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B – Batch
TE COMPS

CEL 51, DCCN, Monsoon 2020

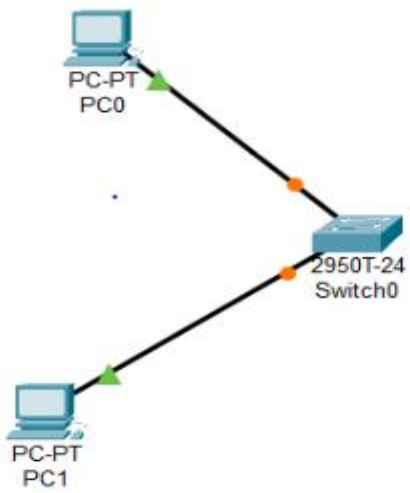
Lab 4: Prototyping a Network

Objective:
Prototype a network using Packet Tracer

Background
A client has requested that you set up a simple network with two PCs connected to a switch. Verify that the hardware, along with the given configurations, meet the requirements of the client.

Step 1: Set up the network topology

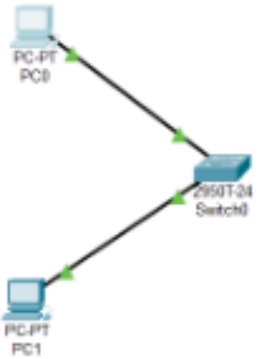
a) Add two PCs and a Cisco 2950T switch

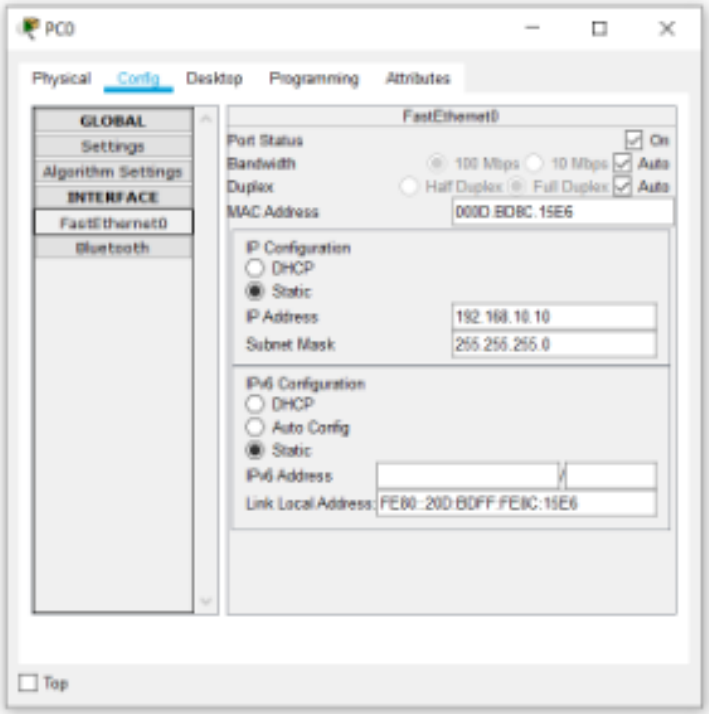


b) Using straight-through cables, connect **PC0** to interface **Fa0/1** on **Switch0** and **PC1** to interface **Fa0/2** on **Switch0**.

c) Configure PC0 using the **Config** tab in the PC0 configuration window:

