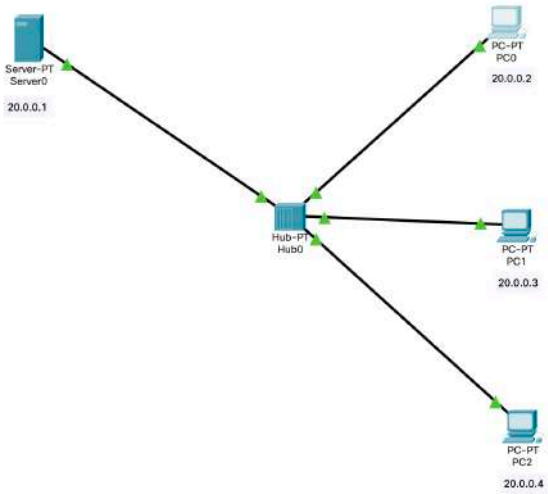
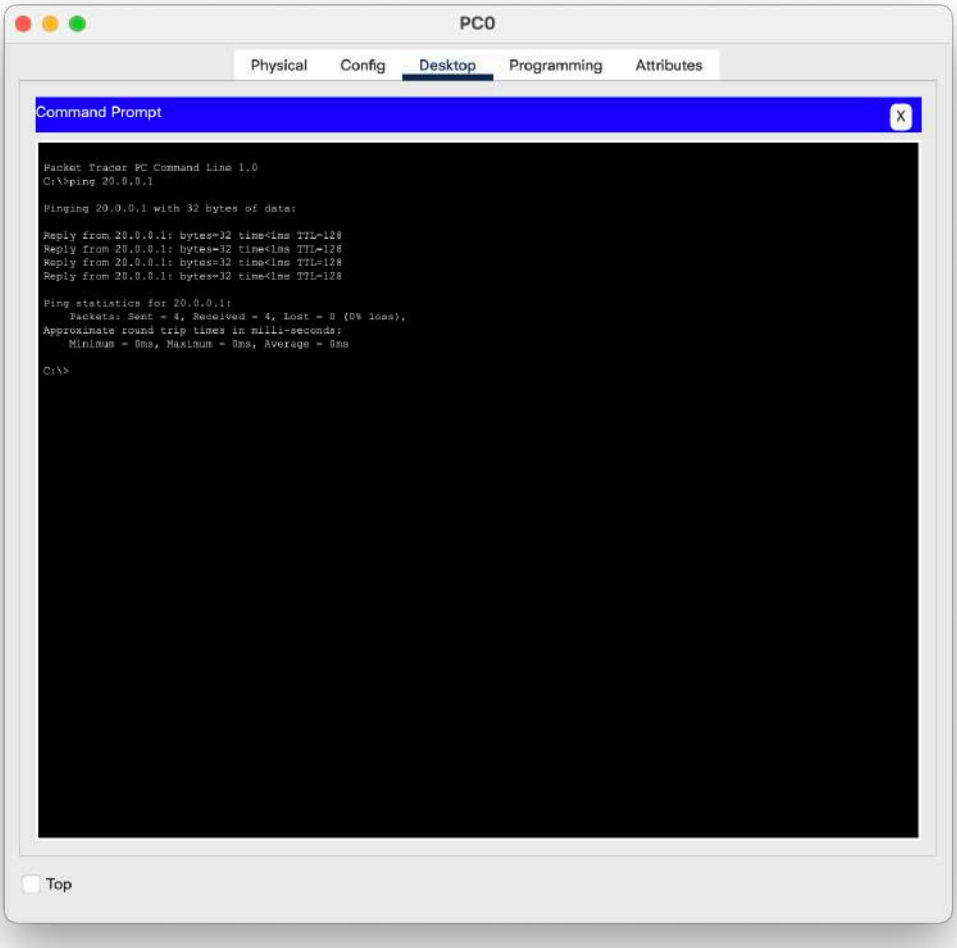
ISAA LAB ASSIGNMENT - 6

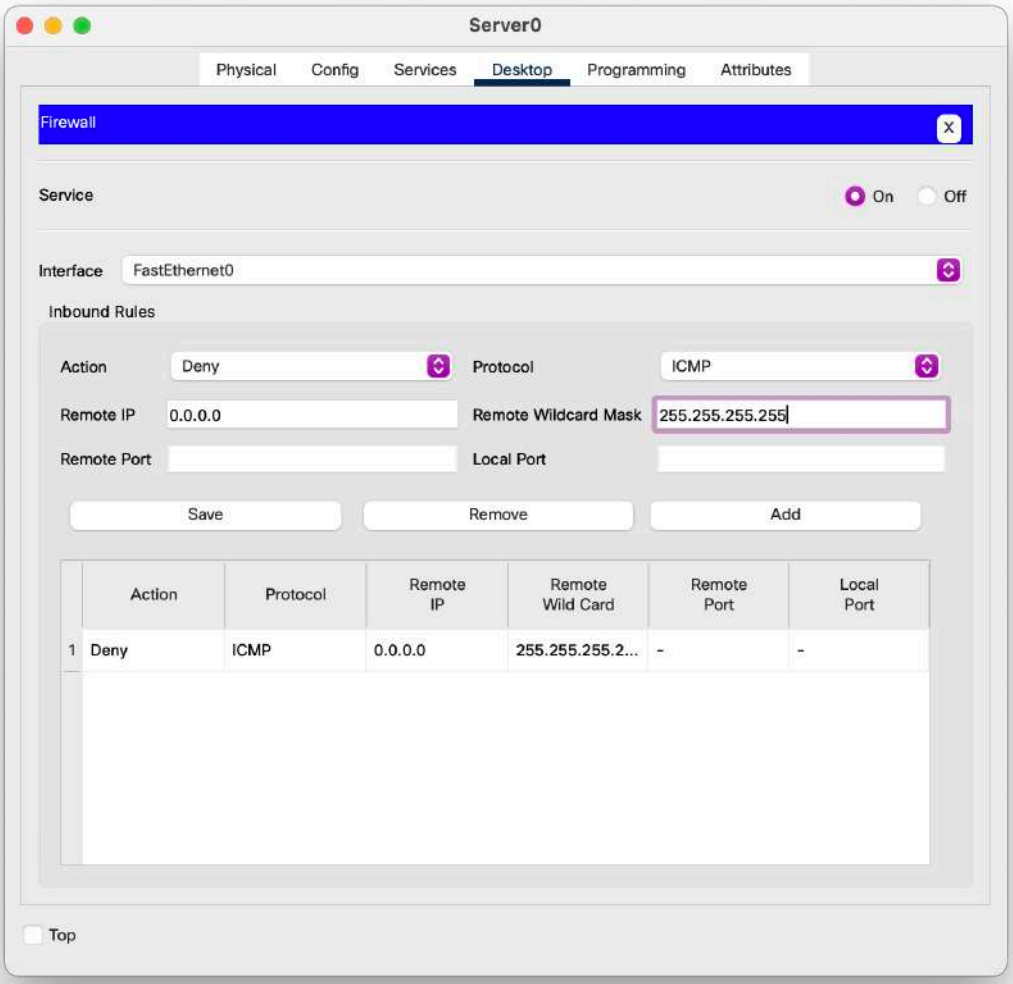
NAME	APOORVA REDDY BAGEPALLI
REGISTRATION NUMBER	19BCE2196

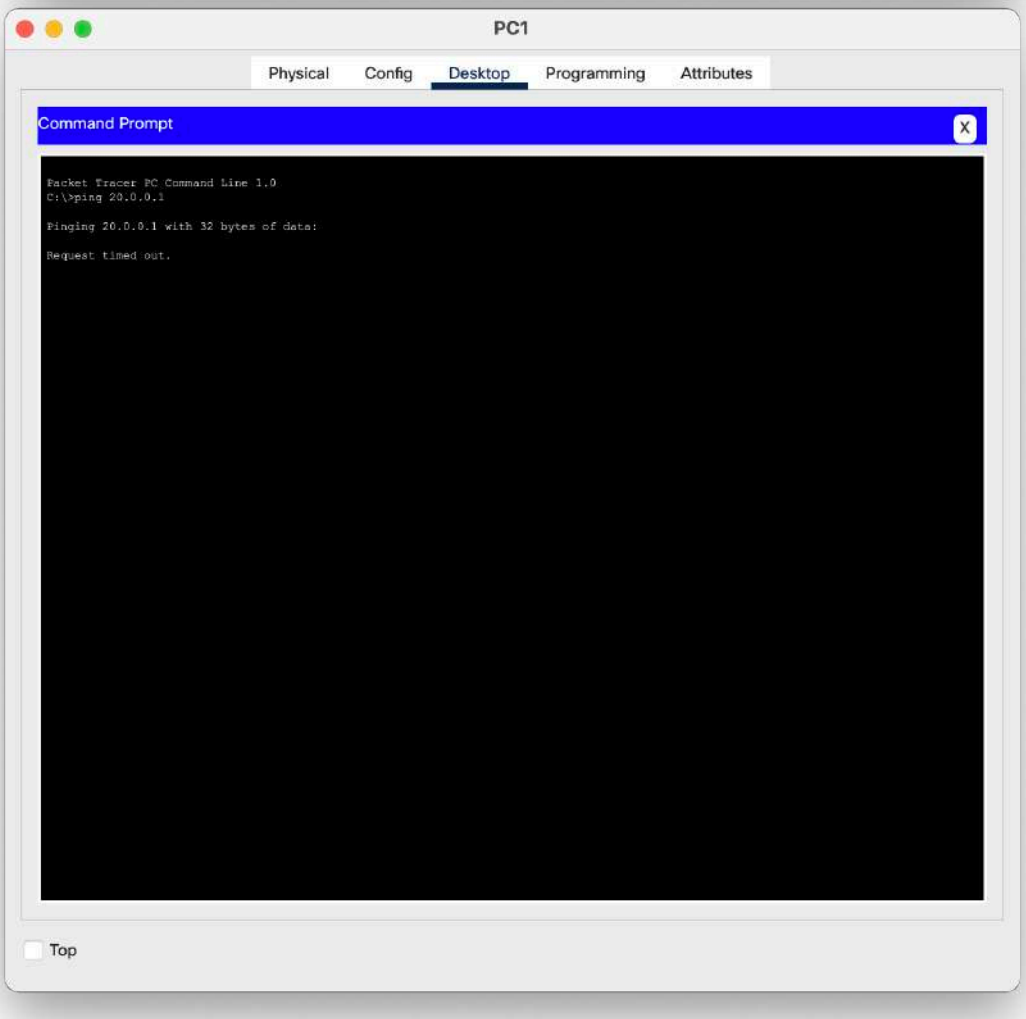
6(A) Firewall configuration using Cisco packet tracer

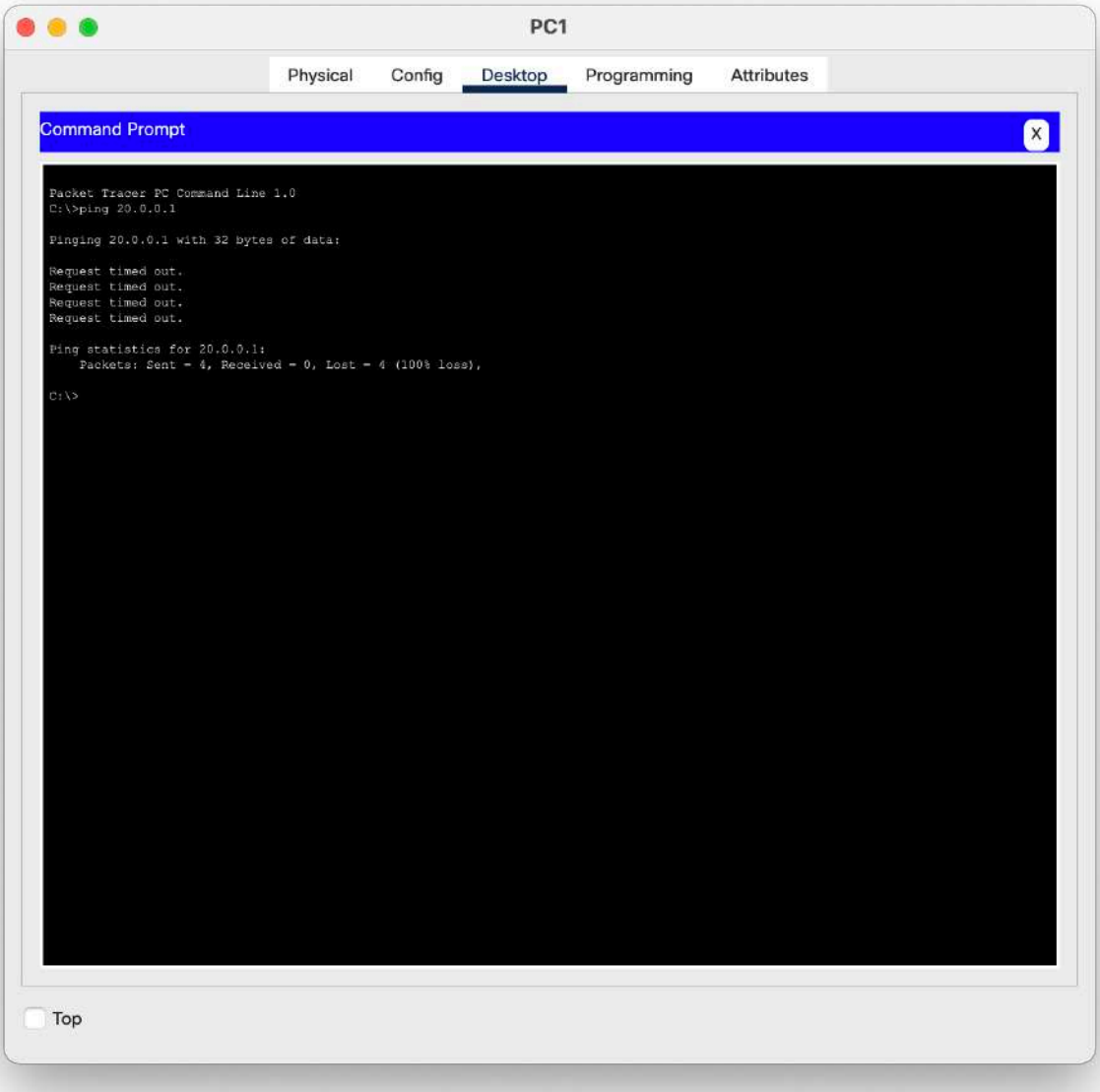
Description:
Server is placed, Hub, Connecting 3 PC's with the hub, Server's services that is working on firewall, Implementing to deny packets which is related to ICMP protocol
IP Configuration of all the three PCs: 20.0.0.2, 20.0.0.3, 20.0.0.4
IP Configuration of Server : 20.0.0.1






Server0
Physical
Config
Services
Desktop
Programming
Attributes
Firewall
Service
On
Off
Interface
FastEthernet0
Inbound Rules
Action
Deny
Protocol
ICMP
Remote IP
0.0.0.0
Remote Wildcard Mask
255.255.255.255
Remote Port
Local Port
Save
Remove
Add
Action
Protocol
Remote IP
Remote Wild Card
Remote Port
Local Port
1
Deny
ICMP
0.0.0.0
255.255.255.2...
-
-
Top

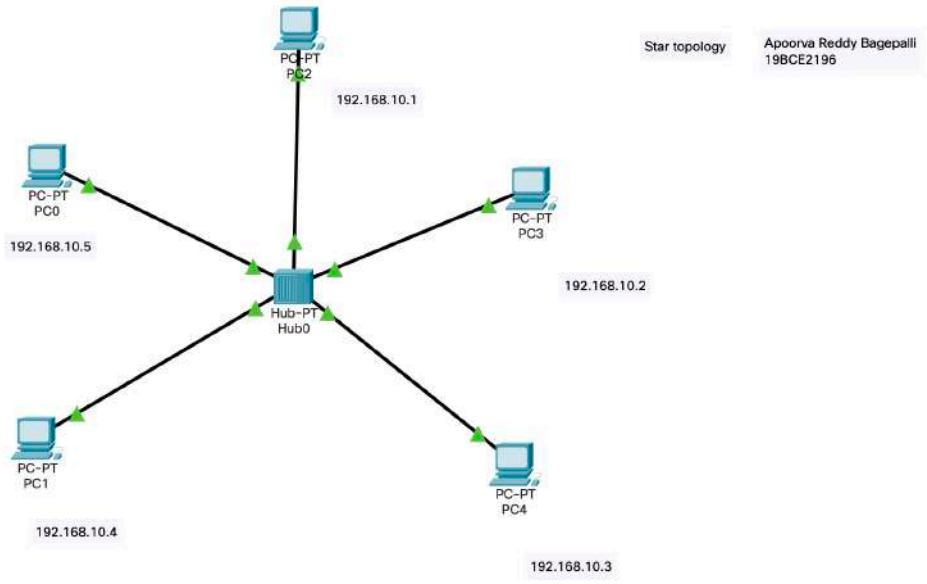

PC1
Physical
Config
Desktop
Programming
Attributes
Command Prompt
Packet Tracer PC Command Line 1.0
C:\>ping 20.0.0.1
Pinging 20.0.0.1 with 32 bytes of data:
Request timed out.
Top

