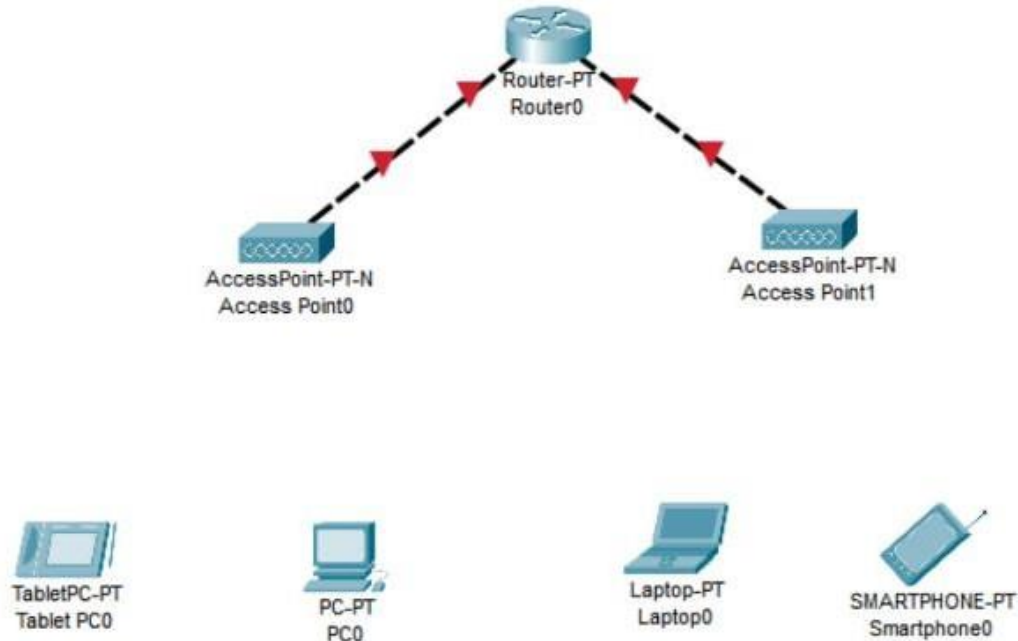


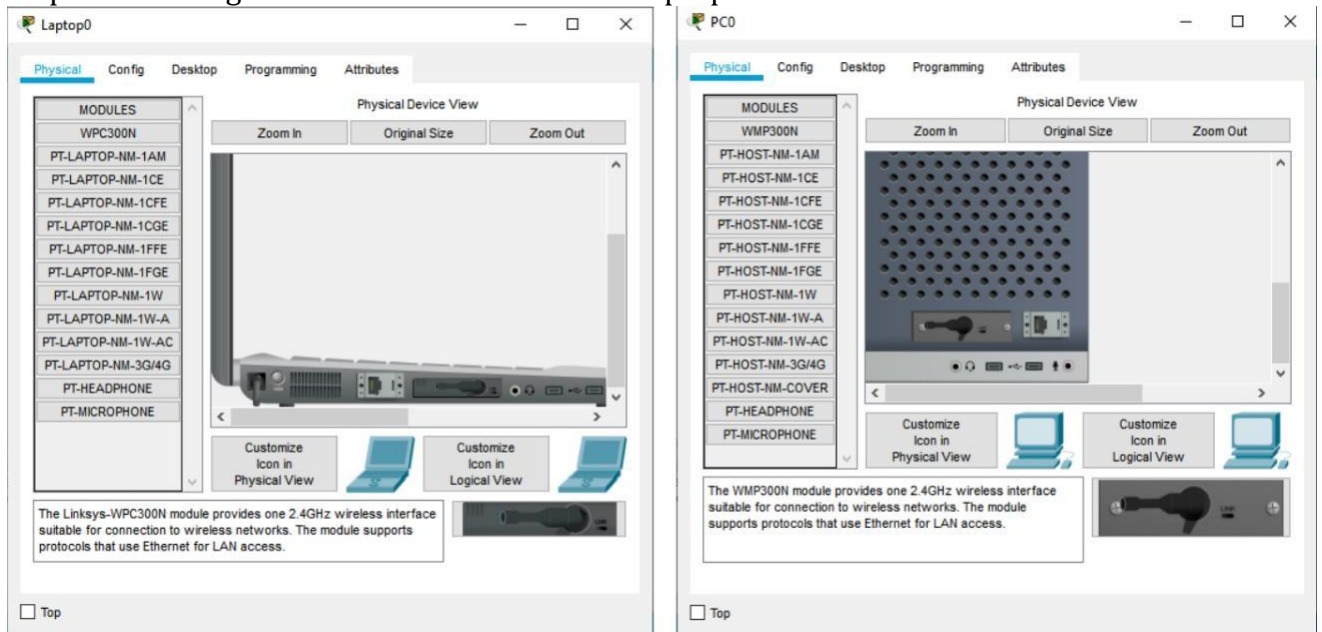
PRACTICAL NO:06

Aim: Implement a Wireless sensor network simulation.