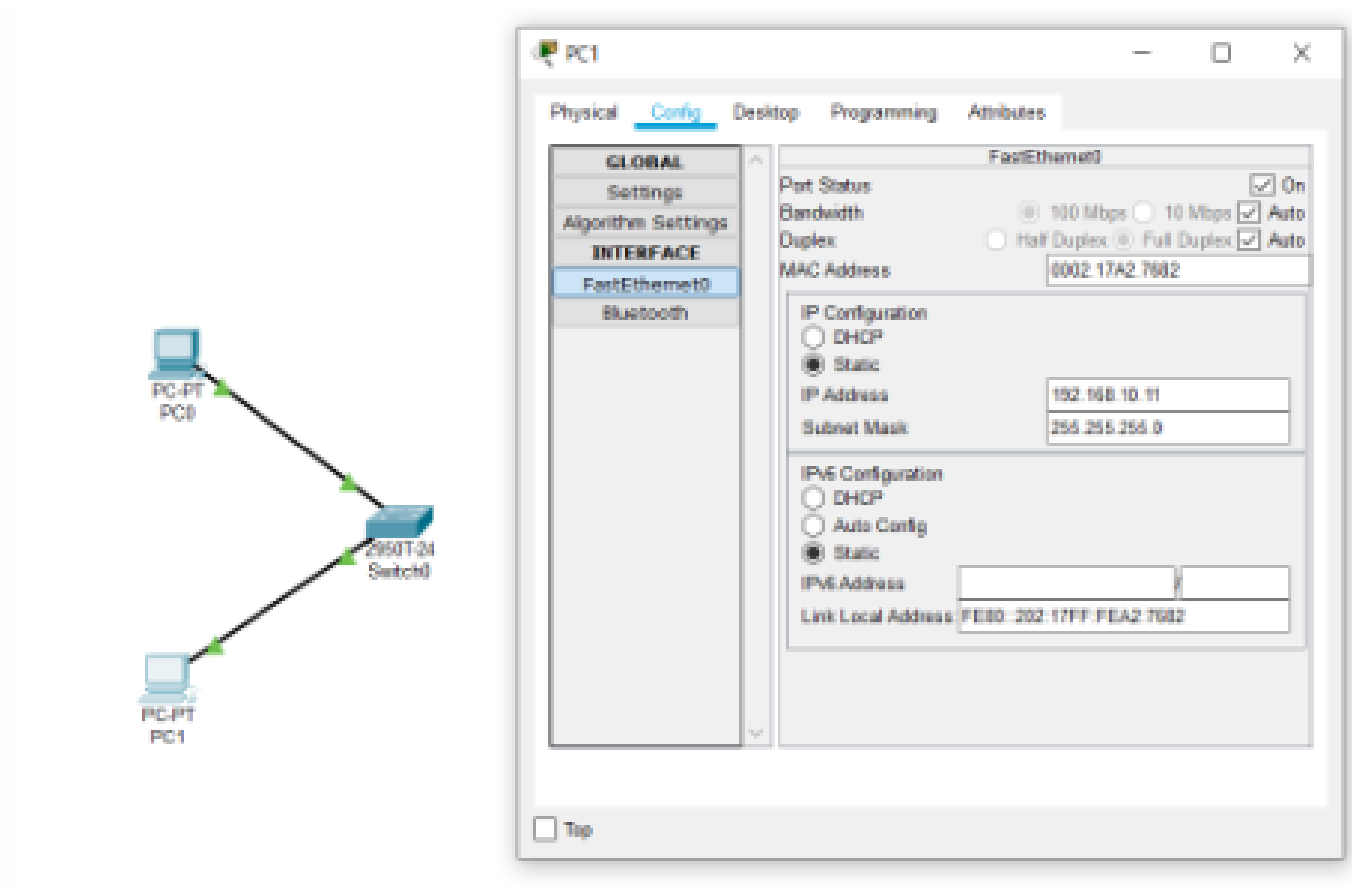
a. IP address: 192.168.10.10
b. Subnet Mask 255.255.255.0





d) Configure PC1 using the **Config** tab in the PC1 configuration window

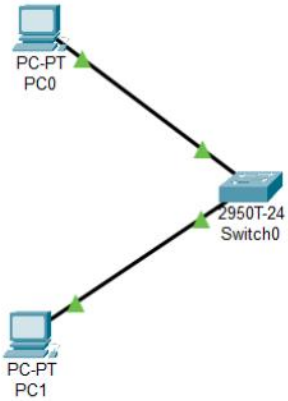
   a. IP address: 192.168.10.11
   b. Subnet Mask 255.255.255.0