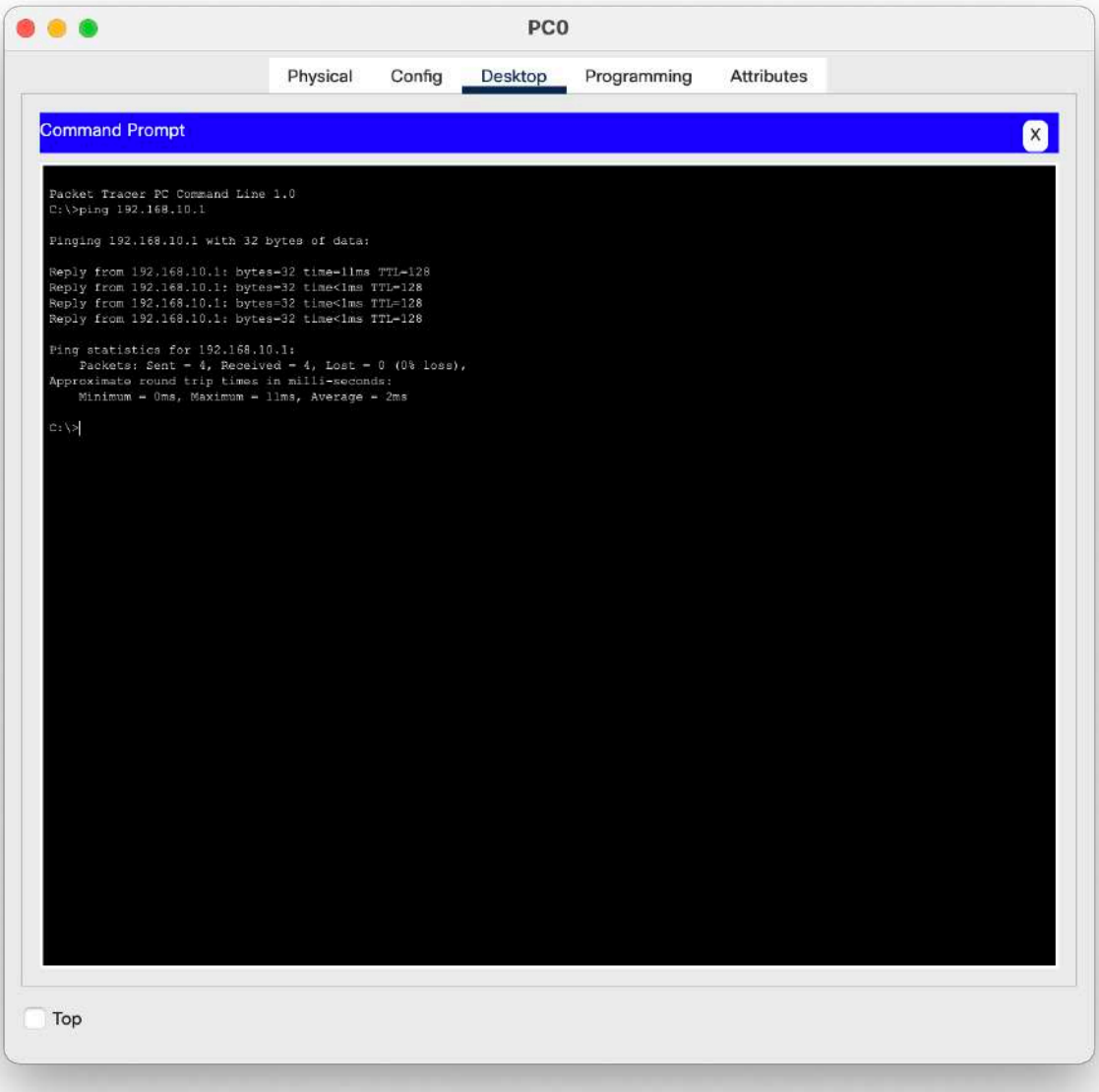


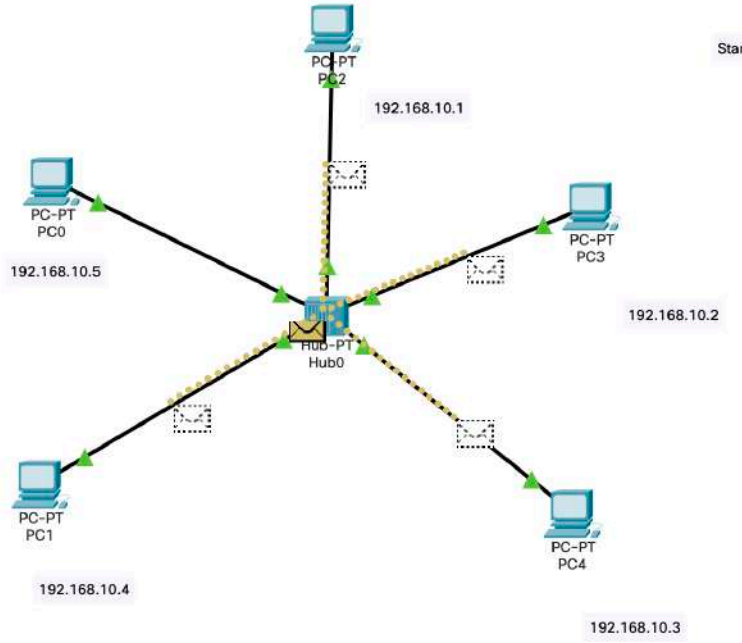
6(B) Topology configuration using packet tracer

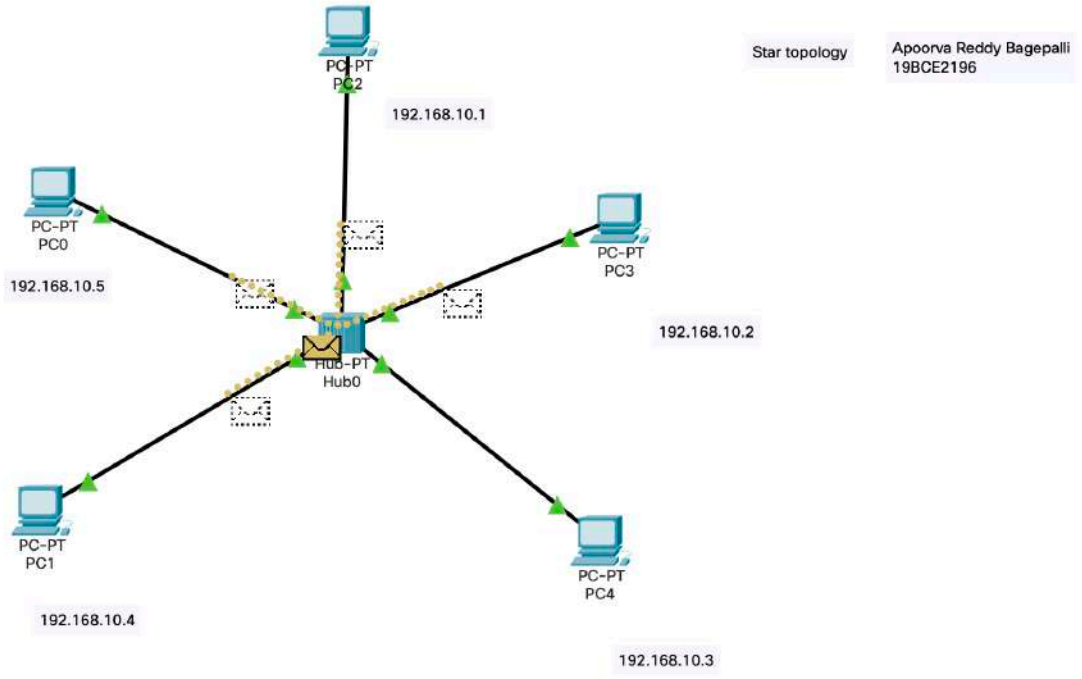
- **Star Topology**
- **Bus Topology**
- **Tree Topology**
- **Mesh Topology**

- **Star Topology**

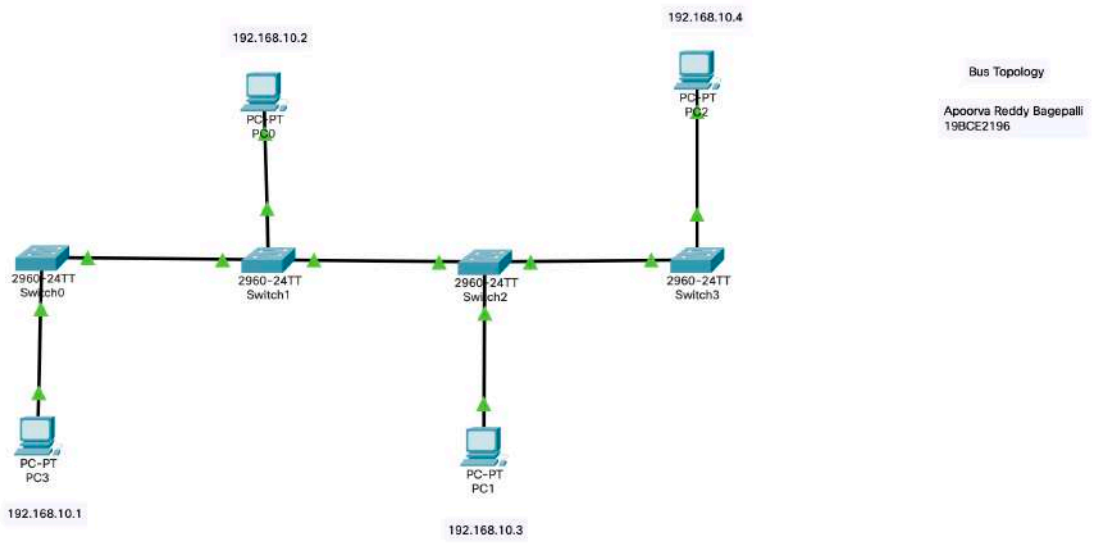


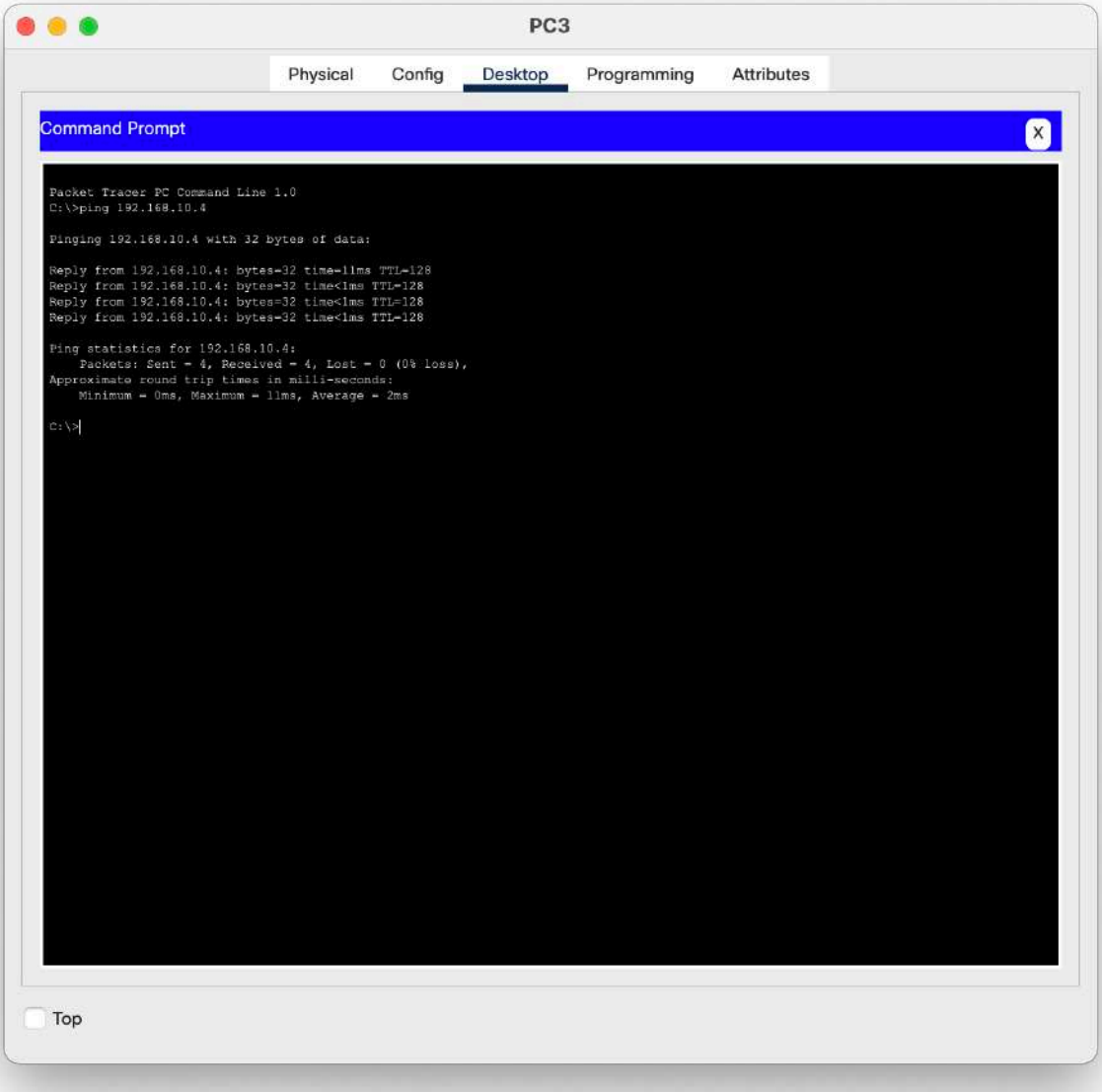


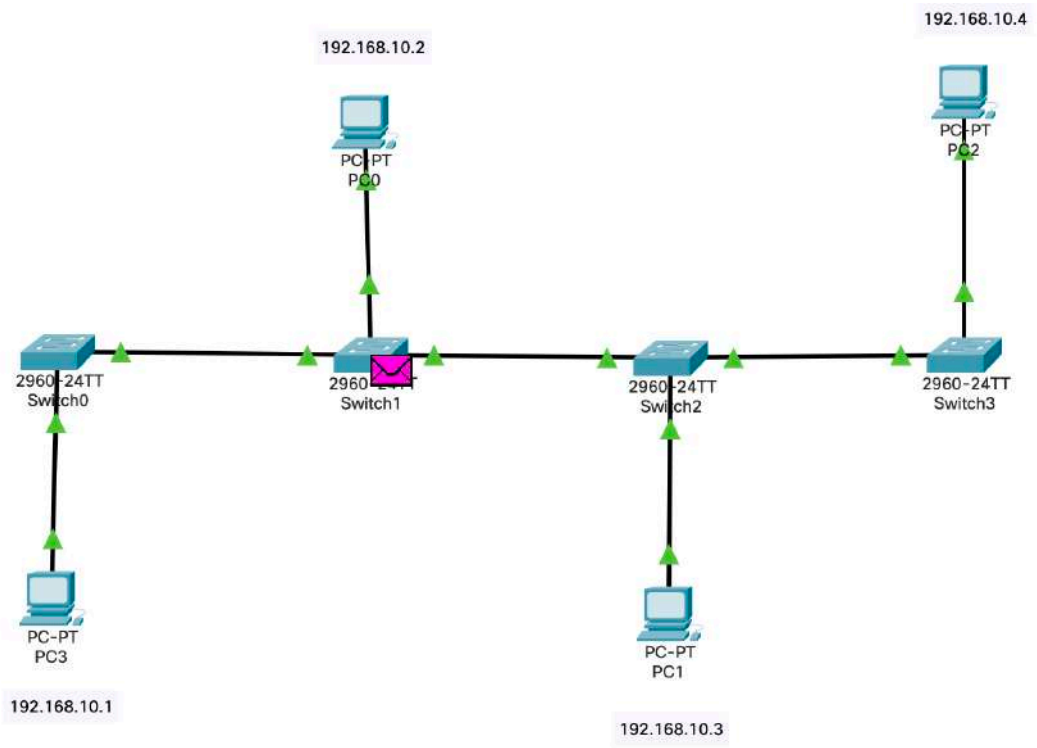

Star topology
Apoorva Reddy Bagepalli
19BCE2196
PC-PT
PC2
192.168.10.1
PC-PT
PC0
192.168.10.5
PC-PT
PC3
192.168.10.2
Hub-PT
Hub0
PC-PT
PC1
192.168.10.4
PC-PT
PC4
192.168.10.3

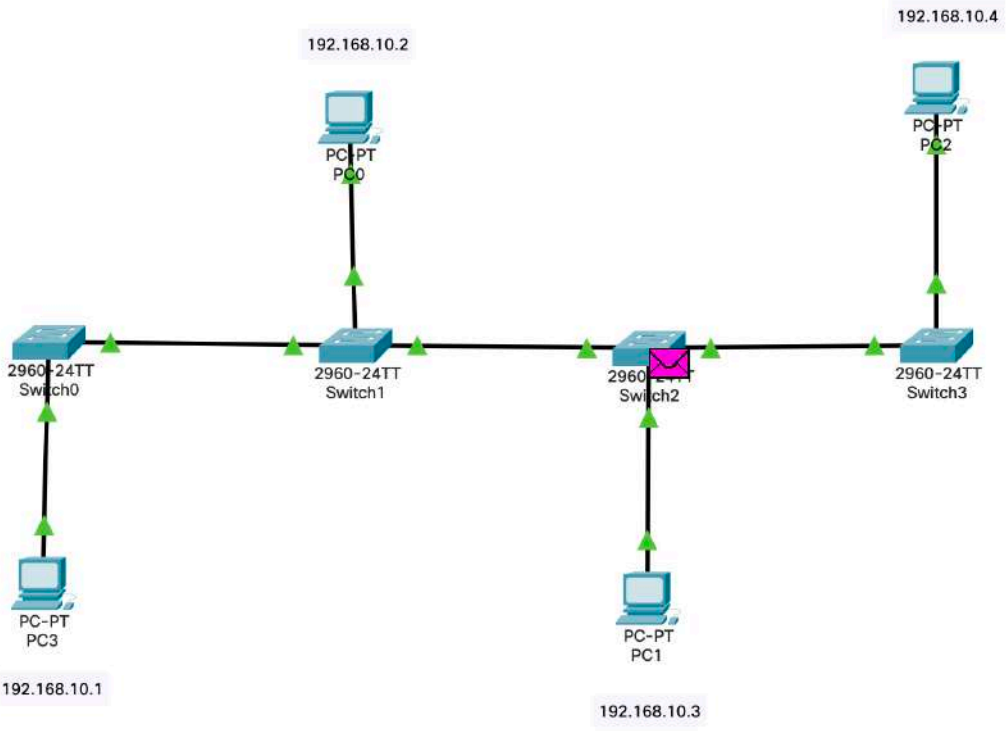

Star topology
Apoorva Reddy Bagepalli
19BCE2196
PC-PT
PC2
192.168.10.1
PC-PT
PC0
192.168.10.5
PC-PT
PC3
192.168.10.2
Hub-PT
Hub0
PC-PT
PC1
192.168.10.4
PC-PT
PC4
192.168.10.3