Step1: Putting together all the end devices, Router and Access points.



Step 2: Switching on the wireless interface on Laptop and PC.



Step 3: Enabling WEP Authentication and securing the Access points.

The screenshot shows the configuration window for Access Point0. The 'Config' tab is selected. On the left, under 'INTERFACE', 'Port 1' is highlighted. The main configuration area for Port 1 shows the following settings:

- Port Status: ☒ On
- SSID: Default
- 2.4 GHz Channel: 6
- Coverage Range (meters): 250.00
- Authentication: ☒ WEP (Selected), ☐ Disabled, ☐ WPA-PSK, ☐ WPA2-PSK
- WEP Key: 1234567890
- User ID: (empty field)
- Password: (empty field)
- Encryption Type: 40/64-Bits (10 Hex digits)

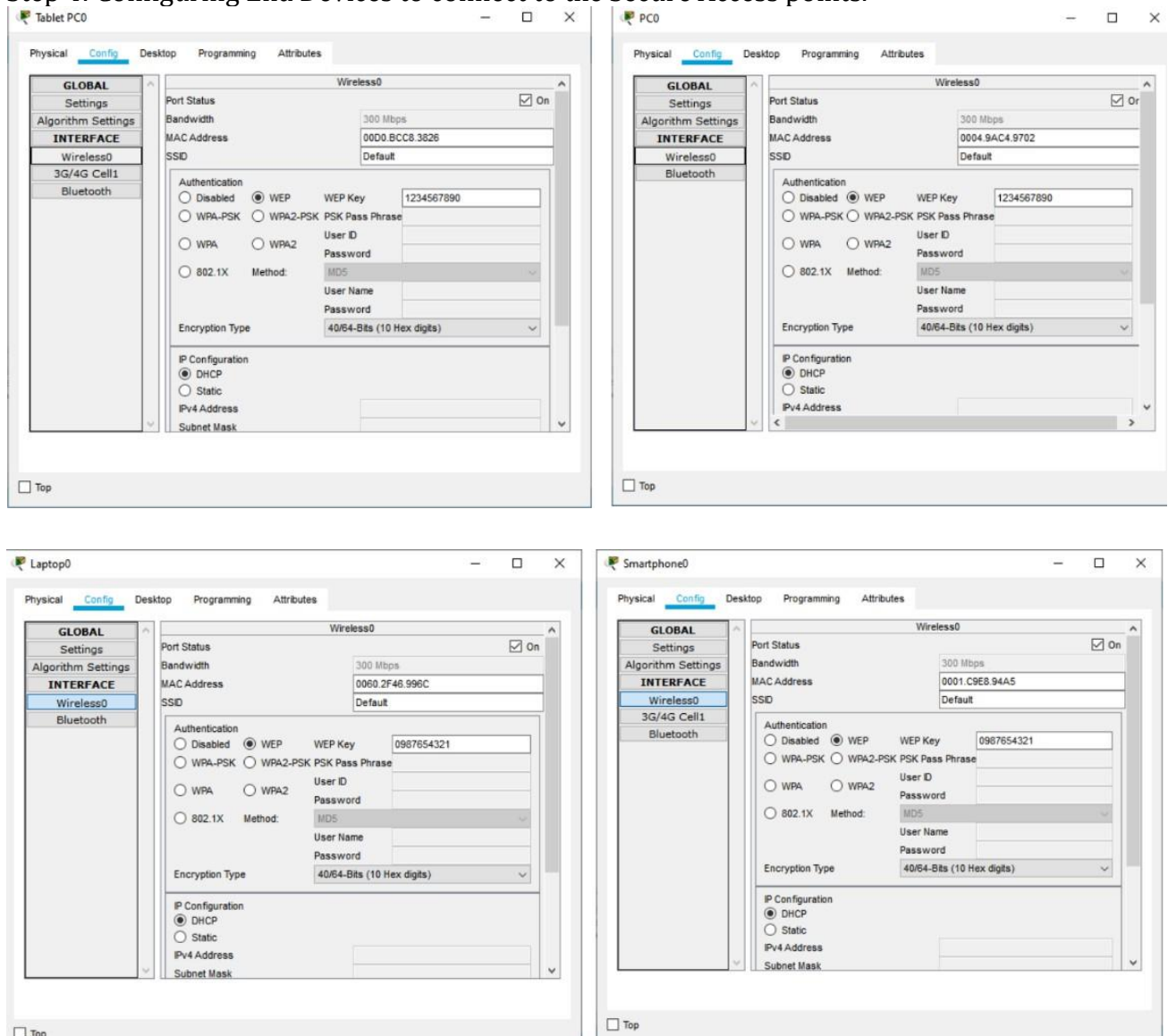
At the bottom left, there is a 'Top' button.