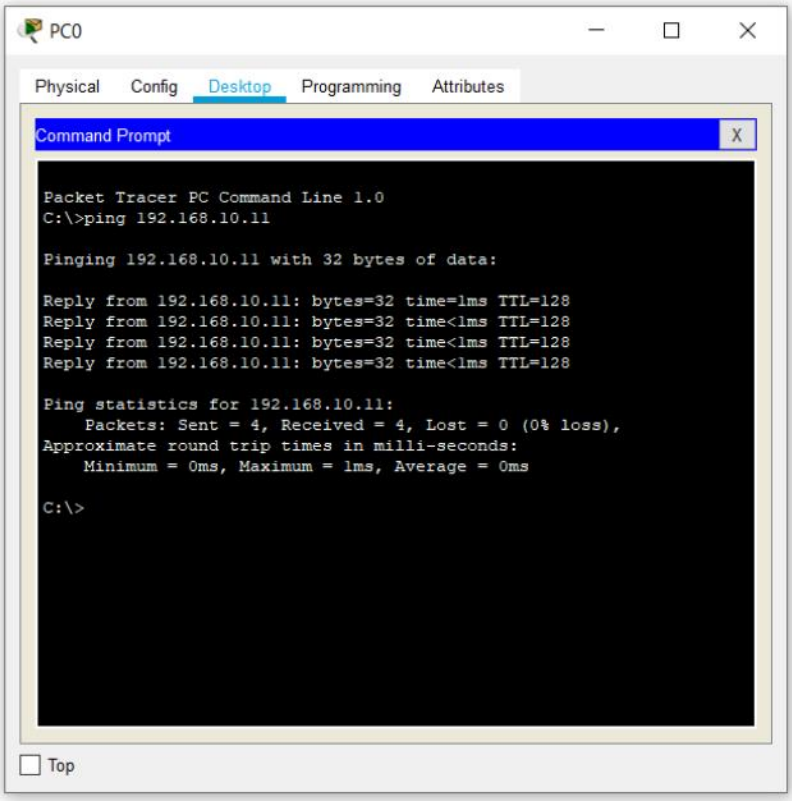


Step 2: Test connectivity from PC0 to PC1

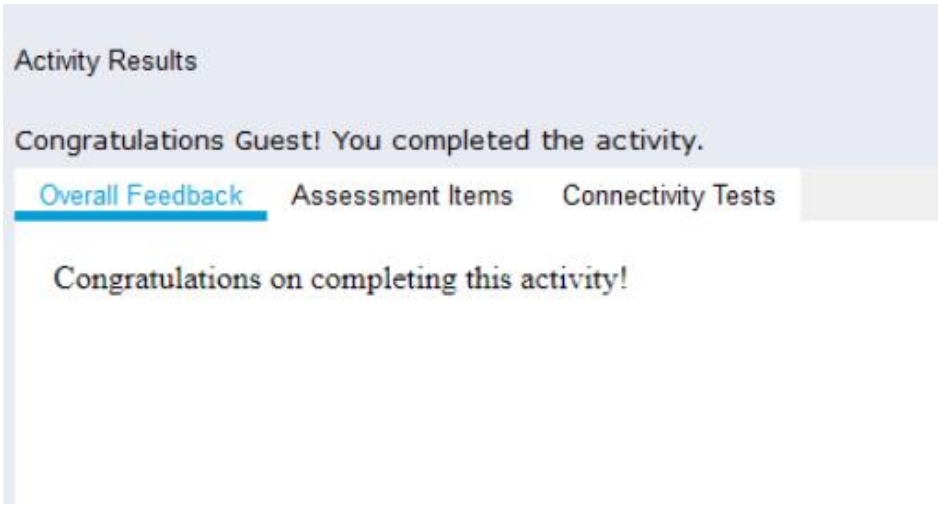
a) Use the **ping** command to test connectivity.
   a. Click PC0.
   b. Choose the **Desktop** tab.
   c. Choose **Command Prompt**.
   d. Type: **ping 192.168.10.11** and press *enter*.

b) A successful **ping** indicates the network was configured correctly and the prototype validates the hardware and software configurations. A successful ping should resemble the below output





c) Close the configuration window.
d) Click the **Check Results** button at the bottom of the instruction window to check your work..