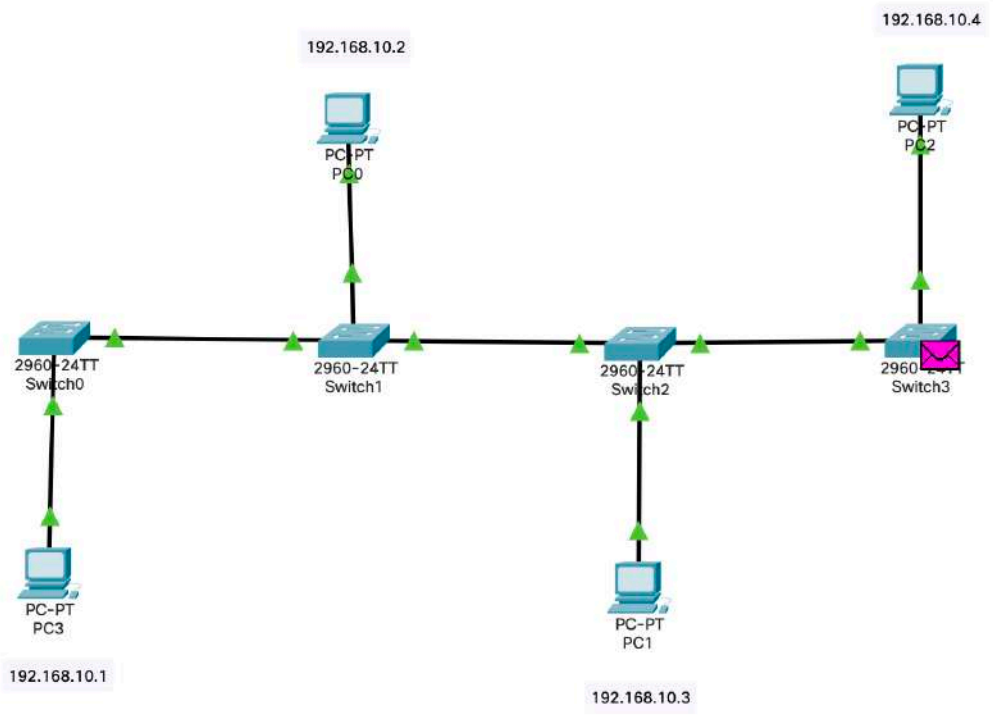
- **Bus Topology**

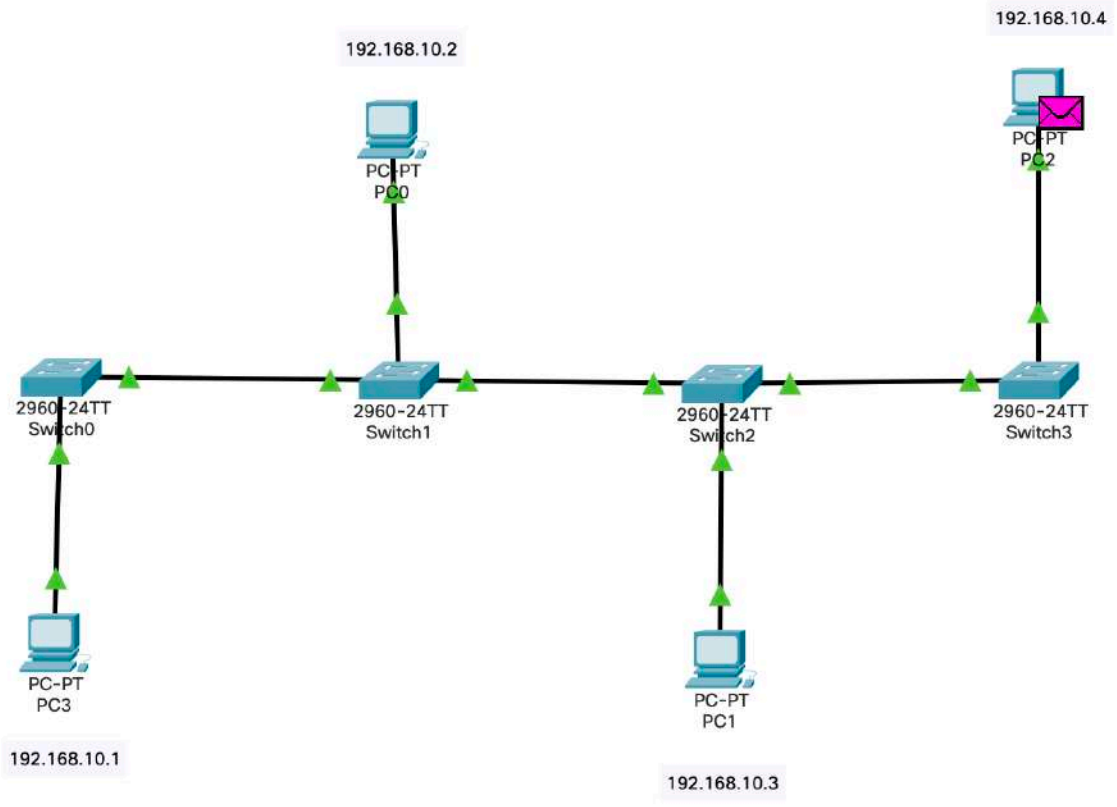




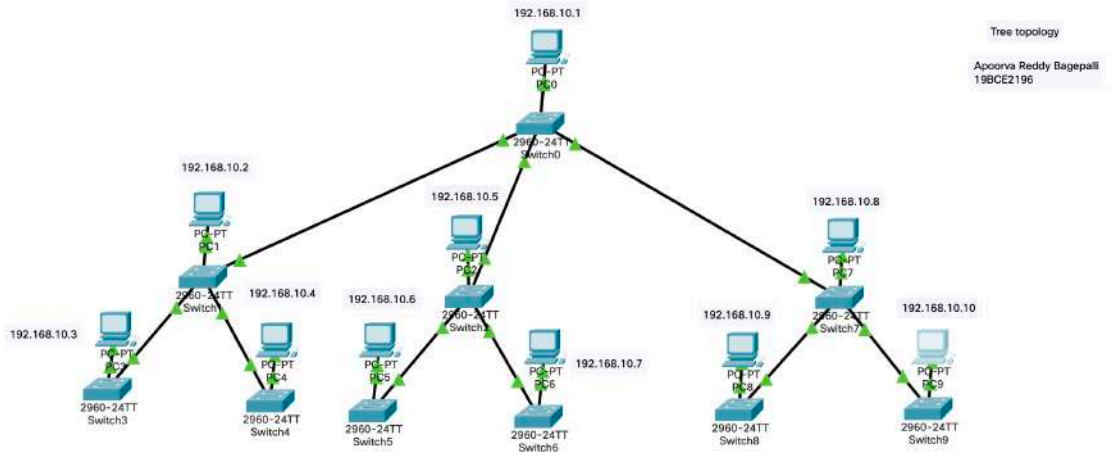

192.168.10.2
192.168.10.4
PC-PT
PC0
PC-PT
PC2
2960-24TT
Switch0
2960-24TT
Switch1
2960-24TT
Switch2
2960-24TT
Switch3
PC-PT
PC3
PC-PT
PC1
192.168.10.1
192.168.10.3

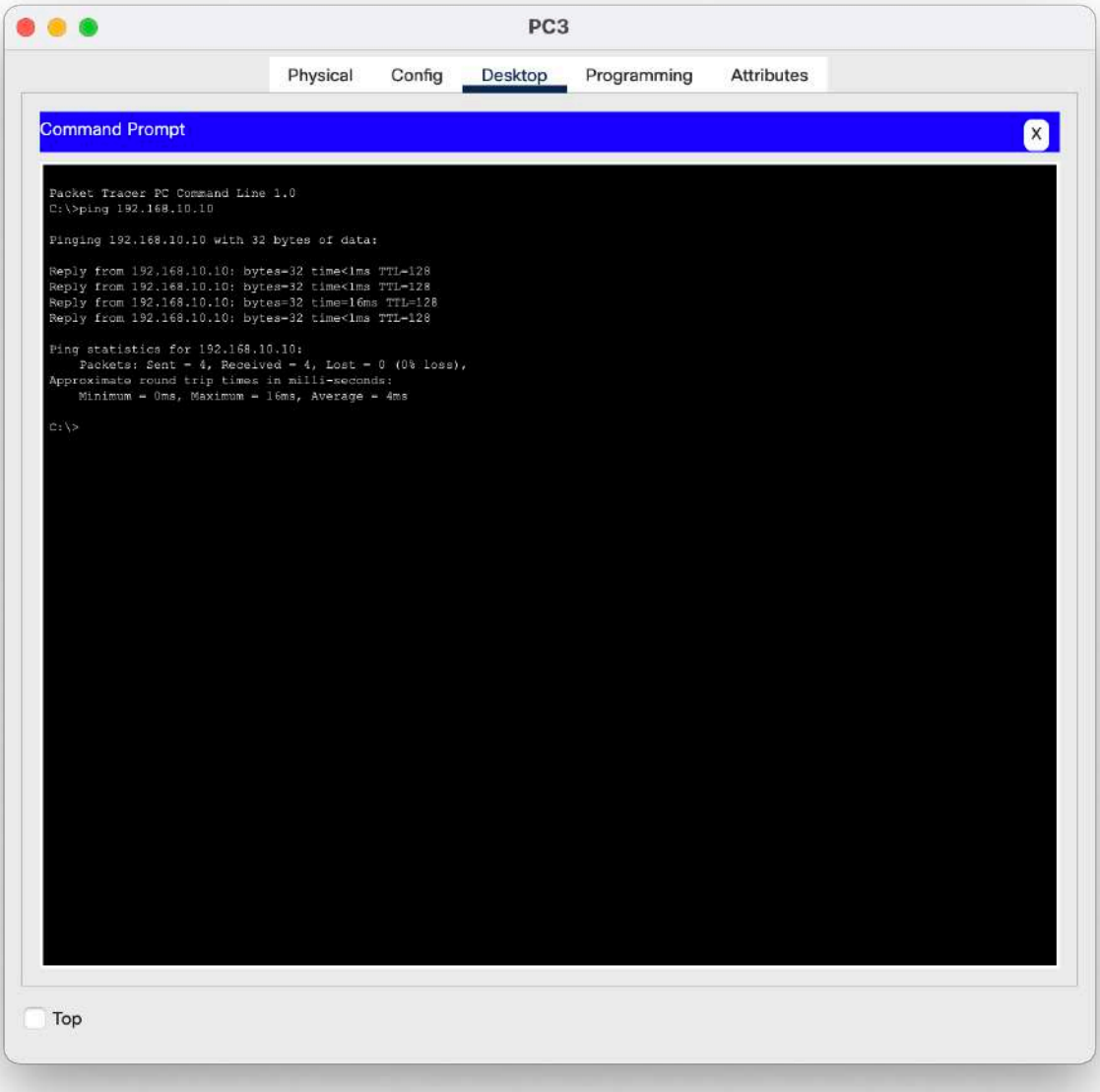

192.168.10.2
192.168.10.4
PC-PT
PC0
PC-PT
PC2
2960-24TT
Switch0
2960-24TT
Switch1
2960-24TT
Switch2
2960-24TT
Switch3
PC-PT
PC3
PC-PT
PC1
192.168.10.1
192.168.10.3

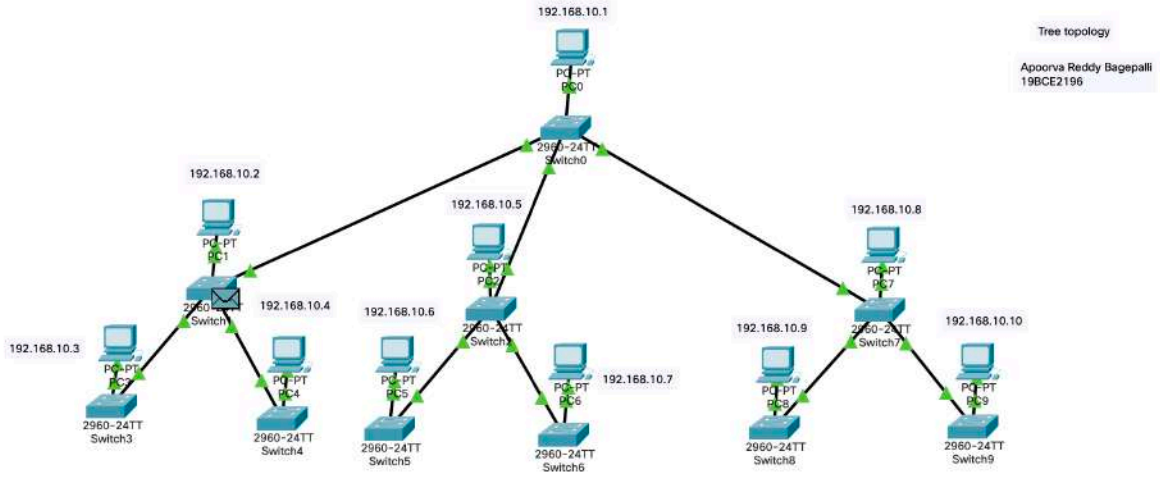

192.168.10.2
192.168.10.4
PC-PT
PC0
PC-PT
PC2
2960-24TT
Switch0
2960-24TT
Switch1
2960-24TT
Switch2
2960-24TT
Switch3
PC-PT
PC3
PC-PT
PC1
192.168.10.1
192.168.10.3

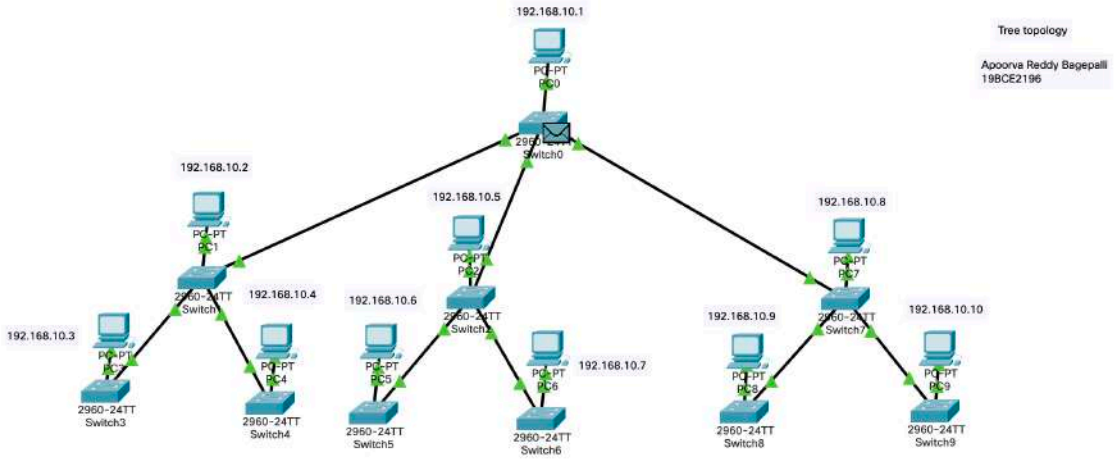

192.168.10.2
192.168.10.4
PC-PT
PC0
PC-PT
PC2
2960-24TT
Switch0
2960-24TT
Switch1
2960-24TT
Switch2
2960-24TT
Switch3
PC-PT
PC3
PC-PT
PC1
192.168.10.1
192.168.10.3

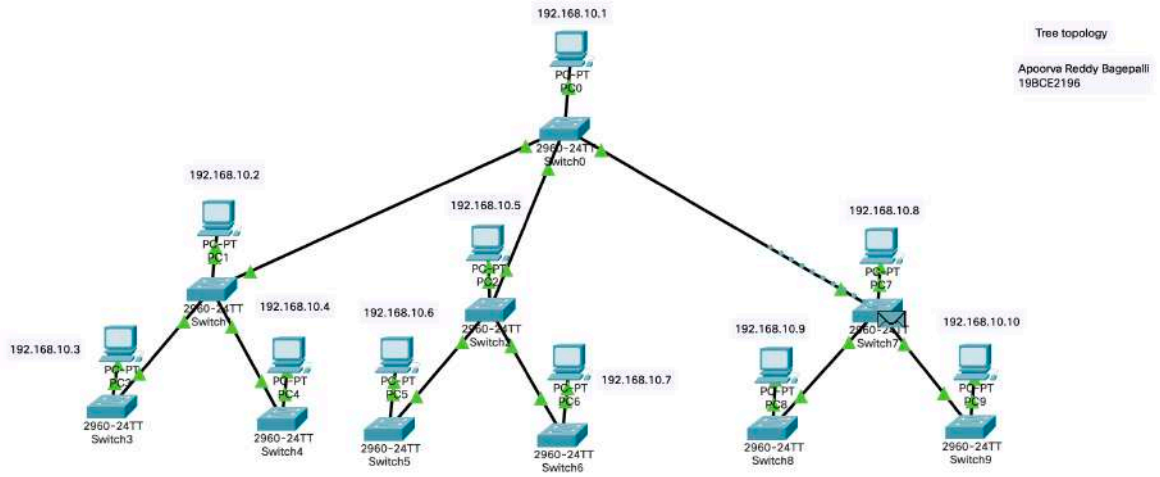
- **Tree Topology**

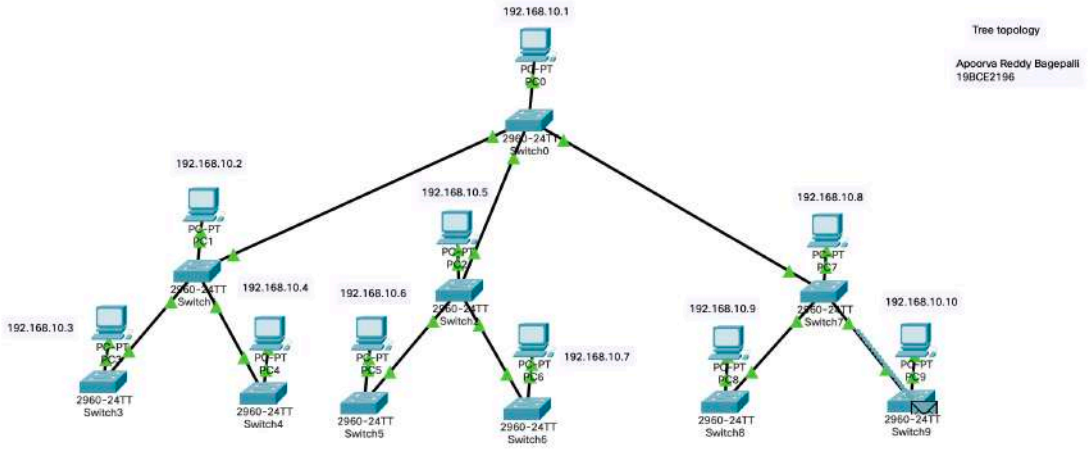


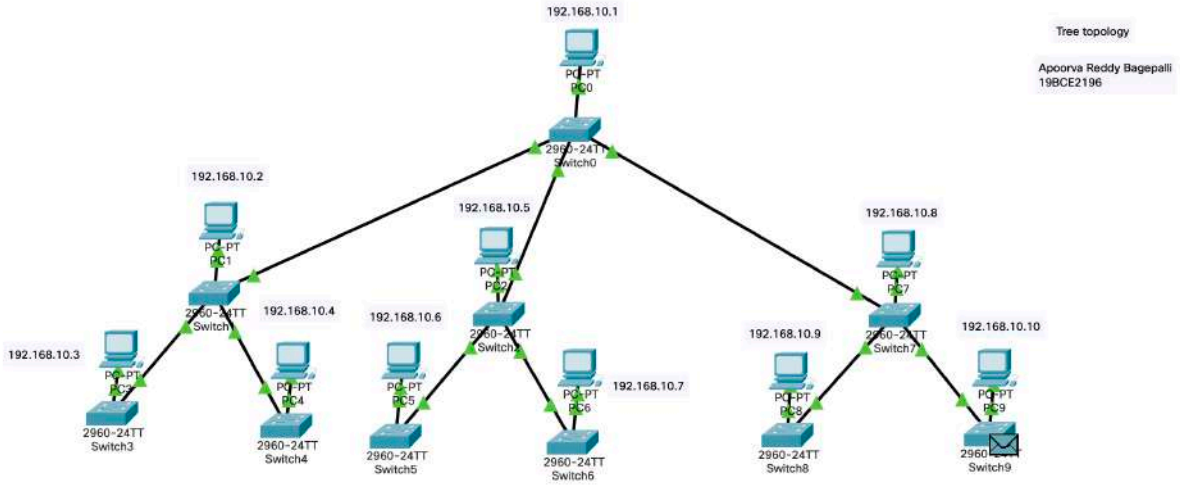



Tree topology
Apoorva Reddy Bagepalli
19BCE2196
192.168.10.1
192.168.10.2
192.168.10.3
192.168.10.4
192.168.10.5
192.168.10.6
192.168.10.7
192.168.10.8
192.168.10.9
192.168.10.10
2960-24TT
Switch0
Switch1
Switch2
Switch3
Switch4
Switch5
Switch6
Switch7
Switch8
Switch9
PC-PT
PC0
PC1
PC2
PC4
PC5
PC6
PC7
PC8
PC9