The screenshot shows the configuration window for Access Point1. The 'Config' tab is selected. On the left, under 'INTERFACE', 'Port 1' is highlighted. The main configuration area for Port 1 shows the following settings:

- Port Status: ☒ On
- SSID: Default
- 2.4 GHz Channel: 6
- Coverage Range (meters): 250.00
- Authentication: ☒ WEP (Selected), ☐ Disabled, ☐ WPA-PSK, ☐ WPA2-PSK
- WEP Key: 0987654321
- User ID: (empty field)
- Password: (empty field)
- Encryption Type: 40/64-Bits (10 Hex digits)

At the bottom left, there is a 'Top' button.

Step 4: Configuring End Devices to connect to the Secure Access points.



Step 5: Configuring IP addresses on Router and switching it on.

The screenshot shows the configuration window for Router0, specifically the 'Config' tab for the 'FastEthernet0/0' interface. The left sidebar shows the configuration hierarchy: GLOBAL, Settings, Algorithm Settings, ROUTING, Static, RIP, and INTERFACE. Under the INTERFACE section, 'FastEthernet0/0' is selected. The main configuration area for 'FastEthernet0/0' includes: Port Status (checked 'On'), Bandwidth (radio buttons for 100 Mbps and 10 Mbps, with 'Auto' checked), Duplex (radio buttons for Half Duplex and Full Duplex, with 'Auto' checked), MAC Address (0009.7C58.4098), IP Configuration (IPv4 Address: 192.168.1.10, Subnet Mask: 255.255.255.0), and Tx Ring Limit (10). Below the configuration area, the 'Equivalent IOS Commands' section shows the following commands:

```
$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)#interface FastEthernet0/0
Router(config-if)#
```

The screenshot shows the configuration window for Router0, specifically the 'Config' tab for the 'FastEthernet1/0' interface. The left sidebar shows the configuration hierarchy: GLOBAL, Settings, Algorithm Settings, ROUTING, Static, RIP, and INTERFACE. Under the INTERFACE section, 'FastEthernet1/0' is selected. The main configuration area for 'FastEthernet1/0' includes: Port Status (checked 'On'), Bandwidth (radio buttons for 100 Mbps and 10 Mbps, with 'Auto' checked), Duplex (radio buttons for Half Duplex and Full Duplex, with 'Auto' checked), MAC Address (0007.ECA4.9970), IP Configuration (IPv4 Address: 192.168.2.10, Subnet Mask: 255.255.255.0), and Tx Ring Limit (10). Below the configuration area, the 'Equivalent IOS Commands' section shows the following commands:

```
changed state to up
Router(config-if)#exit
Router(config)#interface FastEthernet0/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface FastEthernet1/0
Router(config-if)#
```

Step 6: Configuring IP addresses on End Devices connected to Access Points.