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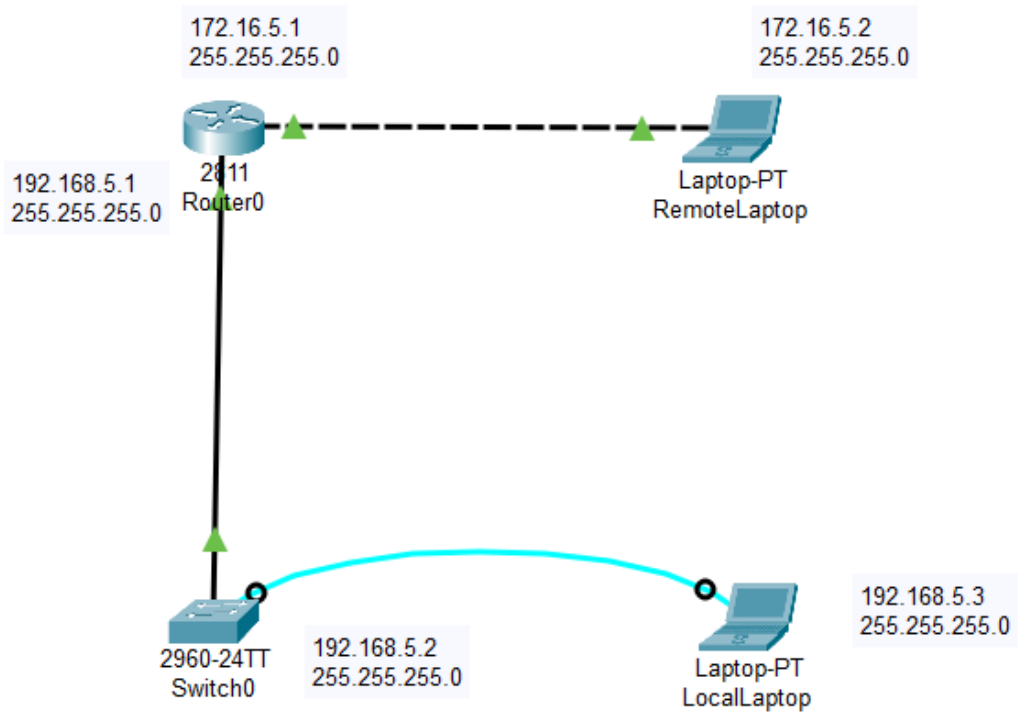
Lab 4.1: Basic configuration - hostname, motd banner, passwd etc

Objective:

This lab will test your ability to configure basic settings such as hostname, motd banner, encrypted passwords, and terminal options on a Packet Tracer 6.2 simulated Cisco Catalyst switch.



1. Use the local laptop connect to the switch console.

2. Configure Switch hostname as LOCAL-SWITCH

```
Switch>enable
Switch#
Switch#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Switch(config)#interface FastEthernet0/1
Switch(config-if)#
Switch(config-if)#exit
Switch(config)#interface FastEthernet0/2
Switch(config-if)#hostname LOCAL-SWITCH
```

3. Configure the message of the day as "Unauthorized access is forbidden"

```
LOCAL-SWITCH(config)#banner motd "Unauthorized access is forbidden"
```

4. Configure the password for privileged mode access as "cisco". The password must be md5 encrypted

5. Configure password encryption on the switch using the global configuration command

```
LOCAL-SWITCH(config)#enable password cisco
LOCAL-SWITCH(config)#service password-encryption
```

6. Configure CONSOLE access with the following settings :
- Login enabled
- Password : whatever you like
- History size : 15 commands
- Timeout : 6'45''
- Synchronous logging

```
LOCAL-SWITCH(config)#line con 0
LOCAL-SWITCH(config-line)#password console0
LOCAL-SWITCH(config-line)#history size 15
LOCAL-SWITCH(config-line)#logging synchronous
LOCAL-SWITCH(config-line)#exec-timeout 6 45
LOCAL-SWITCH(config-line)#login
LOCAL-SWITCH(config-line)#exit
LOCAL-SWITCH(config)#line vty 0
```

