CS 361 Computer Networks Lab
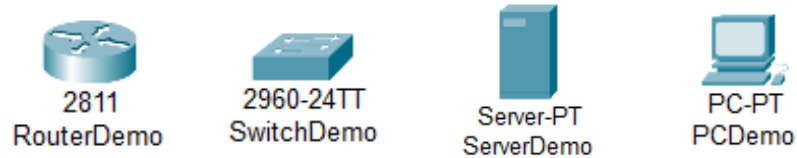
Assignment 8

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Date – 16/11/2023

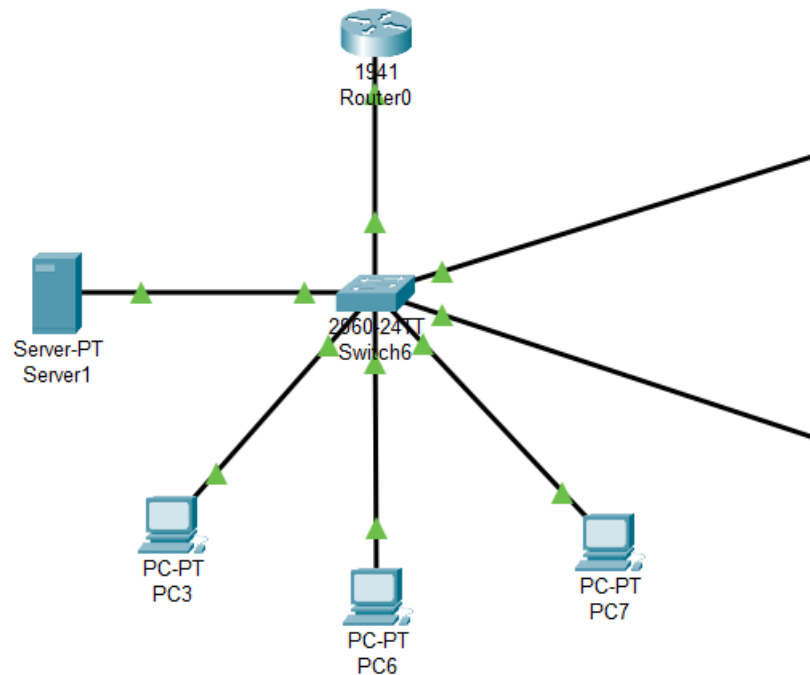# Questions:

1. Create a network between 3 pcs, Switch, Router and server.

Components used:

2811
RouterDemo

2960-24TT
SwitchDemo

Server-PT
ServerDemo

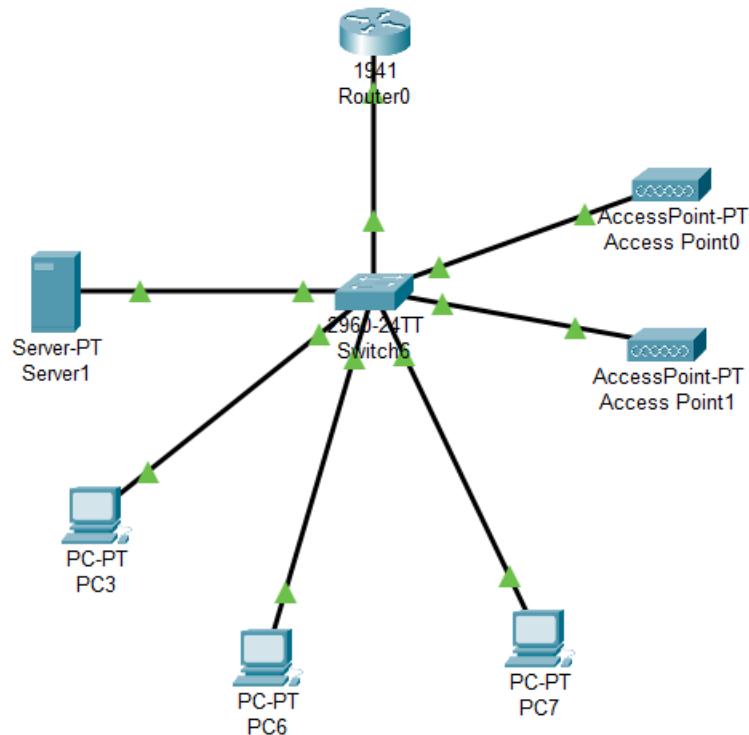PC-PT
PCDemo

Network Diagram:

The PCs, server and the router are connected to the Fast Ethernet ports of the switch. The green symbol shows connection has been established properly.