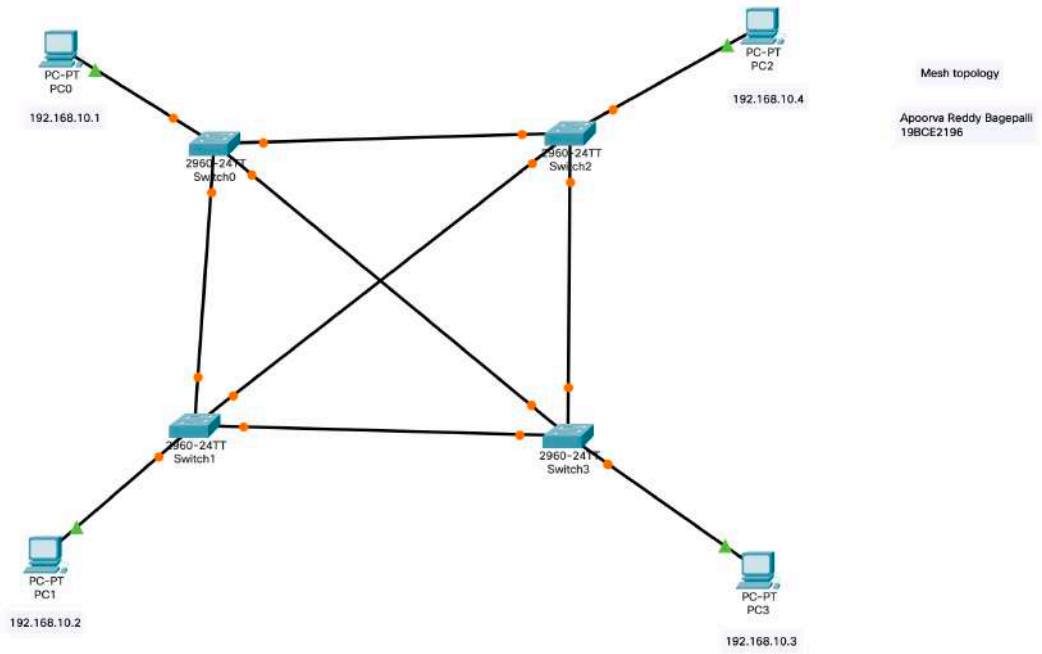

Tree topology
Apoorva Reddy Bagepalli
19BCE2196
192.168.10.1
192.168.10.2
192.168.10.3
192.168.10.4
192.168.10.5
192.168.10.6
192.168.10.7
192.168.10.8
192.168.10.9
192.168.10.10
2960-24TT
Switch0
Switch1
Switch2
Switch3
Switch4
Switch5
Switch6
Switch7
Switch8
Switch9
PC-PT
PC0
PC1
PC2
PC4
PC5
PC6
PC7
PC8
PC9

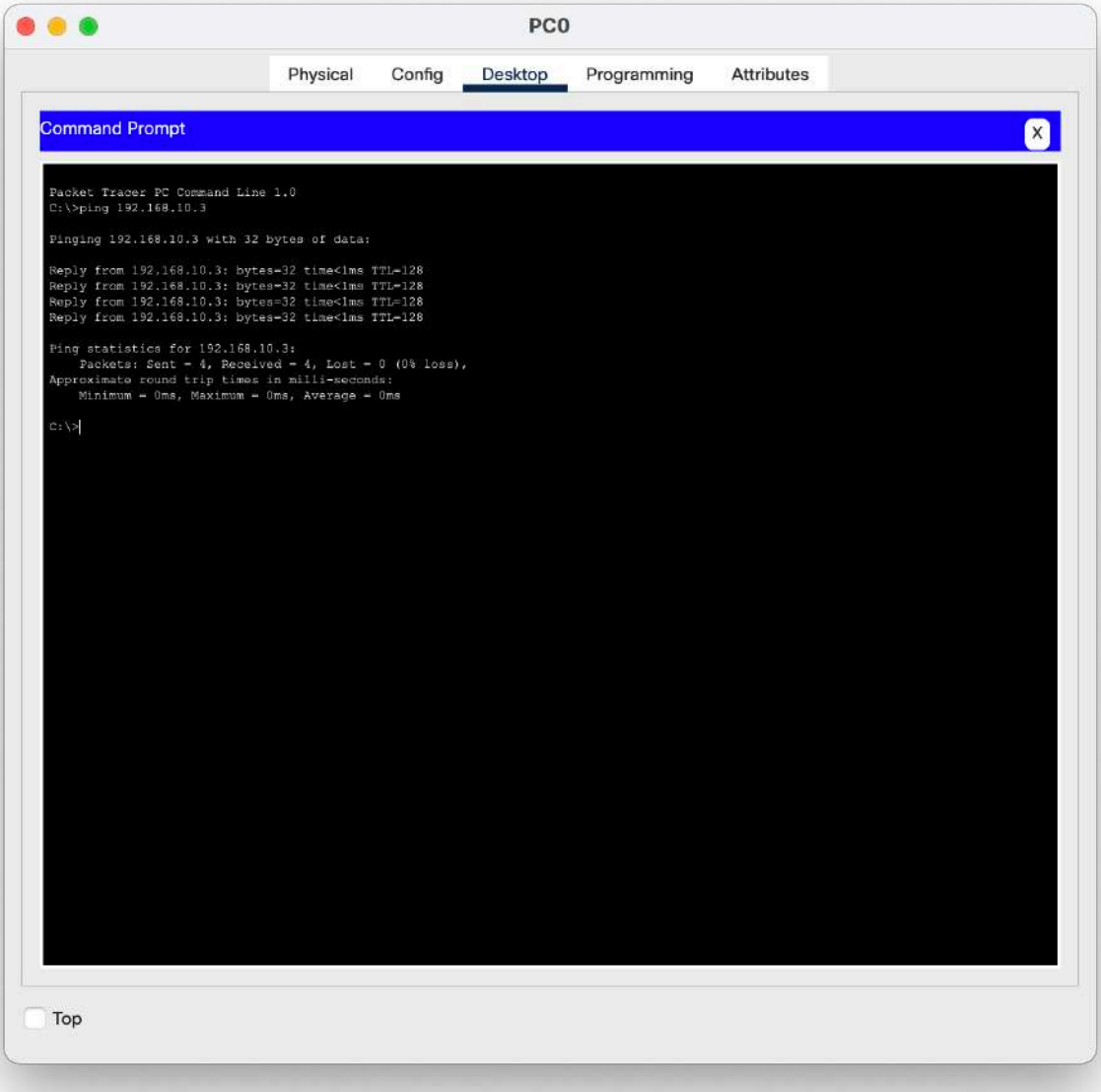

Tree topology
Apoorva Reddy Bagepalli
19BCE2196
192.168.10.1
192.168.10.2
192.168.10.3
192.168.10.4
192.168.10.5
192.168.10.6
192.168.10.7
192.168.10.8
192.168.10.9
192.168.10.10
2960-24TT
Switch0
Switch1
Switch2
Switch3
Switch4
Switch5
Switch6
Switch7
Switch8
Switch9
PC-PT
PC0
PC1
PC2
PC4
PC5
PC6
PC7
PC8
PC9

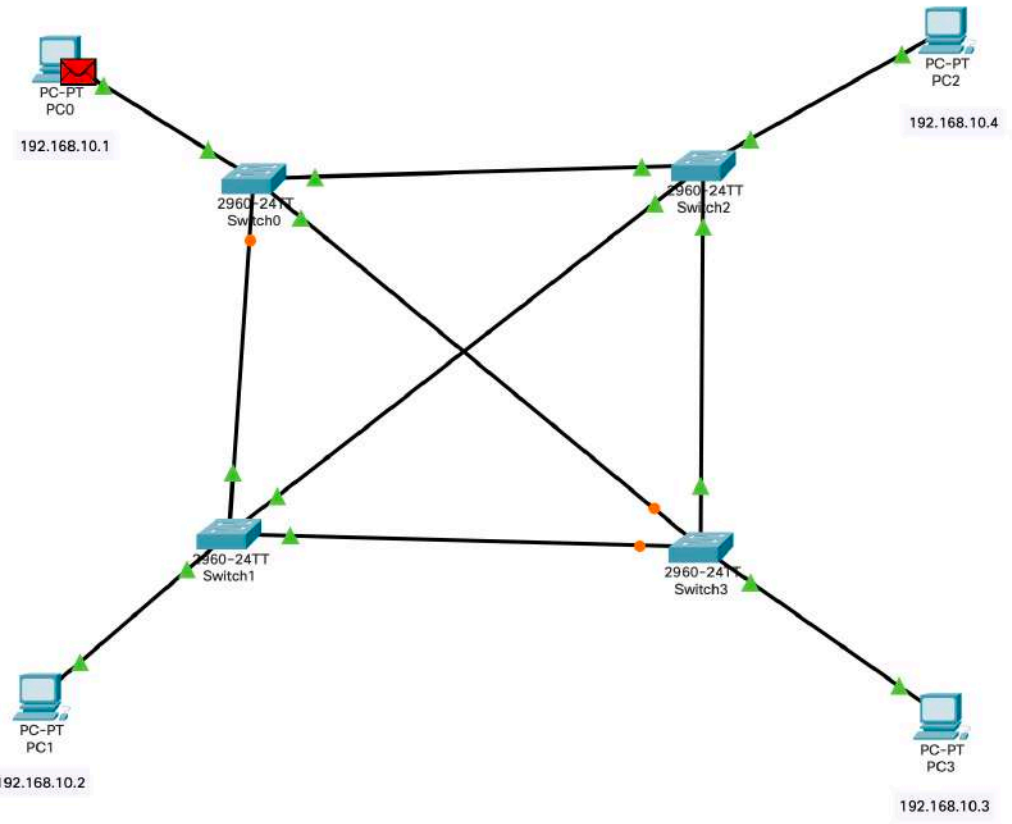

Tree topology
Apoorva Reddy Bagepalli
19BCE2196
192.168.10.1
192.168.10.2
192.168.10.3
192.168.10.4
192.168.10.5
192.168.10.6
192.168.10.7
192.168.10.8
192.168.10.9
192.168.10.10
2960-24TT
Switch0
Switch3
Switch4
Switch5
Switch6
Switch7
Switch8
Switch9


Tree topology
Apoorva Reddy Bagepalli
19BCE2196
192.168.10.1
192.168.10.2
192.168.10.3
192.168.10.4
192.168.10.5
192.168.10.6
192.168.10.7
192.168.10.8
192.168.10.9
192.168.10.10
2960-24TT
Switch0
Switch3
Switch4
Switch5
Switch6
Switch7
Switch8
Switch9

- **Mesh Topology**






PC-PT
PC0
192.168.10.1
PC-PT
PC2
192.168.10.4
2960-24TT
Switch0
2960-24TT
Switch2
2960-24TT
Switch1
2960-24TT
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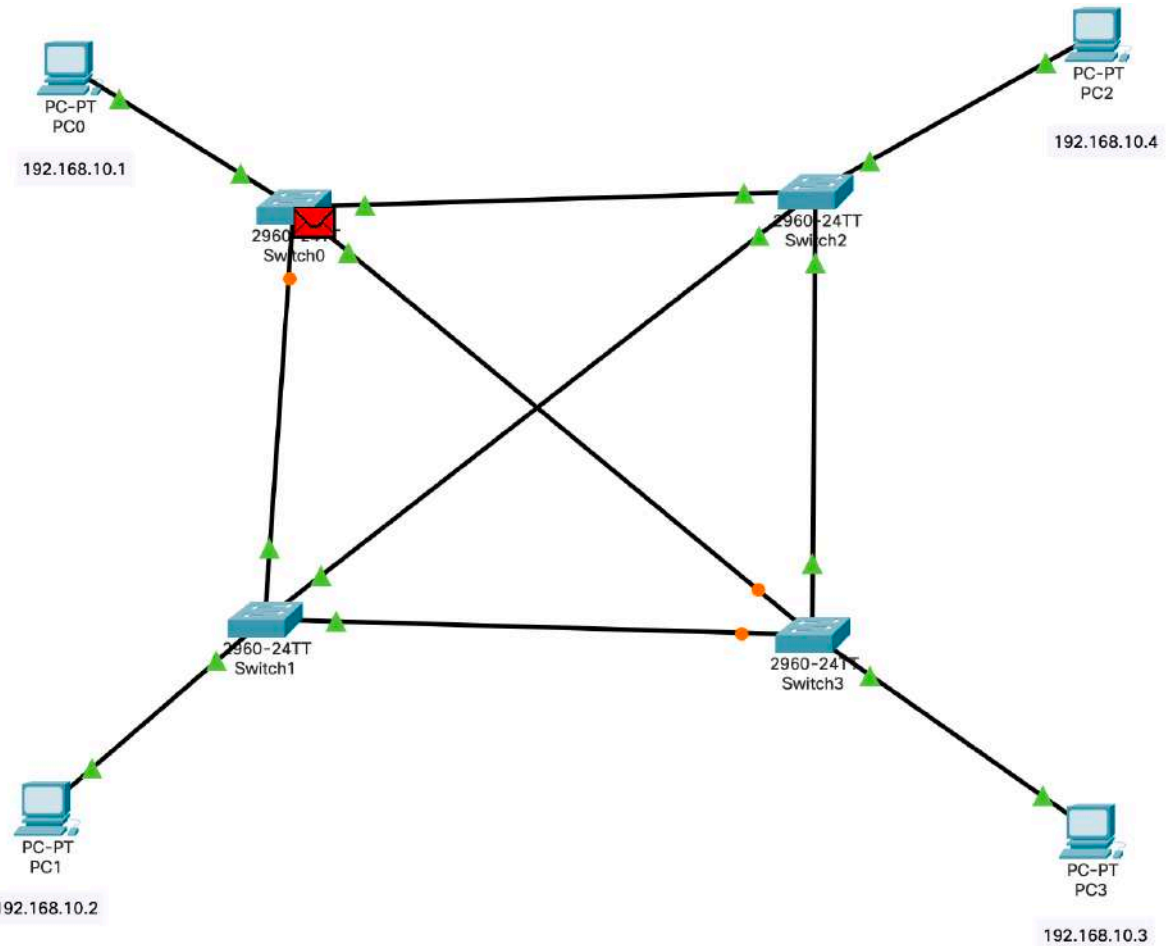
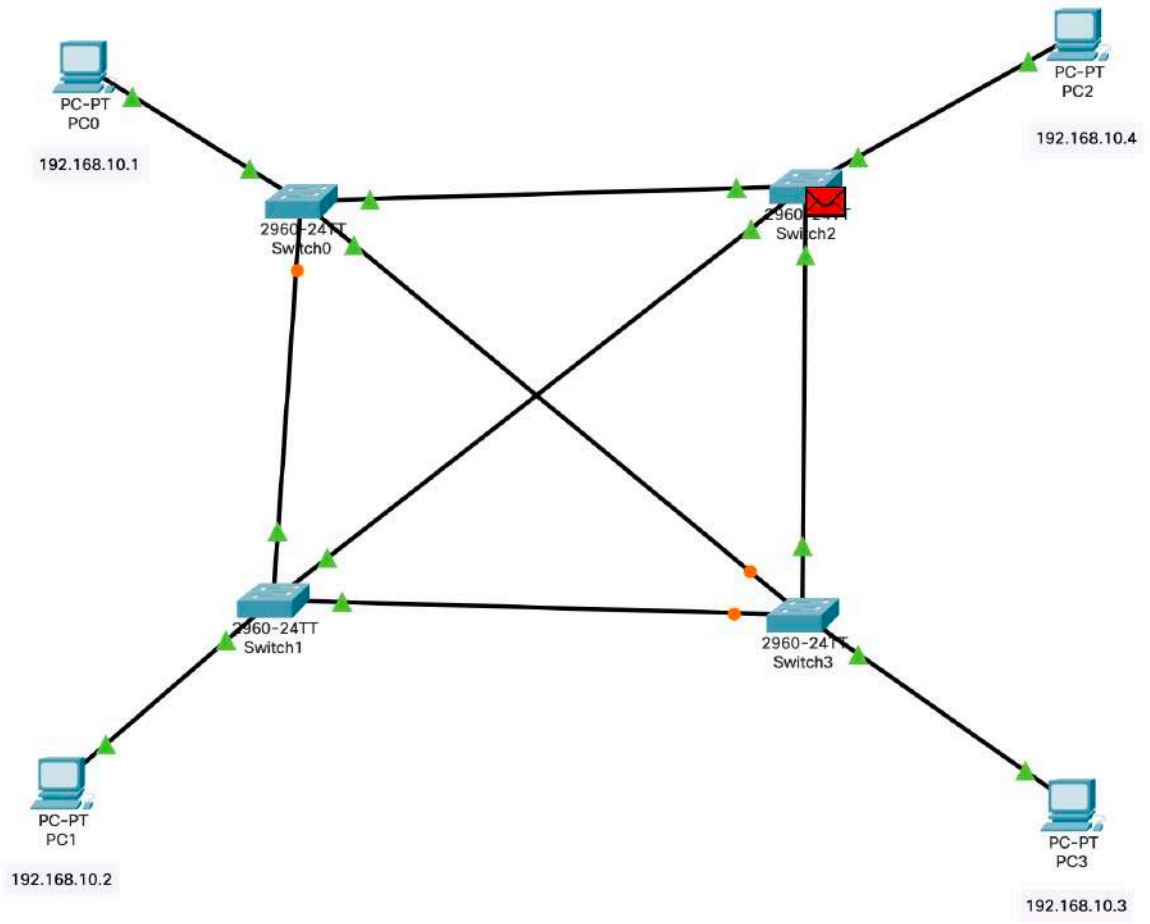
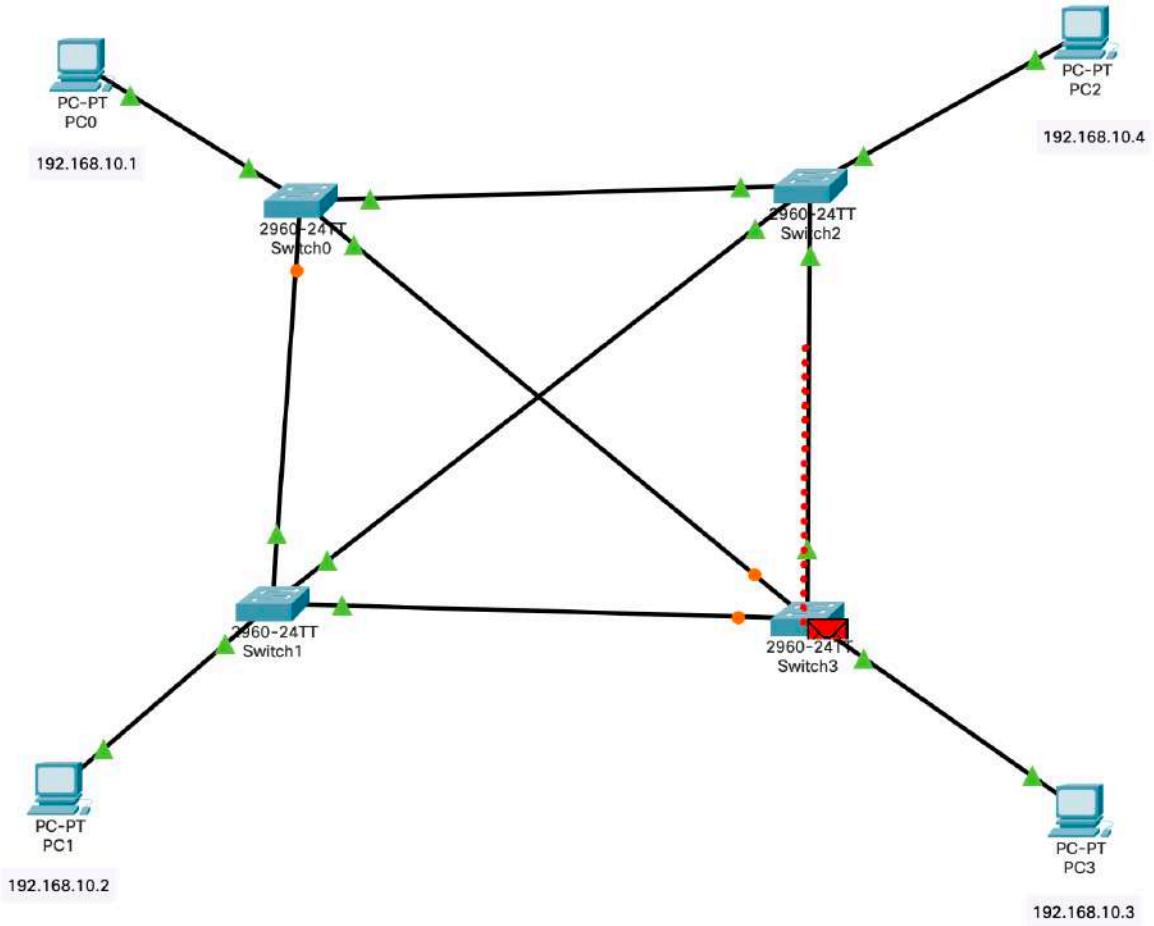
PC-PT
PC1
192.168.10.2
PC-PT
PC3
192.168.10.3