6. Configure TELNET access with the following settings :
- Login enabled
- Password : whatever you like
- History size : 15 commands
- Timeout : 8'20''
- Synchronous logging

```
LOCAL-SWITCH(config)#line vty 0
LOCAL-SWITCH(config-line)#logging synchronous
LOCAL-SWITCH(config-line)#password telnet
LOCAL-SWITCH(config-line)#login
LOCAL-SWITCH(config-line)#history size 15
LOCAL-SWITCH(config-line)#exec-timeout 8 20
LOCAL-SWITCH(config-line)#exit
```

7. Configure the IP address of the switch as 192.168.1.2/24 and it's default gateway IP (192.168.1.1).

```
LOCAL-SWITCH(config)#interface vlan1
LOCAL-SWITCH(config-if)#ip address 192.168.5.2 255.255.255.0
LOCAL-SWITCH(config-if)#ip default-gateway 192.168.5.1
LOCAL-SWITCH(config)#exit
LOCAL-SWITCH#
%SYS-5-CONFIG_I: Configured from console by console

LOCAL-SWITCH#
```

Running command sh run to see the configuration of the switch.

```
LOCAL-SWITCH#sh run
Building configuration...

Current configuration : 1416 bytes
!
version 12.2
no service timestamps log datetime msec
no service timestamps debug datetime msec
service password-encryption
!
hostname LOCAL-SWITCH
!
enable password 7 0822455D0A16
!
!
!
!
!
!
spanning-tree mode pvst
spanning-tree extend system-id
!
interface FastEthernet0/1
!
interface FastEthernet0/2
!
interface FastEthernet0/3
!
interface FastEthernet0/4
!
interface FastEthernet0/5
!
interface FastEthernet0/6
!
interface FastEthernet0/7
!
```

```
!
interface GigabitEthernet0/1
!
interface GigabitEthernet0/2
!
interface Vlan1
 ip address 192.168.5.2 255.255.255.0
 shutdown
!
ip default-gateway 192.168.5.1
!
banner motd ^CUnauthorized access is forbidden^C
!
!
!
line con 0
 password 7 082243401A16091242
 logging synchronous
 login
 history size 15
 exec-timeout 6 45
!
line vty 0
 exec-timeout 8 20
 password 7 08354942071C11
 logging synchronous
 login
 history size 15
line vty 1 4
 login
line vty 5 15
 login
!
!
!
!
end
```

Noticed that interface vlan1 is shutdown.

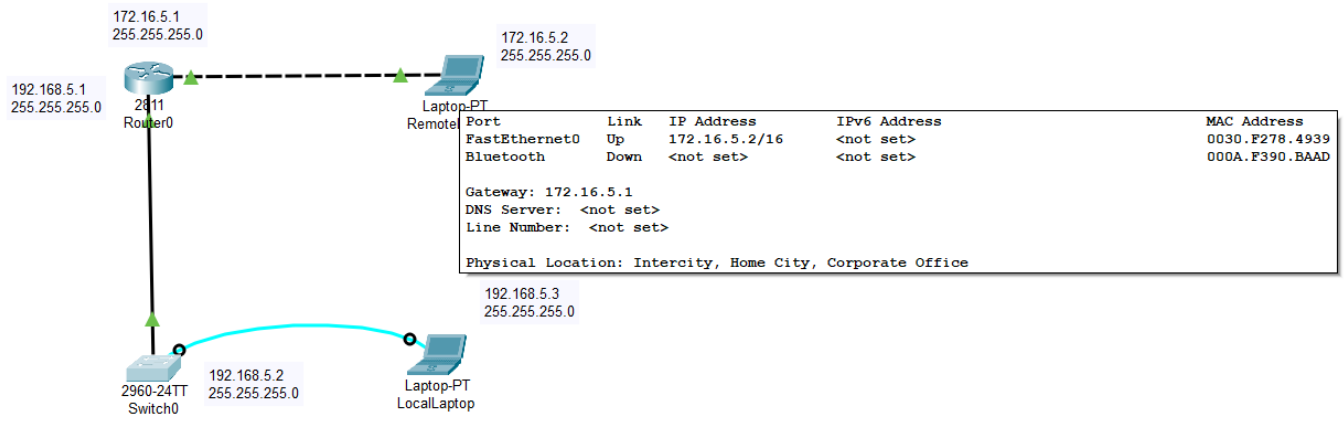
Therefore, turning it ON by running the command no shutdown.

```
LOCAL-SWITCH#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
LOCAL-SWITCH(config)#interface vlan1
LOCAL-SWITCH(config-if)#no shutdown

LOCAL-SWITCH(config-if)#
%LINK-5-CHANGED: Interface Vlan1, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan1, changed state to up

LOCAL-SWITCH(config-if)#exit
```