Tablet PC0

Physical Config **Desktop** Programming Attributes

IP Configuration X

Interface Wireless0

IP Configuration

☐ DHCP ☒ Static

IPv4 Address 192.168.1.1

Subnet Mask 255.255.255.0

Default Gateway 192.168.1.10

DNS Server 0.0.0.0

IPv6 Configuration

☐ Automatic ☒ Static

IPv6 Address /

Link Local Address FE80::2D0:BCFF:FE08:3826

Default Gateway

DNS Server

☐ Top

PC0

Physical Config **Desktop** Programming Attributes

IP Configuration X

Interface Wireless0

IP Configuration

☐ DHCP ☒ Static

IPv4 Address 192.168.1.2

Subnet Mask 255.255.255.0

Default Gateway 192.168.1.10

DNS Server 0.0.0.0

IPv6 Configuration

☐ Automatic ☒ Static

IPv6 Address /

Link Local Address FE80::204:9AFF:FE04:9702

Default Gateway

DNS Server

☐ Top

Laptop0

Physical Config **Desktop** Programming Attributes

IP Configuration X

Interface Wireless0

IP Configuration

☐ DHCP ☒ Static

IPv4 Address 192.168.2.1

Subnet Mask 255.255.255.0

Default Gateway 192.168.2.10

DNS Server 0.0.0.0

IPv6 Configuration

☐ Automatic ☒ Static

IPv6 Address /

Link Local Address FE80::260:2FFF:FE46:996C

Default Gateway

DNS Server

☐ Top

Smartphone0

Physical Config **Desktop** Programming Attributes

IP Configuration X

Interface Wireless0

IP Configuration

☐ DHCP ☒ Static

IPv4 Address 192.168.2.2

Subnet Mask 255.255.255.0

Default Gateway 192.168.2.10

DNS Server 0.0.0.0

IPv6 Configuration

☐ Automatic ☒ Static

IPv6 Address /

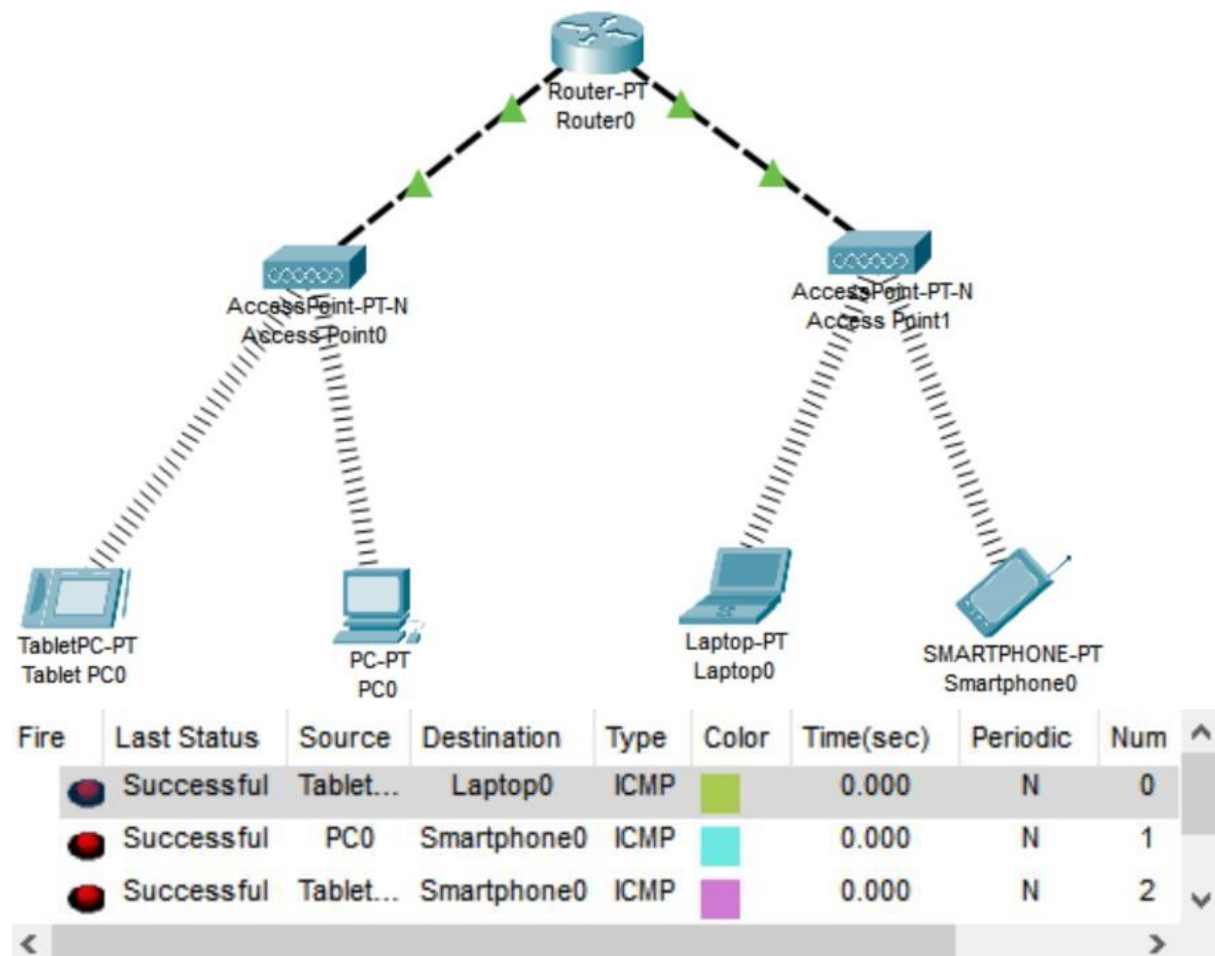
Link Local Address FE80::201:C9FF:FE08:94A5

Default Gateway

DNS Server

☐ Top

Step 7: Checking if all the end devices across the wireless network can communicate with each other.



All the end devices in the network can wirelessly communicate with each other.