PC-PT
PC0
192.168.10.1
PC-PT
PC2
192.168.10.4
Switch0
2960-24TT
Switch2
2960-24TT
Switch1
2960-24TT
Switch3
PC-PT
PC1
192.168.10.2
PC-PT
PC3
192.168.10.3


PC-PT
PC0
192.168.10.1
PC-PT
PC2
192.168.10.4
2960-24TT
Switch0
2960-24TT
Switch2
2960-24TT
Switch1
2960-24TT
Switch3
PC-PT
PC1
192.168.10.2
PC-PT
PC3
192.168.10.3


PC-PT
PC0
192.168.10.1
PC-PT
PC2
192.168.10.4
2960-24TT
Switch0
2960-24TT
Switch2
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Switch1
2960-24TT
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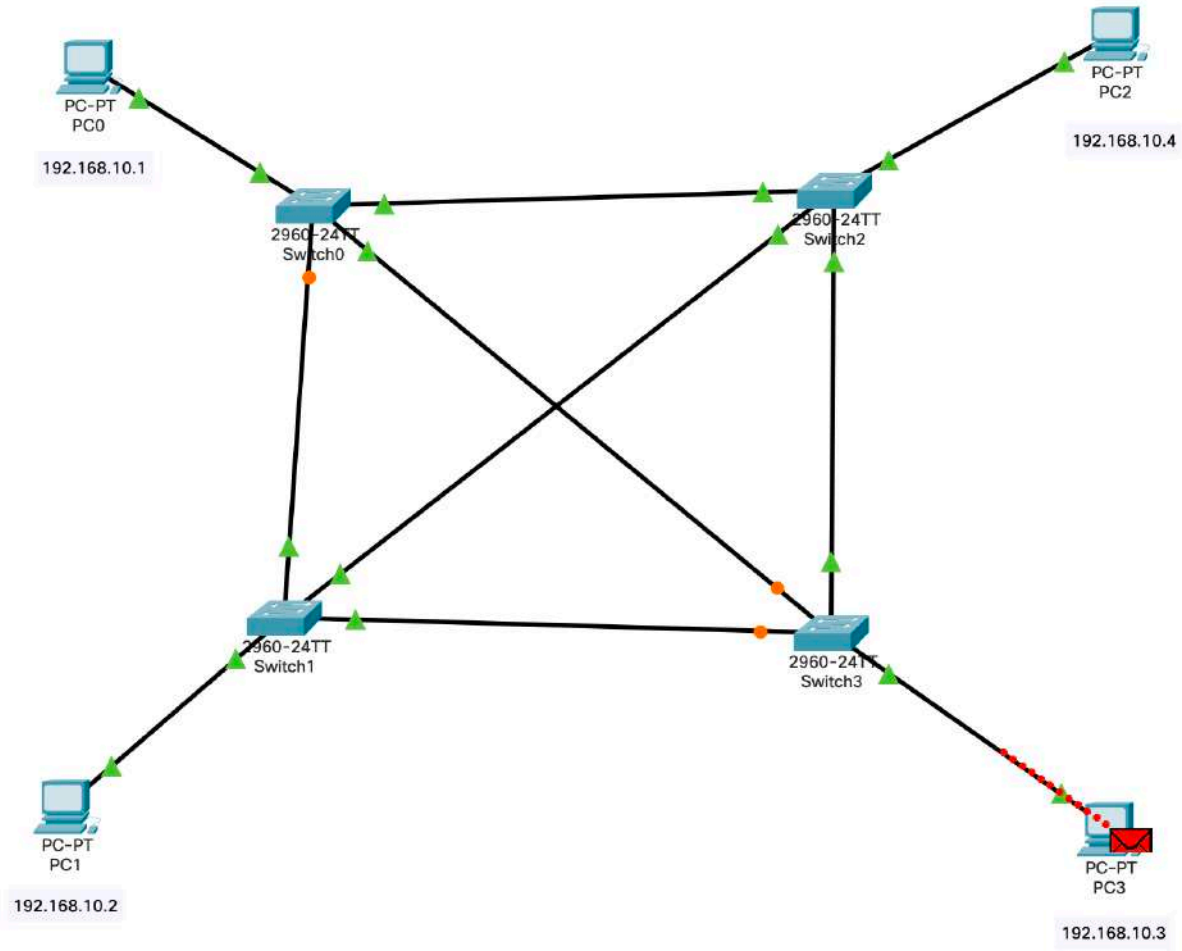
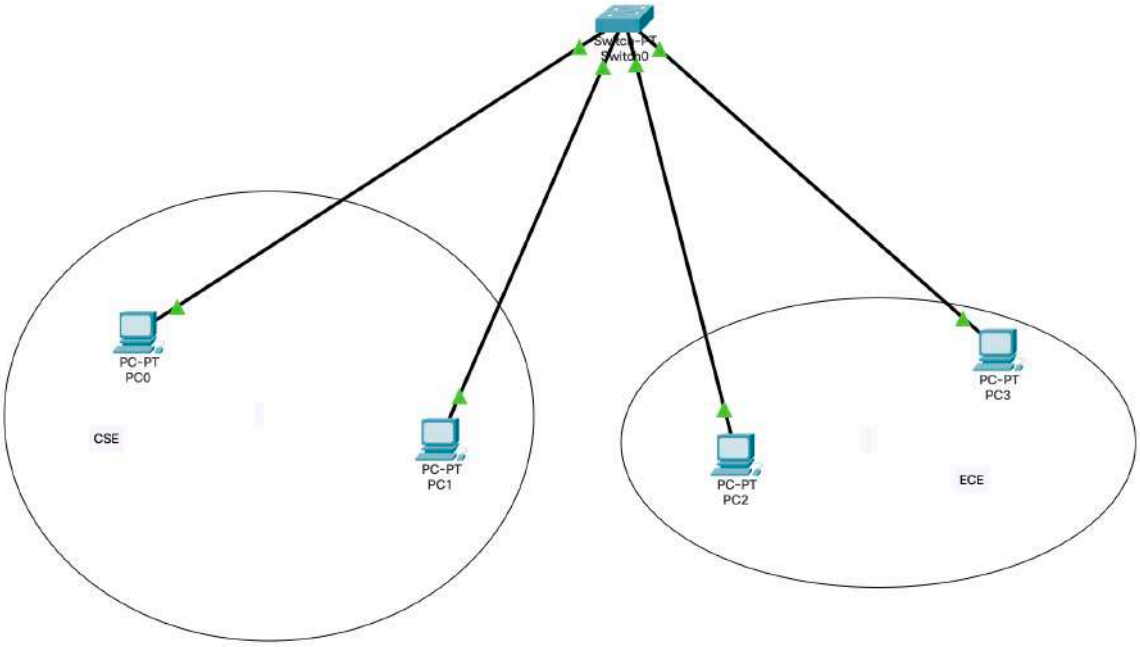
PC1
192.168.10.2
PC-PT
PC3
192.168.10.3


PC-PT
PC0
192.168.10.1
PC-PT
PC2
192.168.10.4
2960-24TT
Switch0
2960-24TT
Switch2
2960-24TT
Switch1
2960-24TT
Switch3
PC-PT
PC1
192.168.10.2
PC-PT
PC3
192.168.10.3

6(C) VLAN Configuration



CODE:

Switch0

Physical Config CLI Attributes

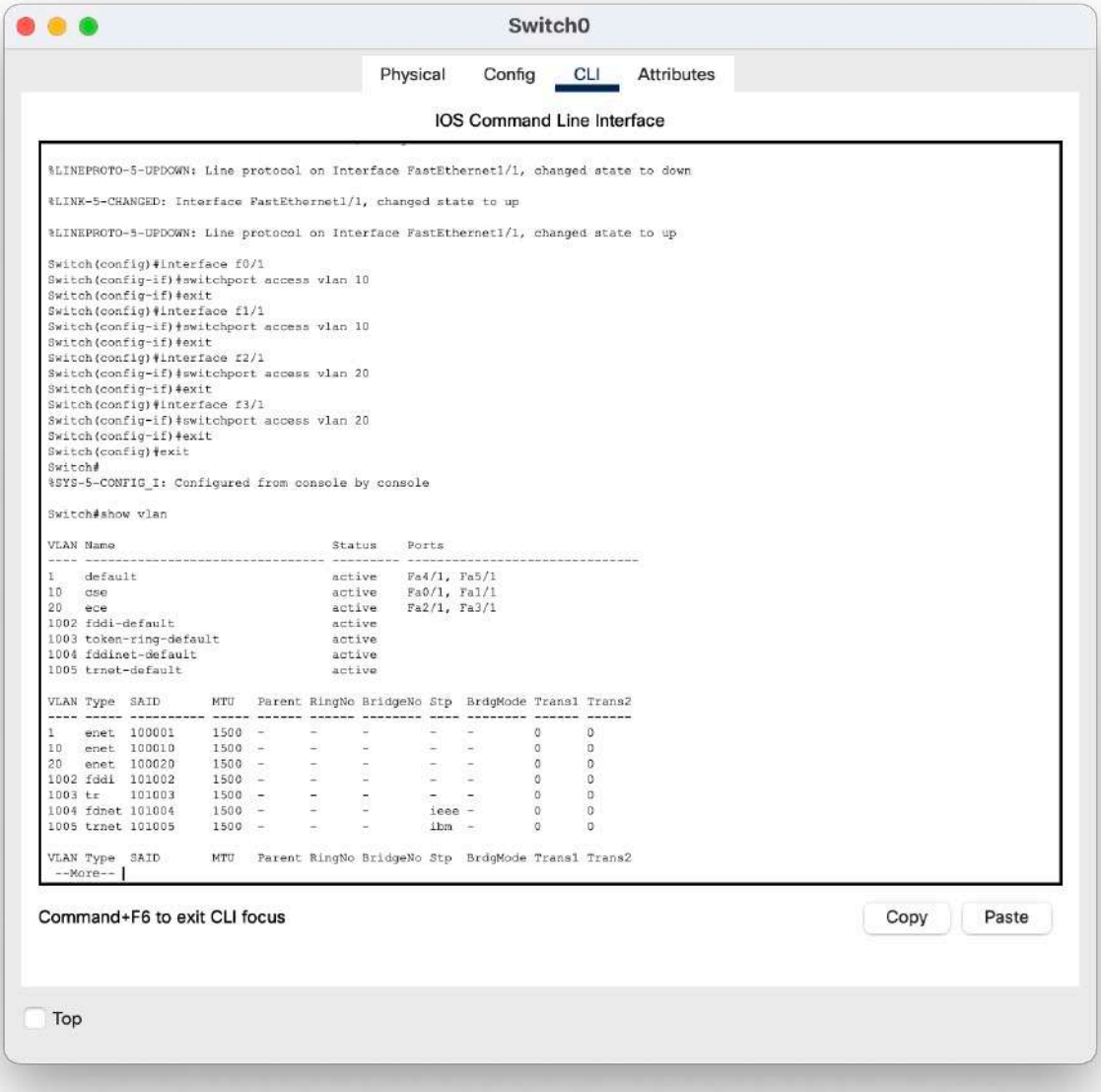
IOS Command Line Interface

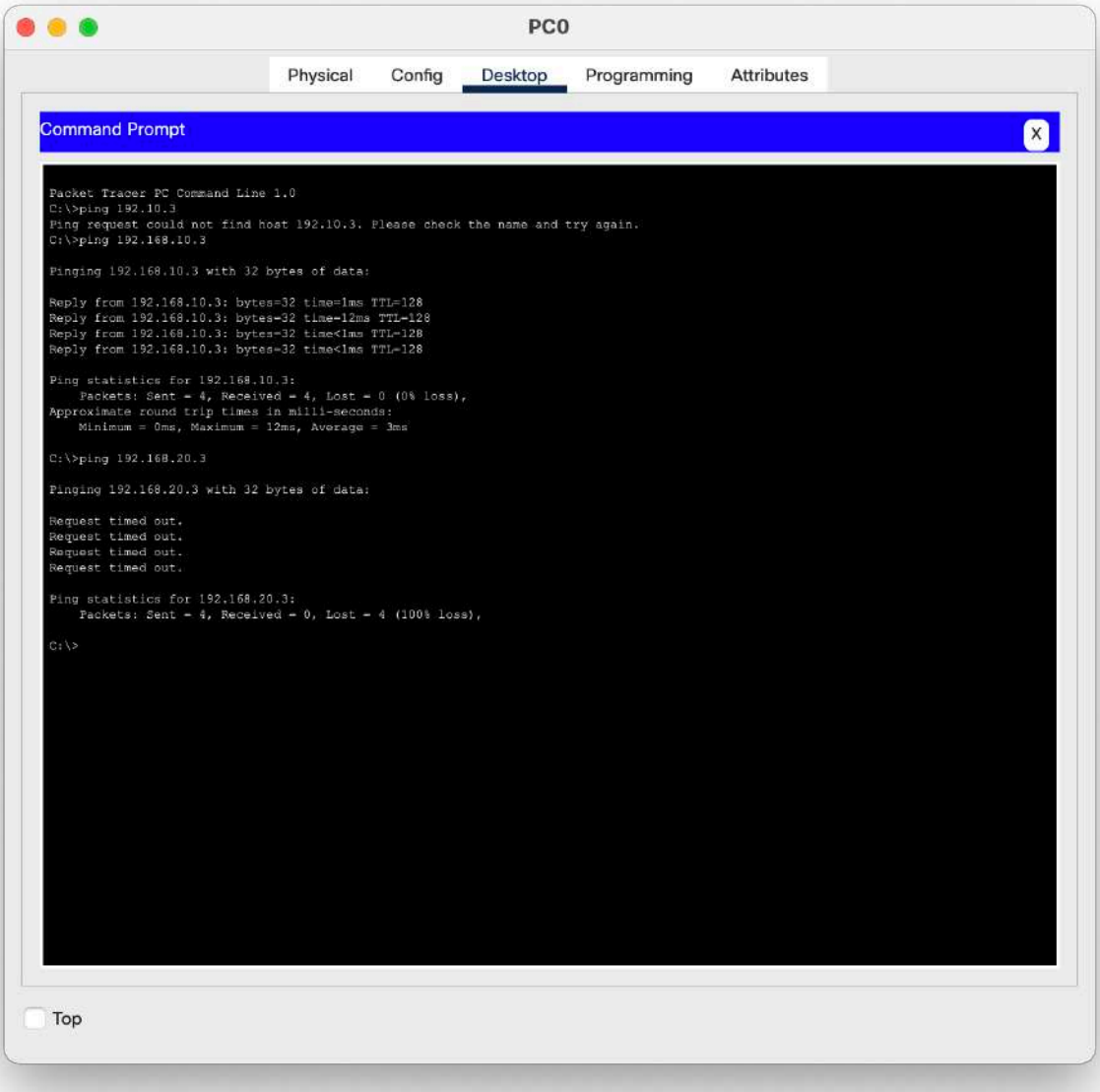
```
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet2/1, changed state to up

%LINK-5-CHANGED: Interface FastEthernet3/1, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet3/1, changed state to up


Switch>enable
Switch#confi
Configuring from terminal, memory, or network [terminal]?
Enter configuration commands, one per line.  End with CNTL/Z.
Switch(config)#vlan 10
Switch(config-vlan)#name cse
Switch(config-vlan)#exit
Switch(config)#vlan 20
Switch(config-vlan)#name ece
Switch(config-vlan)#exit
Switch(config)#exit
Switch#
%SYS-5-CONFIG_I: Configured from console by console

Switch#show
% Incomplete command.
Switch#show vlan

VLAN Name                             Status    Ports
---- -------------------------------- --------- -------------------------------
1    default                          active    Fa0/1, Fa1/1, Fa2/1, Fa3/1
                                                Fa4/1, Fa5/1
10   cse                              active
20   ece                              active
1002 fddi-default                     active
1003 token-ring-default               active
1004 fddinet-default                  active
1005 trnet-default                    active

VLAN Type  SAID       MTU   Parent RingNo BridgeNo Stp  BrdgMode Trans1 Trans2
---- ----- ---------- ----- ------ ------ -------- ---- -------- ------ ------
1    enet  100001     1500  -      -      -        -    -        0      0
10   enet  100010     1500  -      -      -        -    -        0      0
20   enet  100020     1500  -      -      -        -    -        0      0
1002 fddi  101002     1500  -      -      -        -    -        0      0
1003 tr    101003     1500  -      -      -        -    -        0      0
1004 fdnet 101004     1500  -      -      -        ieee -        0      0
1005 trnet 101005     1500  -      -      -        ibm  -        0      0

 --More--
```