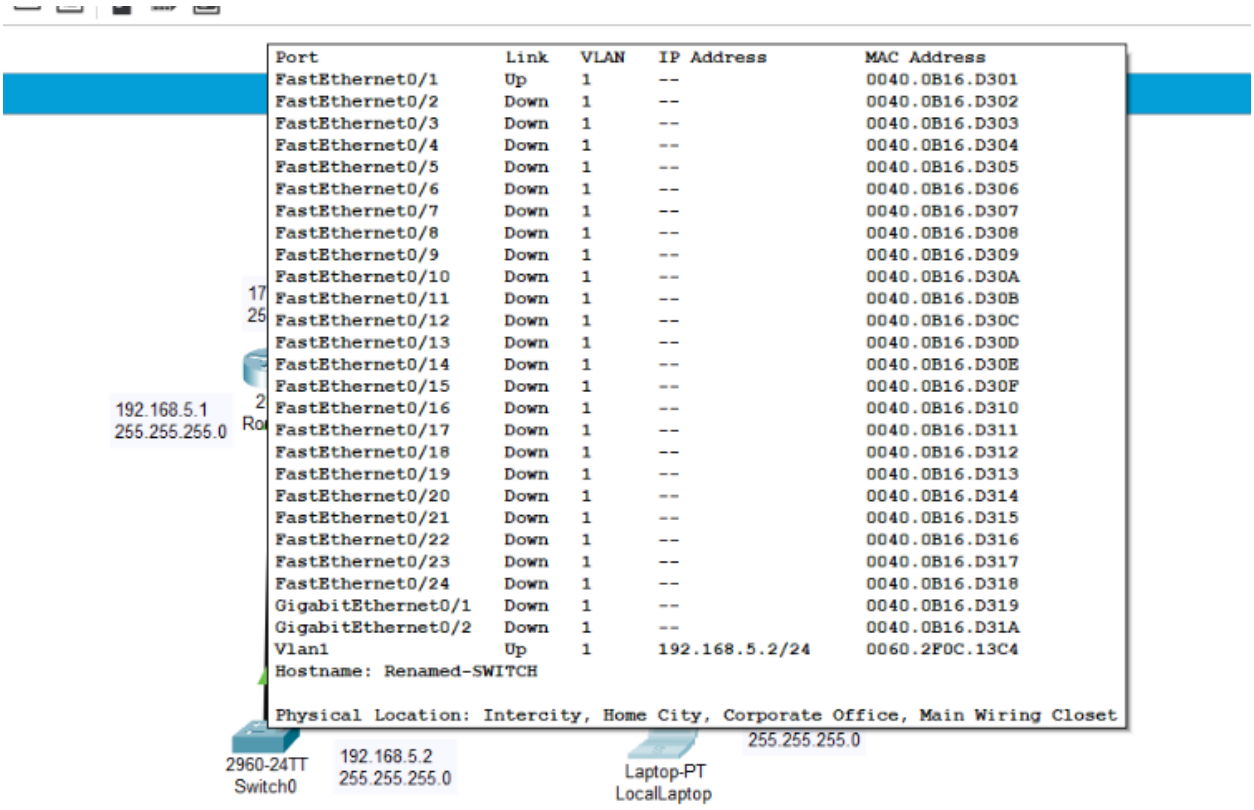
Final configurations of the switch :

```
!
interface GigabitEthernet0/2
!
interface Vlan1
 ip address 192.168.5.2 255.255.255.0
!
ip default-gateway 192.168.5.1
!
banner motd ^CUnauthorized access is forbidden^C
!
!
!
line con 0
 password 7 082243401A16091242
 logging synchronous
 login
 history size 15
 exec-timeout 6 45
!
line vty 0
 exec-timeout 8 20
 password 7 08354942071C11
 logging synchronous
 login
 history size 15
line vty 1 4
 login
line vty 5 15
 login
!
!
!
!
end
```