2. Take two wireless access points and connect them to the switch.

Components used:

AccessPoint-PT
Access Point Demo

Network Diagram:

1941
Router0

AccessPoint-PT
Access Point0

Server-PT
Server1

2960-24TT
Switch6

AccessPoint-PT
Access Point1
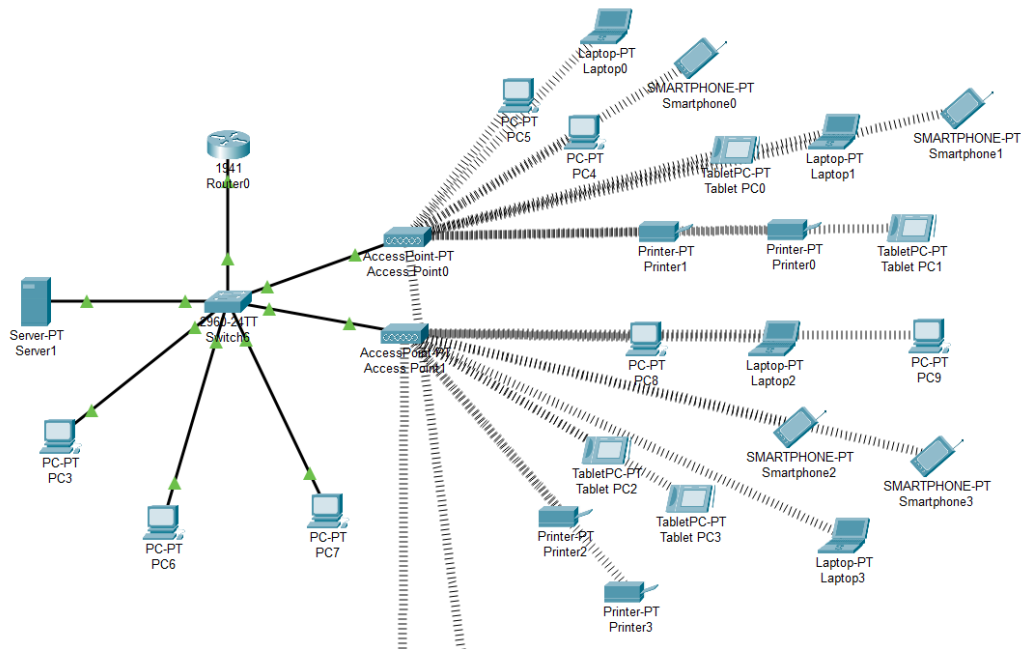
PC-PT
PC3

PC-PT
PC6

PC-PT
PC7

The Access Point has been connected to the switch. An access point (AP) is a networking device that allows wireless devices to connect to a wired network using Wi-Fi. Access points play a crucial role in wireless networking by providing a bridge between wired and wireless networks.

3. Connect at least 10 wireless devices (wireless desktop, laptop, printers, wireless mobile, tabs & etc..) to each access point.

Components used:

PC-PT
PCDemo

Laptop-PT
LaptopDemo

TabletPC-PT
Tablet Demo

Printer-PT
Printer Demo

SMARTPHONE-PT
Smartphone Demo

Network Diagram:

A total of 10 devices has been connected to each of the access point as shown in the diagram. However, before this, the access points need to be configured, for other end points in the network to recognize and connect to it.

SSID and Pass phrases need to be configured for both the Access Points, and changes are to be made in Port1.