Command+F6 to exit CLI focus

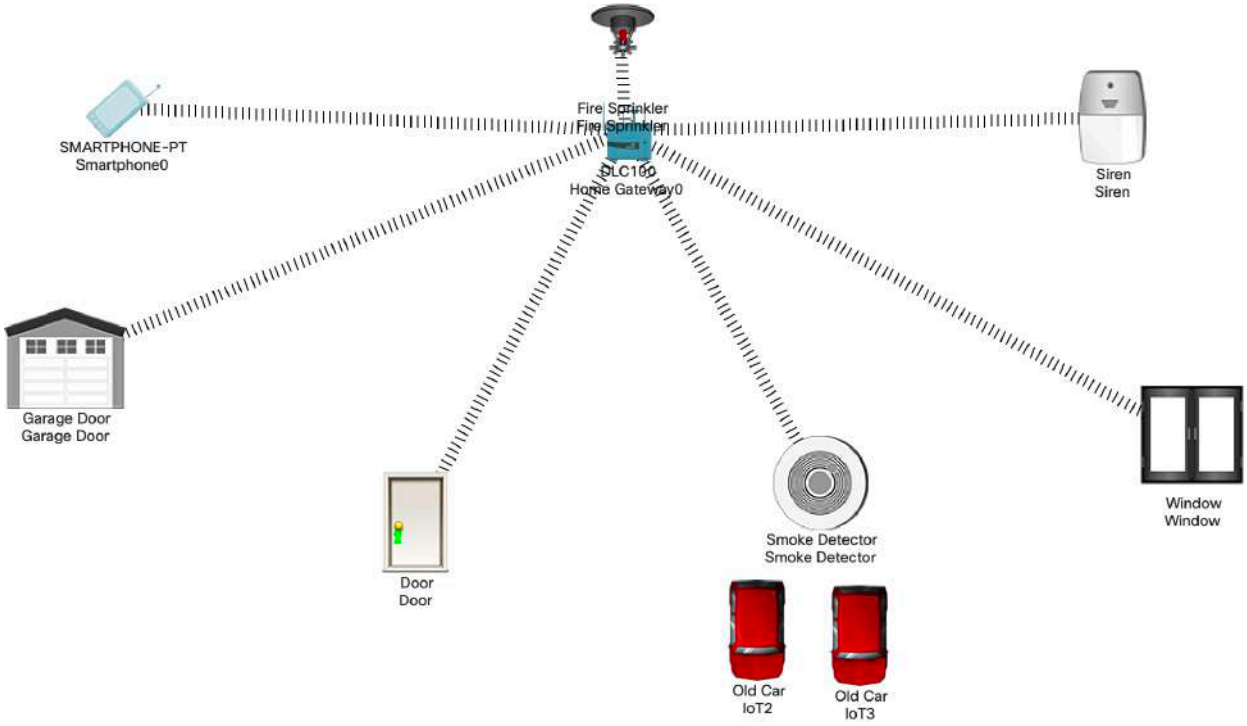
Copy Paste

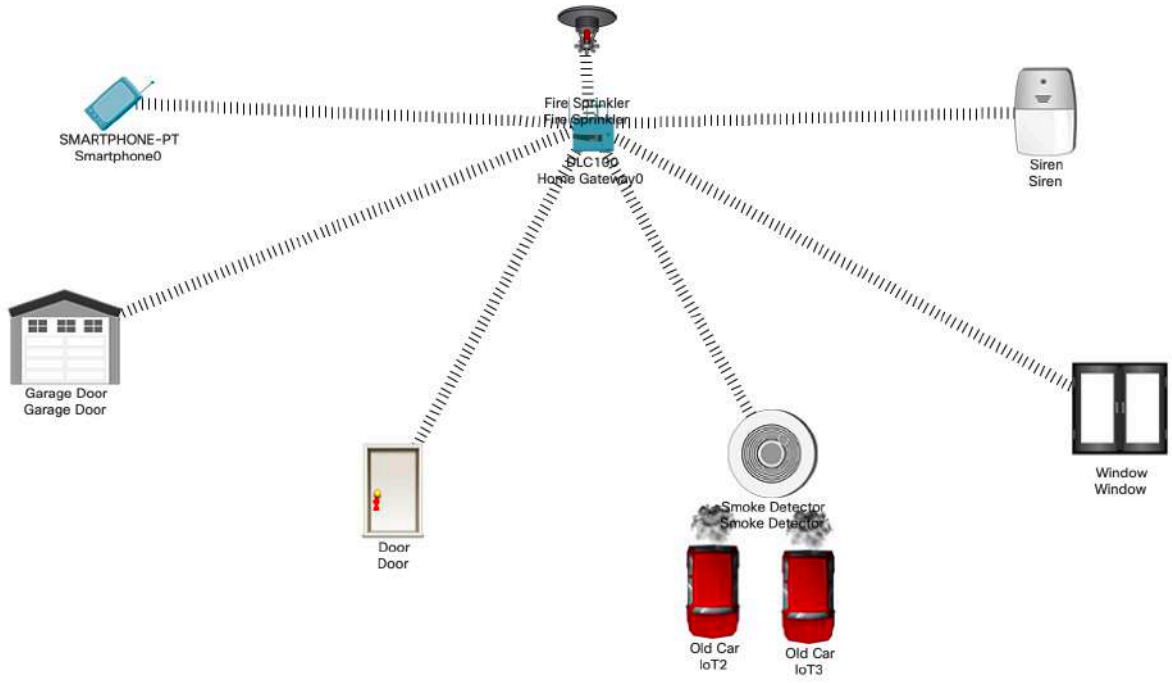
Top

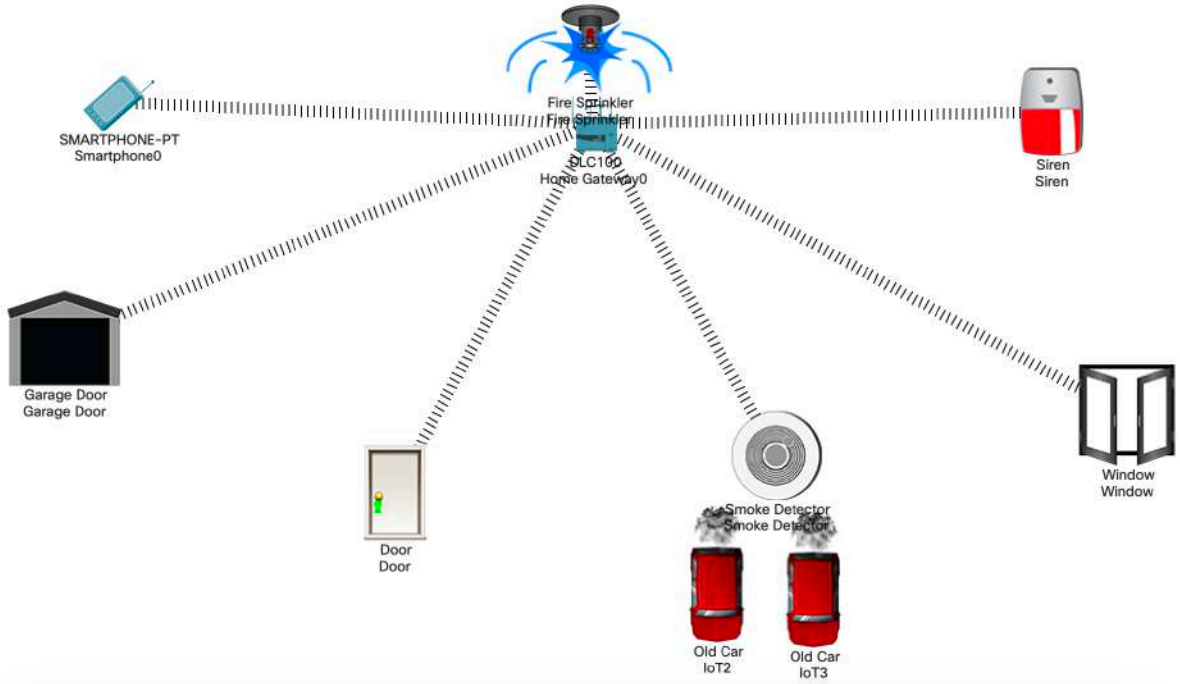

Switch0
Physical
Config
CLI
Attributes
IOS Command Line Interface
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet1/1, changed state to down
%LINK-5-CHANGED: Interface FastEthernet1/1, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet1/1, changed state to up
Switch(config)#interface f0/1
Switch(config-if)#switchport access vlan 10
Switch(config-if)#exit
Switch(config)#interface f1/1
Switch(config-if)#switchport access vlan 10
Switch(config-if)#exit
Switch(config)#interface f2/1
Switch(config-if)#switchport access vlan 20
Switch(config-if)#exit
Switch(config)#interface f3/1
Switch(config-if)#switchport access vlan 20
Switch(config-if)#exit
Switch(config)#exit
Switch#
%SYS-5-CONFIG_I: Configured from console by console
Switch#show vlan
VLAN Name Status Ports
1 default active Fa4/1, Fa5/1
10 cse active Fa0/1, Fa1/1
20 ece active Fa2/1, Fa3/1
1002 fddi-default active
1003 token-ring-default active
1004 fddinet-default active
1005 trnet-default active
VLAN Type SAID MTU Parent RingNo BridgeNo Stp BrdgMode Trans1 Trans2
1 enet 100001 1500 - - - - - 0 0
10 enet 100010 1500 - - - - - 0 0
20 enet 100020 1500 - - - - - 0 0
1002 fddi 101002 1500 - - - - - 0 0
1003 tr 101003 1500 - - - - - 0 0
1004 fdnet 101004 1500 - - - ieee - 0 0
1005 trnet 101005 1500 - - - ibm - 0 0
VLAN Type SAID MTU Parent RingNo BridgeNo Stp BrdgMode Trans1 Trans2
--More--
Command+F6 to exit CLI focus
Copy
Paste
Top

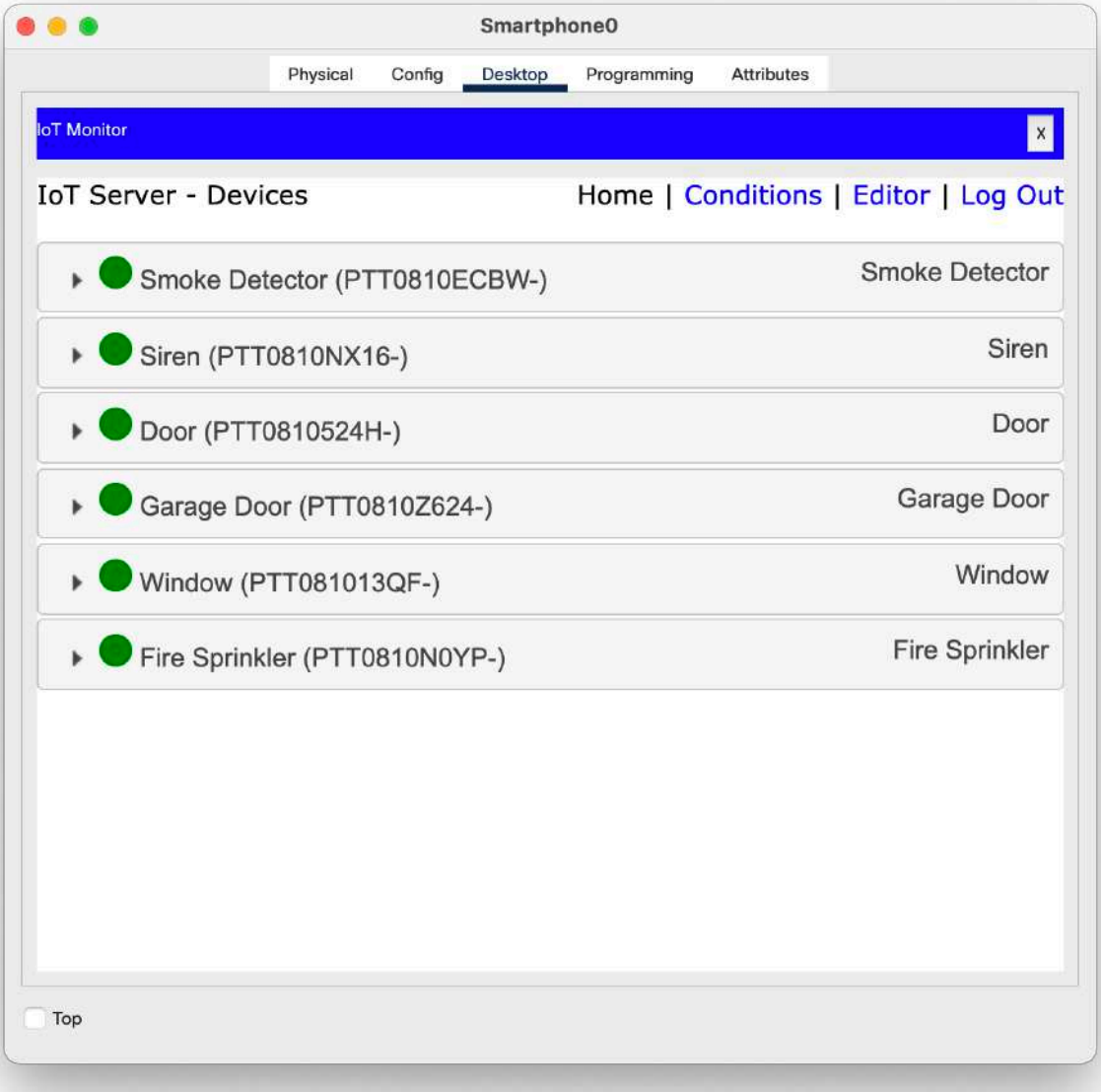


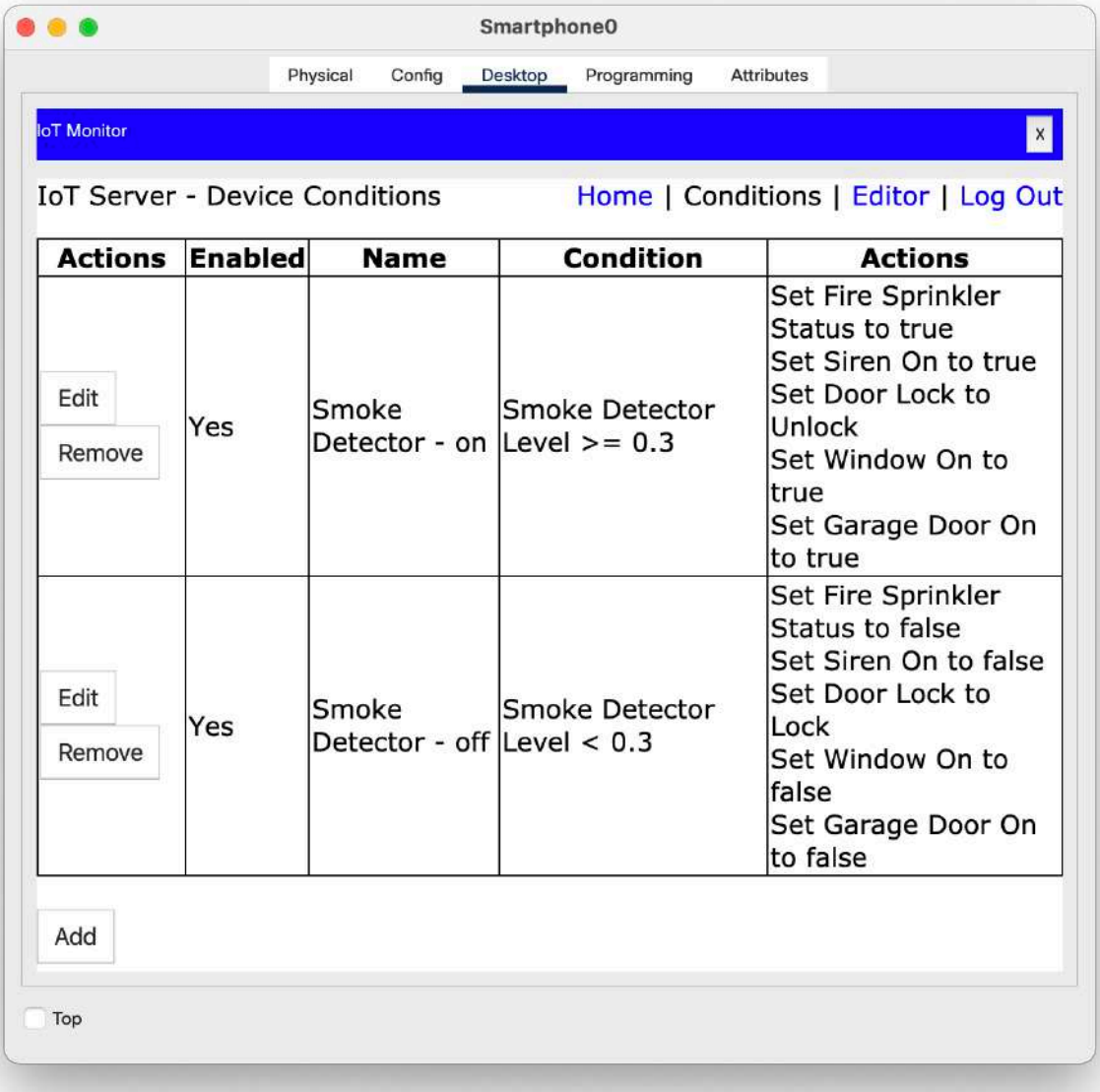
6(D) Fire/Smoke Detection


Fire Sprinkler
Fire Sprinkler
SMARTPHONE-PT
Smartphone0
DLC100
Home Gateway0
Siren
Siren
Garage Door
Garage Door
Window
Window
Smoke Detector
Smoke Detector
Door
Door
Old Car
IoT2
Old Car
IoT3


