-telephony)#aut
Router(config-telephony)#auto as
Router(config-telephony)#auto assign 1 to 9
Router(config-telephony)#
```

Step 6 : Now, we will go to the switch and make the interfaces support voip as follows.

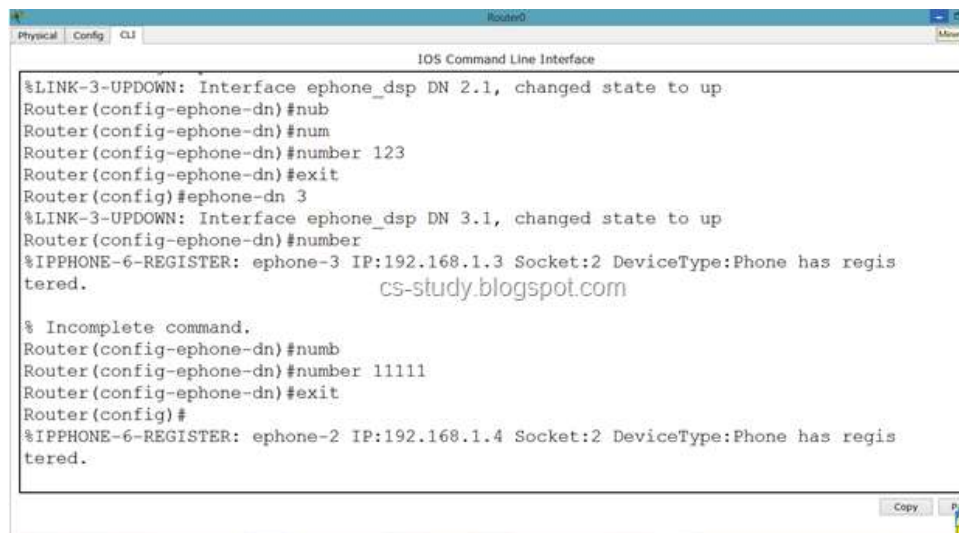


```
Switch>enable
Switch#config t
Enter configuration commands, one per line.  End with CNTL/Z.
Switch(config)#inter
Switch(config)#interface ran
Switch(config)#interface range fa
Switch(config)#interface range fastEthernet 0/1 - fa
Switch(config)#interface range fastEthernet 0/1 - fastEthernet 0/10
Switch(config-if-range)#swi
Switch(config-if-range)#switchport mo
Switch(config-if-range)#switchport mode ac
Switch(config-if-range)#switchport mode access
Switch(config-if-range)#sw
Switch(config-if-range)#switchport ac
Switch(config-if-range)#switchport access vo
Switch(config-if-range)#switchport access voic
Switch(config-if-range)#switchport voice vl
Switch(config-if-range)#switchport voice vlan 1
Switch(config-if-range)#
```

Step 7 : After that, we will have to assign phone number to our IP phone by applying following commands.



```
Router(config)#ephone-dn 1
%LINK-3-UPDOWN: Interface ephone_dsp DN 1.1, changed state to up
Router(config-ephone-dn)#numbe
Router(config-ephone-dn)#number 12345
Router(config-ephone-dn)#exit
%IPPHONE-6-REGISTER: ephone-1 IP:192.168.1.2 Socket:2 DeviceType:Phone has regis
tered.
Router(config)#ephone-dn 2
%LINK-3-UPDOWN: Interface ephone_dsp DN 2.1, changed state to up
Router(config-ephone-dn)#nub
Router(config-ephone-dn)#num
Router(config-ephone-dn)#number 123
Router(config-ephone-dn)#exit
Router(config)#ephone-dn 3
%LINK-3-UPDOWN: Interface ephone_dsp DN 3.1, changed state to up
Router(config-ephone-dn)#number
%IPPHONE-6-REGISTER: ephone-3 IP:192.168.1.3 Socket:2 DeviceType:Phone has regis
tered.
```



```
%LINK-3-UPDOWN: Interface ephone_dsp DN 2.1, changed state to up
Router(config-ephone-dn)#num
Router(config-ephone-dn)#num
Router(config-ephone-dn)#number 123
Router(config-ephone-dn)#exit
Router(config)#ephone-dn 3
%LINK-3-UPDOWN: Interface ephone_dsp DN 3.1, changed state to up
Router(config-ephone-dn)#number
Router(config-ephone-dn)#number 11111
Router(config-ephone-dn)#exit
Router(config)#
%IPPHONE-6-REGISTER: ephone-3 IP:192.168.1.3 Socket:2 DeviceType:Phone has regis
tered.
cs-study.blogspot.com
% Incomplete command.
Router(config-ephone-dn)#numb
Router(config-ephone-dn)#number 11111
Router(config-ephone-dn)#exit
Router(config)#
%IPPHONE-6-REGISTER: ephone-2 IP:192.168.1.4 Socket:2 DeviceType:Phone has regis
tered.
```

Step 8 : Now, we can see that in GUI mode of Phone, we have a phone number available. This means that we can call from one phone to the other. Lets do that.



And when we pick up the reciever, it says that we are connected.