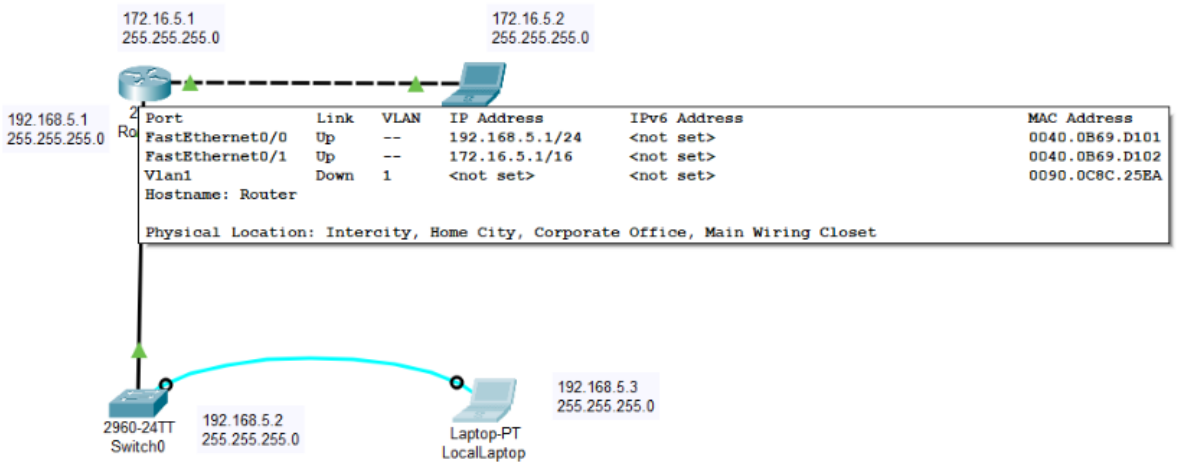
Configuration of Remote Laptop -



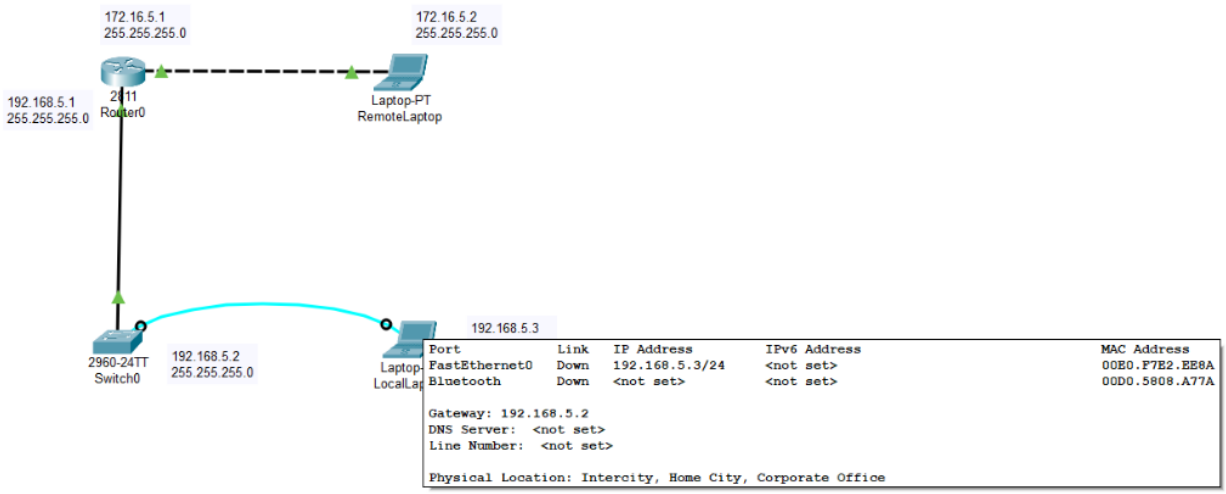
Configuration of Switch -



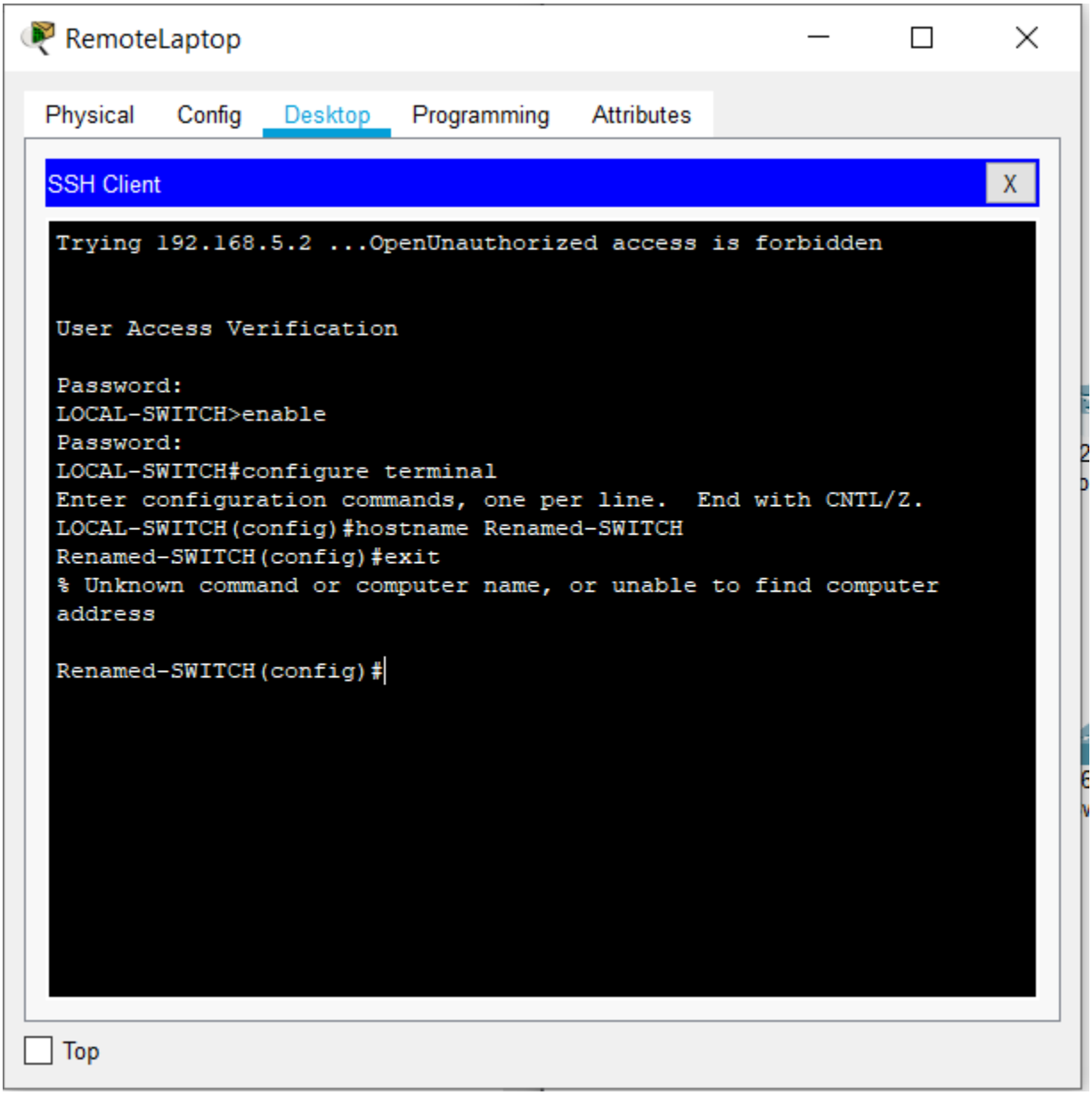
Configuration of Router -



Configuration of Local Laptop -



8. Test telnet connectivity from the Remote Laptop using the telnet client.



Conclusion –
I learnt how to configure a router and switch and how to implement telnet command to access the switch from a remote laptop.