Fire Sprinkler
Fire Sprinkler
SMARTPHONE-PT
Smartphone0
DLC100
Home Gateway0
Siren
Siren
Garage Door
Garage Door
Window
Window
Smoke Detector
Smoke Detector
Door
Door
Old Car
IoT2
Old Car
IoT3


Fire Sprinkler
Fire Sprinkler
SMARTPHONE-PT
Smartphone0
SLC1GG
Home Gateway0
Siren
Siren
Garage Door
Garage Door
Door
Door
Smoke Detector
Smoke Detector
Window
Window
Old Car
IoT2
Old Car
IoT3


Smartphone0
Physical
Config
Desktop
Programming
Attributes
IoT Monitor
X
IoT Server - Devices
Home | Conditions | Editor | Log Out
Smoke Detector (PTT0810ECBW-)
Smoke Detector
Siren (PTT0810NX16-)
Siren
Door (PTT0810524H-)
Door
Garage Door (PTT0810Z624-)
Garage Door
Window (PTT081013QF-)
Window
Fire Sprinkler (PTT0810N0YP-)
Fire Sprinkler
Top

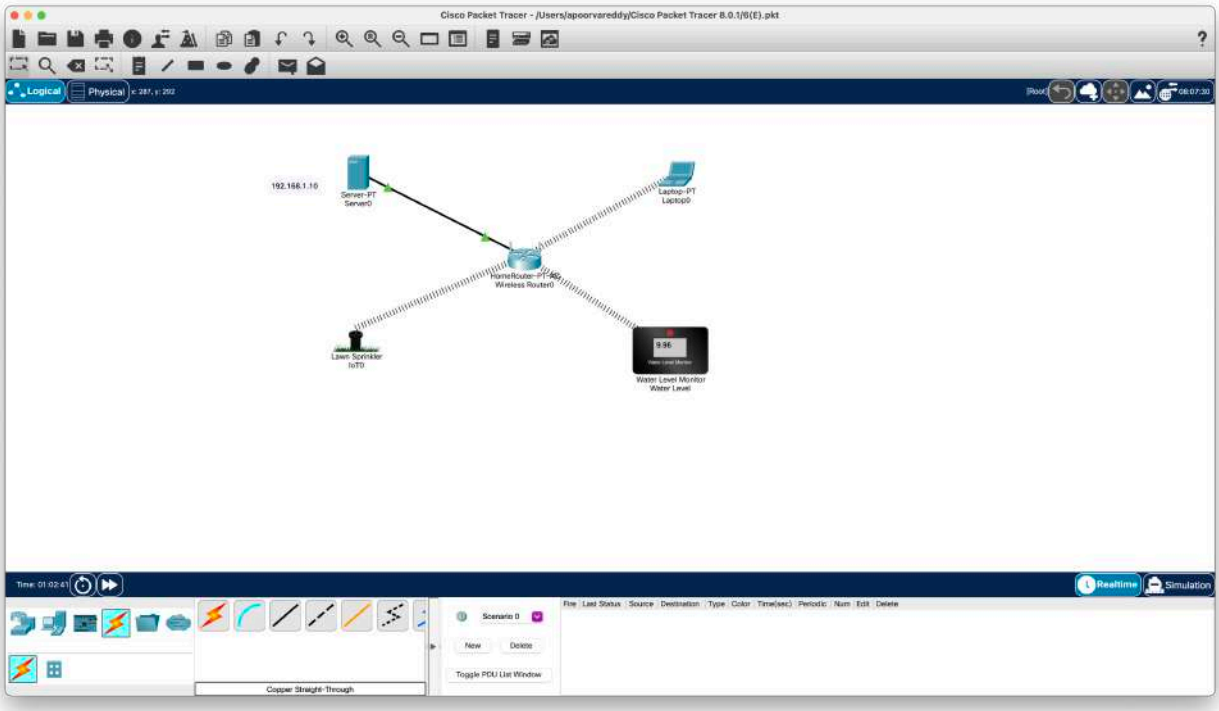

Smartphone0
Physical
Config
Desktop
Programming
Attributes
IoT Monitor
X
IoT Server - Device Conditions
Home | Conditions | Editor | Log Out
Actions
Enabled
Name
Condition
Actions
Edit
Remove
Yes
Smoke Detector - on
Smoke Detector Level >= 0.3
Set Fire Sprinkler Status to true
Set Siren On to true
Set Door Lock to Unlock
Set Window On to true
Set Garage Door On to true
Edit
Remove
Yes
Smoke Detector - off
Smoke Detector Level < 0.3
Set Fire Sprinkler Status to false
Set Siren On to false
Set Door Lock to Lock
Set Window On to false
Set Garage Door On to false
Add
Top

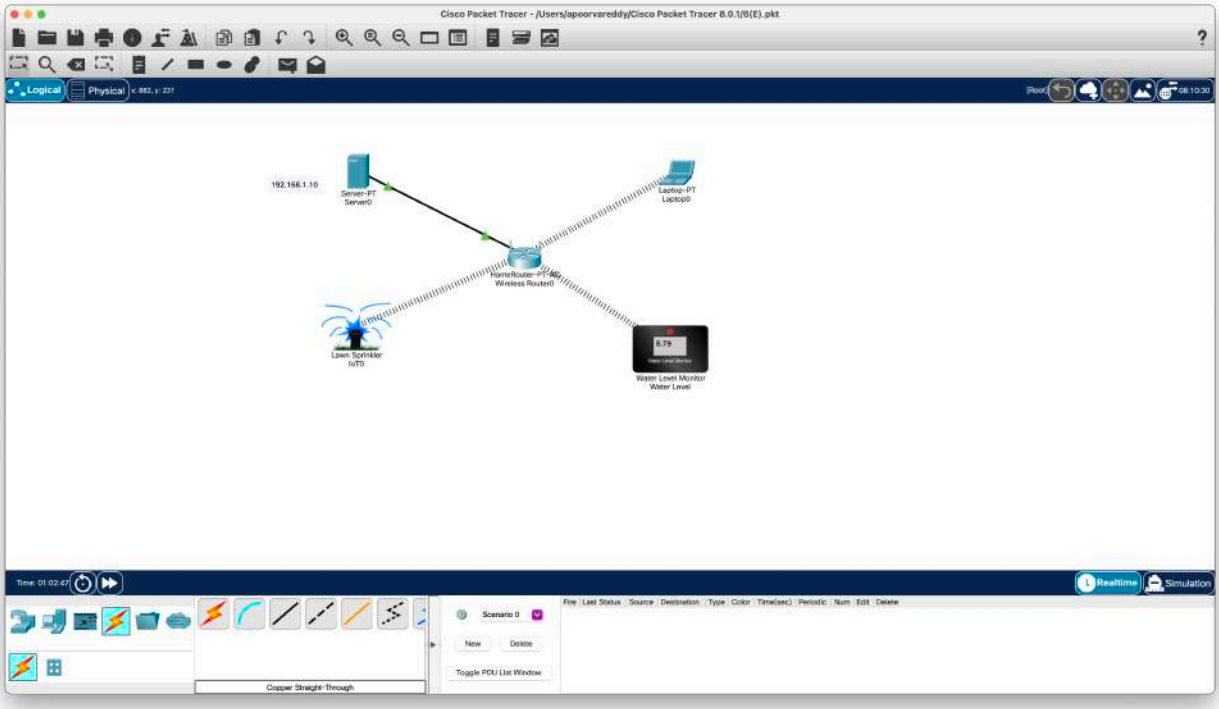
6(E) Smart Garden

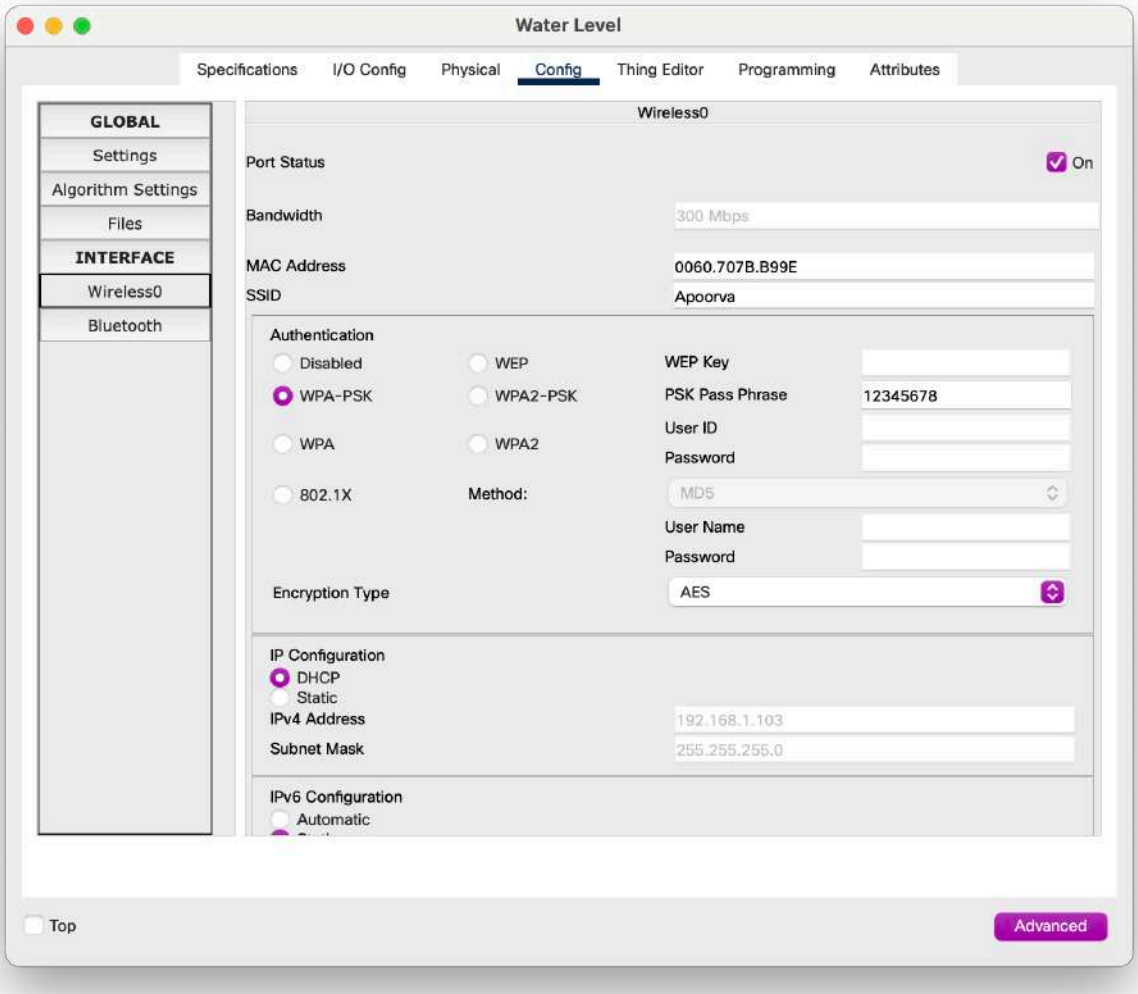
Description :

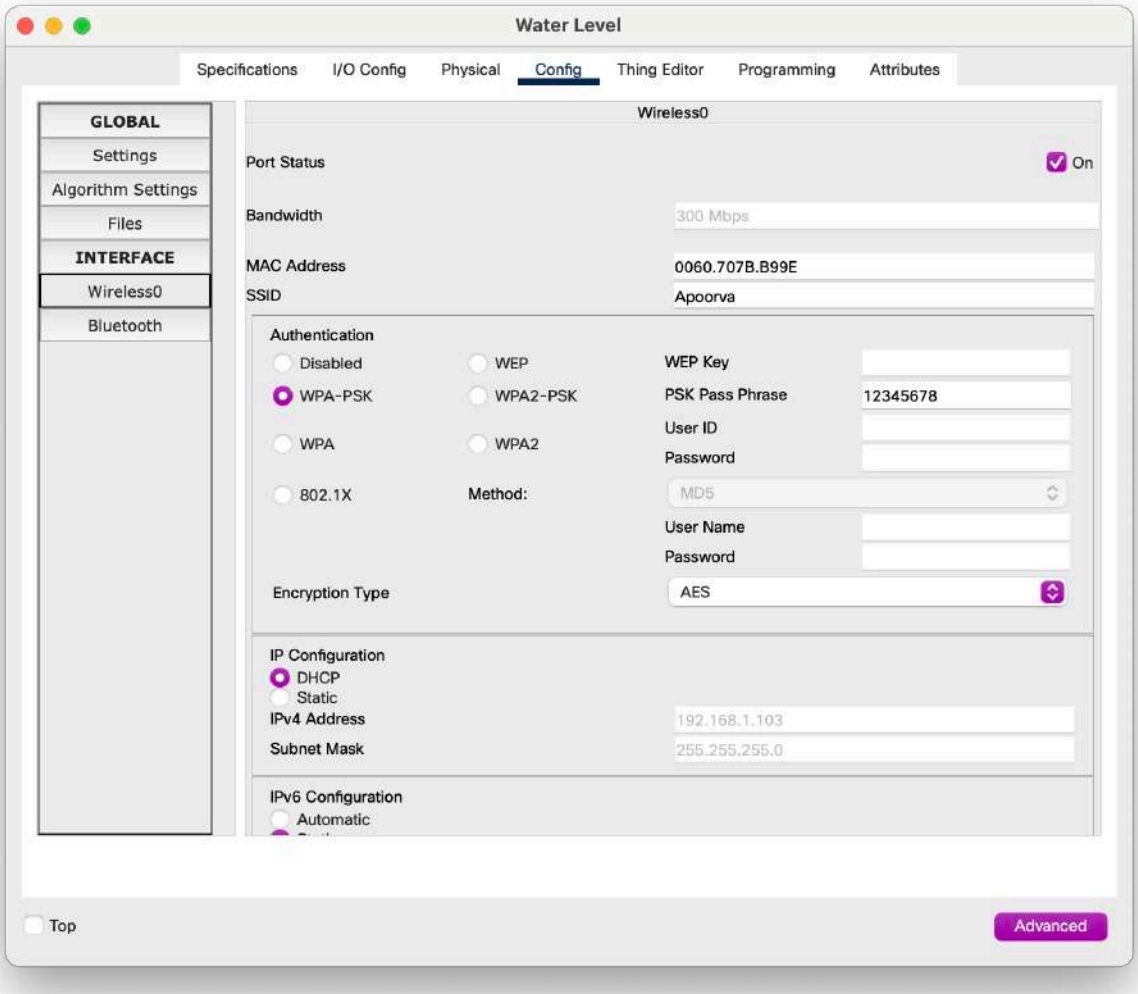
- Drag and drop server, home router, laptop, lawn sprinkler and Water Level Monitor
- Configure server with IP address “192.168.1.10” and default gateway “192.168.1.1”
- Configure default gateway “192.168.1.1” in the home router
- Configure the SSID and WPA for the router
- Connect the router service with lawn sprinkler, laptop and Water level monitor
- Connect the IoT server with lawn sprinkler and water level monitor
- Configure conditions for the devices
- Start the process

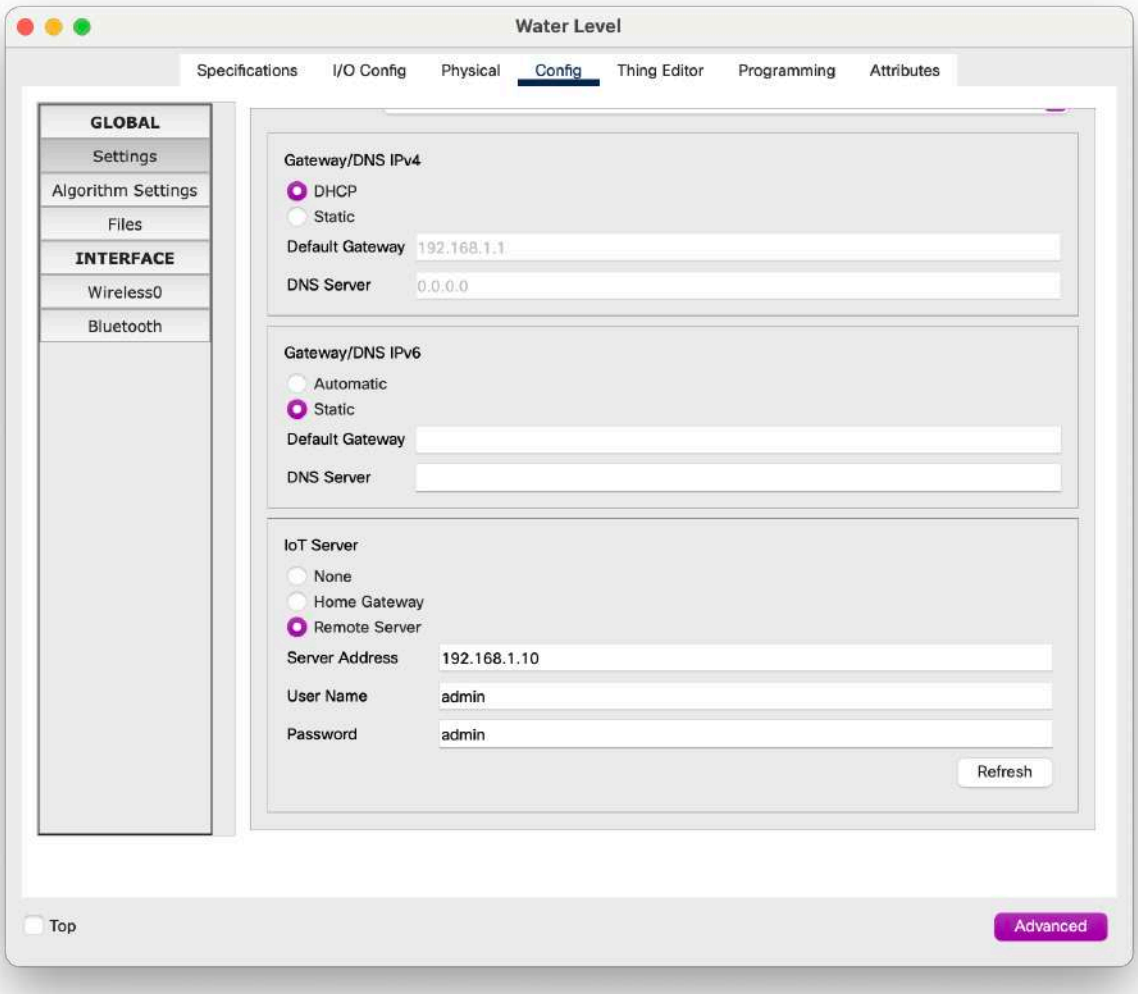
ScreenShots:

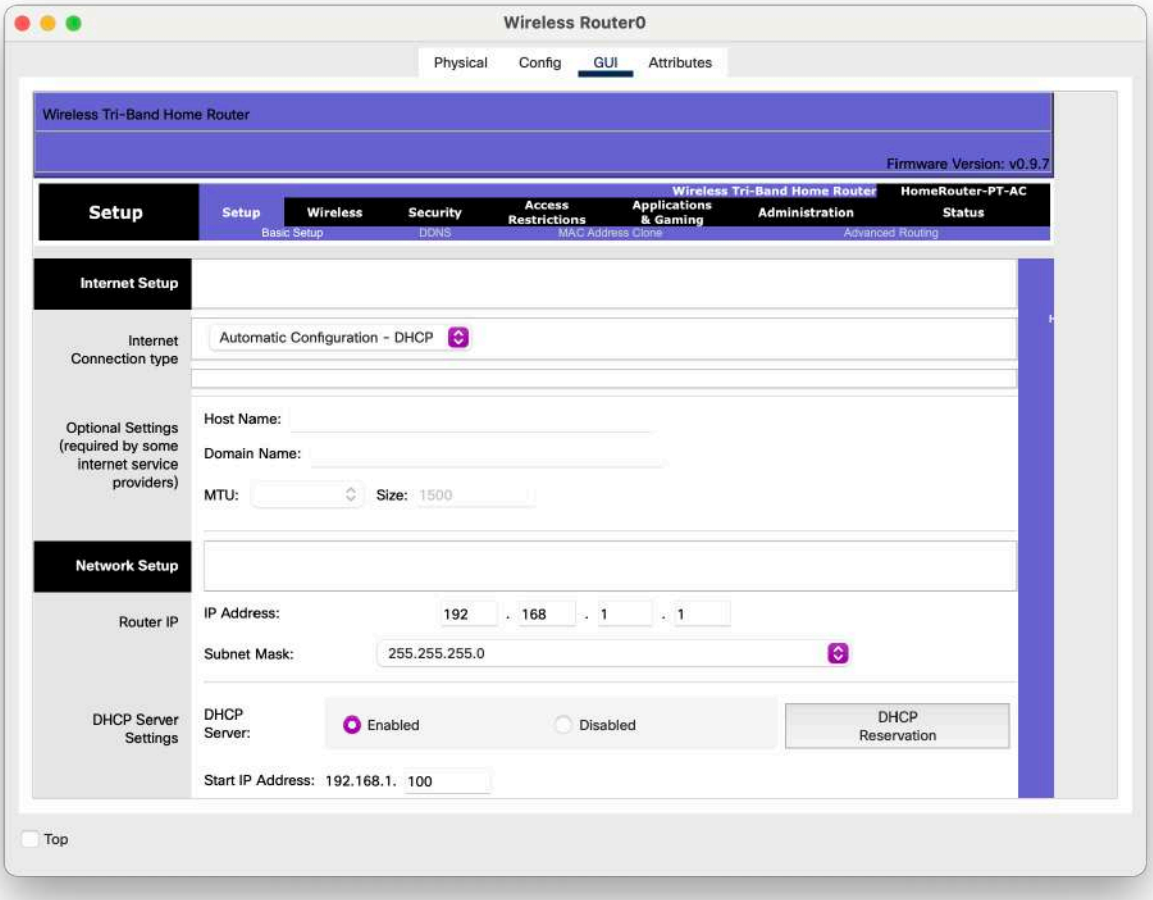


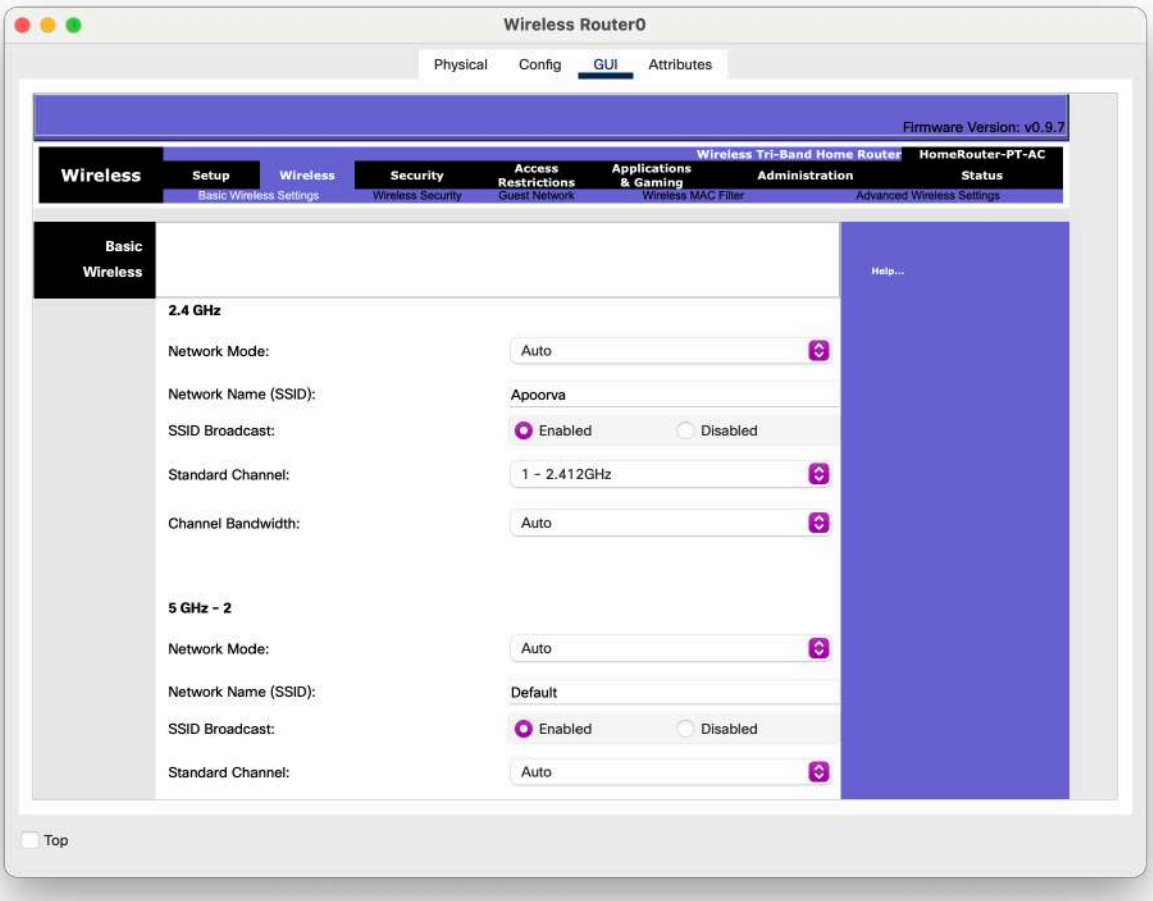


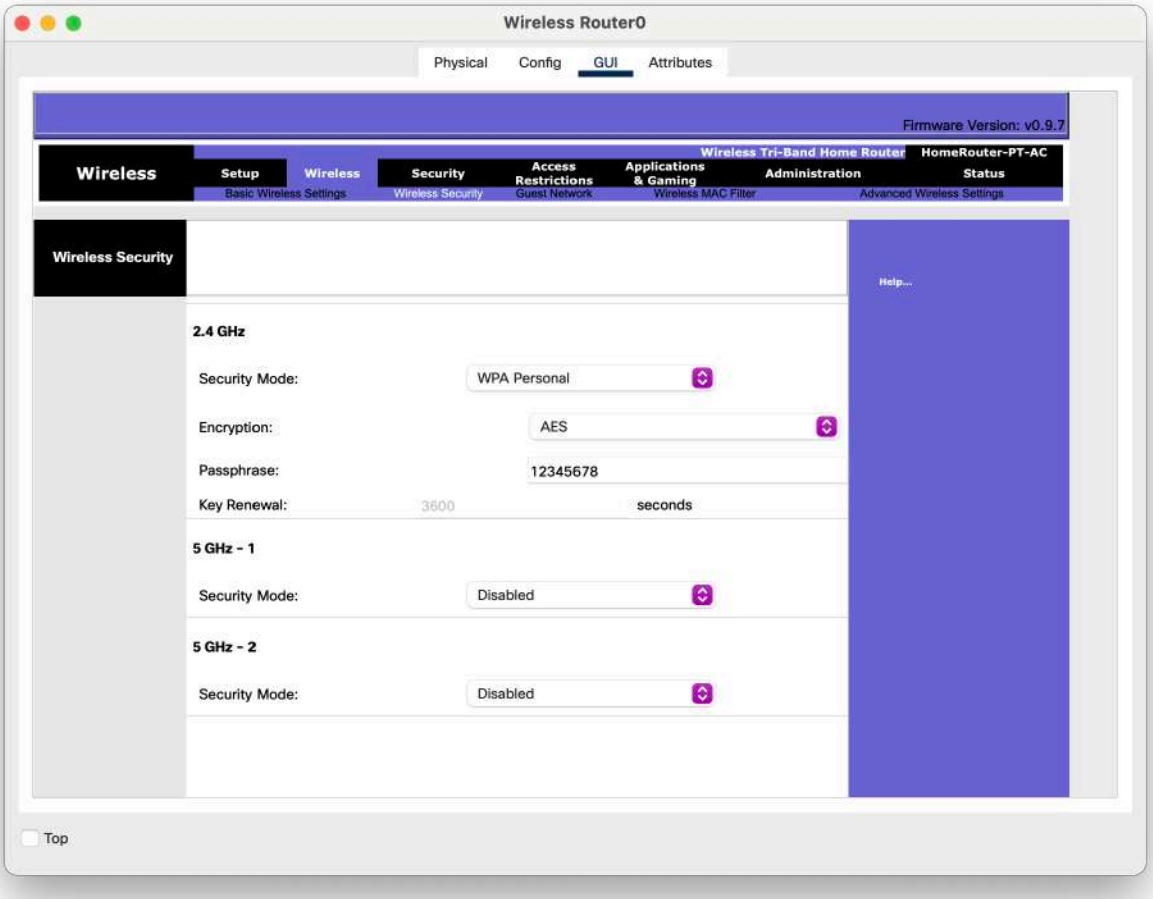

Water Level
Specifications
I/O Config
Physical
Config
Thing Editor
Programming
Attributes
GLOBAL
Settings
Algorithm Settings
Files
INTERFACE
Wireless0
Bluetooth
Wireless0
Port Status
On
Bandwidth
300 Mbps
MAC Address
0060.707B.B99E
SSID
Apoorva
Authentication
Disabled
WEP
WPA-PSK
WPA2-PSK
WPA
WPA2
802.1X
Method:
MD5
WEP Key
PSK Pass Phrase
12345678
User ID
Password
User Name
Password
Encryption Type
AES
IP Configuration
DHCP
Static
IPv4 Address
192.168.1.103
Subnet Mask
255.255.255.0
IPv6 Configuration
Automatic
Top
Advanced

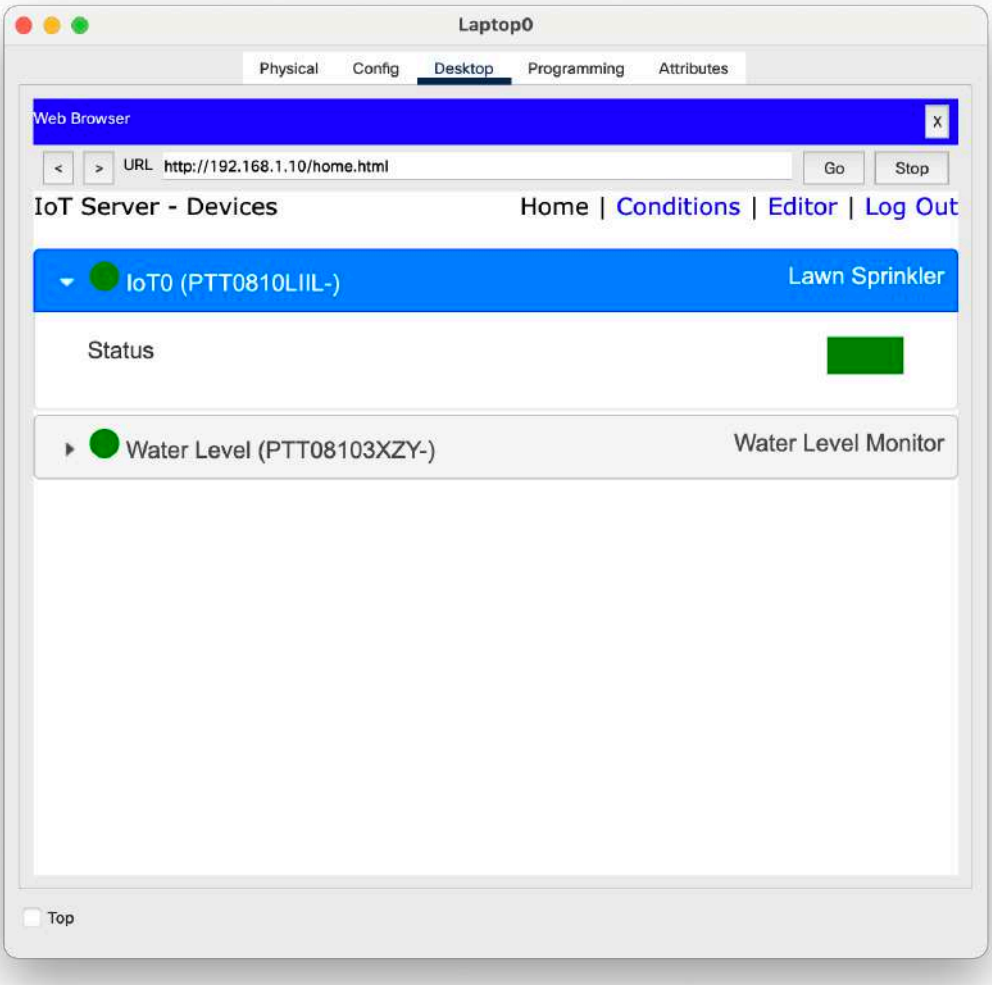

Water Level
Specifications
I/O Config
Physical
Config
Thing Editor
Programming
Attributes
GLOBAL
Settings
Algorithm Settings
Files
INTERFACE
Wireless0
Bluetooth
Wireless0
Port Status
On
Bandwidth
300 Mbps
MAC Address
0060.707B.B99E
SSID
Apoorva
Authentication
Disabled
WEP
WPA-PSK
WPA2-PSK
WPA
WPA2
802.1X
Method:
MD5
WEP Key
PSK Pass Phrase
12345678
User ID
Password
User Name
Password
Encryption Type
AES
IP Configuration
DHCP
Static
IPv4 Address
192.168.1.103
Subnet Mask
255.255.255.0
IPv6 Configuration
Automatic
Top
Advanced


Water Level
Specifications
I/O Config
Physical
Config
Thing Editor
Programming
Attributes
GLOBAL
Settings
Algorithm Settings
Files
INTERFACE
Wireless0
Bluetooth
Gateway/DNS IPv4
DHCP
Static
Default Gateway
192.168.1.1
DNS Server
0.0.0.0
Gateway/DNS IPv6
Automatic
Static
Default Gateway
DNS Server
IoT Server
None
Home Gateway
Remote Server
Server Address
192.168.1.10
User Name
admin
Password
admin
Refresh
Top
Advanced


Wireless Router0
Physical
Config
GUI
Attributes
Wireless Tri-Band Home Router
Firmware Version: v0.9.7
Setup
Wireless
Security
Access Restrictions
Applications & Gaming
Administration
Status
HomeRouter-PT-AC
Basic Setup
DDNS
MAC Address Clone
Advanced Routing
Internet Setup
Internet Connection type
Automatic Configuration - DHCP
Optional Settings (required by some internet service providers)
Host Name:
Domain Name:
MTU:
Size:
1500
Network Setup
Router IP
IP Address:
192 . 168 . 1 . 1
Subnet Mask:
255.255.255.0
DHCP Server Settings
DHCP Server:
Enabled
Disabled
DHCP Reservation
Start IP Address: 192.168.1. 100
Top


Wireless Router0
Physical
Config
GUI
Attributes
Firmware Version: v0.9.7
Wireless
Setup
Wireless
Security
Access Restrictions
Applications & Gaming
Administration
Status
Wireless Tri-Band Home Router
HomeRouter-PT-AC
Basic Wireless Settings
Wireless Security
Guest Network
Wireless MAC Filter
Advanced Wireless Settings
Basic Wireless
Help...
2.4 GHz
Network Mode:
Auto
Network Name (SSID):
Apoorva
SSID Broadcast:
Enabled
Disabled
Standard Channel:
1 - 2.412GHz
Channel Bandwidth:
Auto
5 GHz - 2
Network Mode:
Auto
Network Name (SSID):
Default
SSID Broadcast:
Enabled
Disabled
Standard Channel:
Auto
Top


Wireless Router0
Physical
Config
GUI
Attributes
Firmware Version: v0.9.7
Wireless
Setup
Wireless
Security
Access Restrictions
Applications & Gaming
Administration
Status
Wireless Tri-Band Home Router
HomeRouter-PT-AC
Basic Wireless Settings
Wireless Security
Guest Network
Wireless MAC Filter
Advanced Wireless Settings
Wireless Security
Help...
2.4 GHz
Security Mode:
WPA Personal
Encryption:
AES
Passphrase:
12345678
Key Renewal:
3600
seconds
5 GHz - 1
Security Mode:
Disabled
5 GHz - 2
Security Mode:
Disabled
Top


Laptop0
Physical
Config
Desktop
Programming
Attributes
Web Browser
X
URL http://192.168.1.10/home.html
Go
Stop
IoT Server - Devices
Home | Conditions | Editor | Log Out
IoT0 (PTT0810LIIL-)
Lawn Sprinkler
Status
Water Level (PTT08103XZY-)
Water Level Monitor
Top