Access Point0 — □ ✕

Physical   Config   Attributes

GLOBAL
Settings
INTERFACE
Port 0
Port 1

Port 1

Port Status   ☑ On
SSID   Sam-Lab8-Check
2.4 GHz Channel   6
Coverage Range (meters)   140.00

Authentication
○ Disabled   ○ WEP   WEP Key
○ WPA-PSK   ● WPA2-PSK   PSK Pass Phrase   Sam-Lab8-Check-Pass
                                    User ID
                                    Password
Encryption Type   AES

Access Point1 — □ ✕

Physical   Config   Attributes

GLOBAL
Settings
INTERFACE
Port 0
Port 1

Port 1

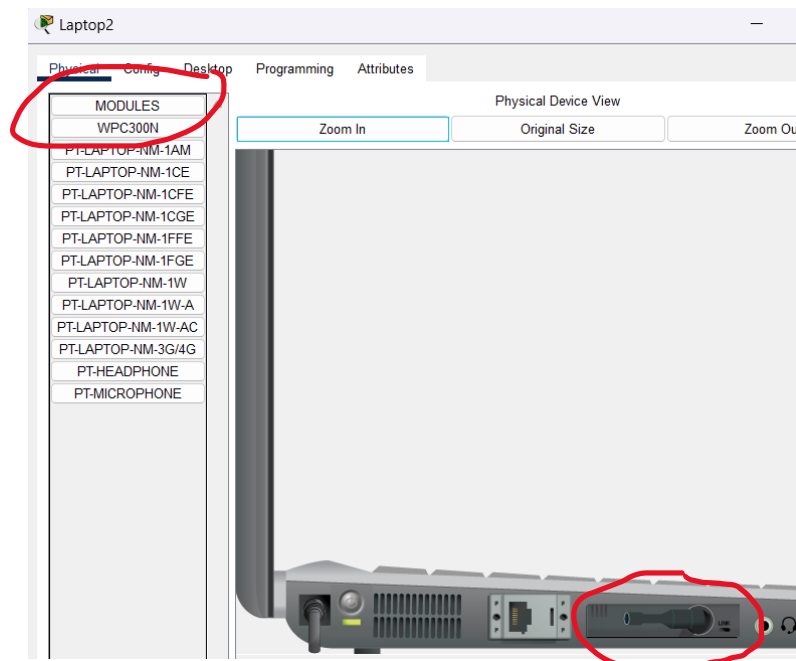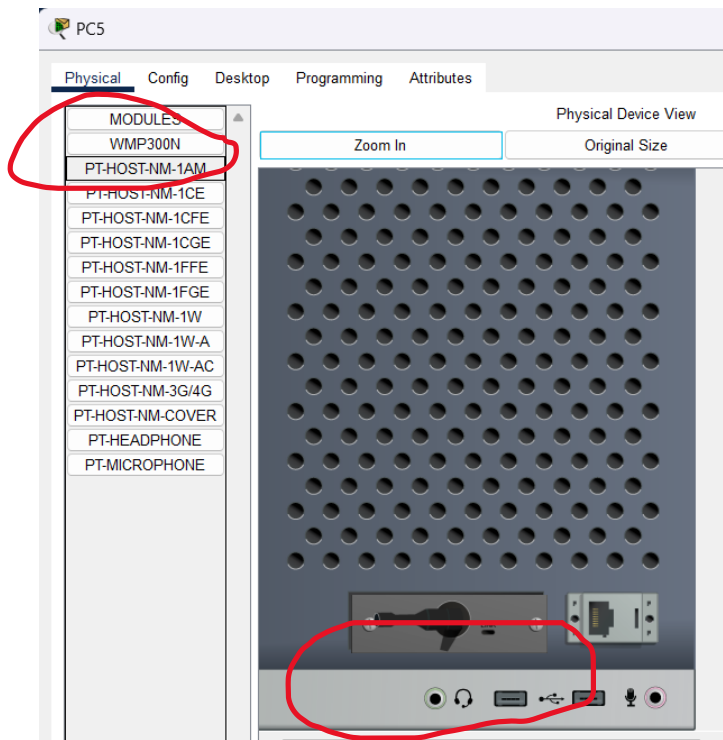Port Status   ☑ On
SSID   Sam-Lab8-Check01
2.4 GHz Channel   6
Coverage Range (meters)   140.00

Authentication
○ Disabled   ○ WEP   WEP Key
○ WPA-PSK   ● WPA2-PSK   PSK Pass Phrase   Sam-Lab8-Check-Pass01
                                    User ID
                                    Password
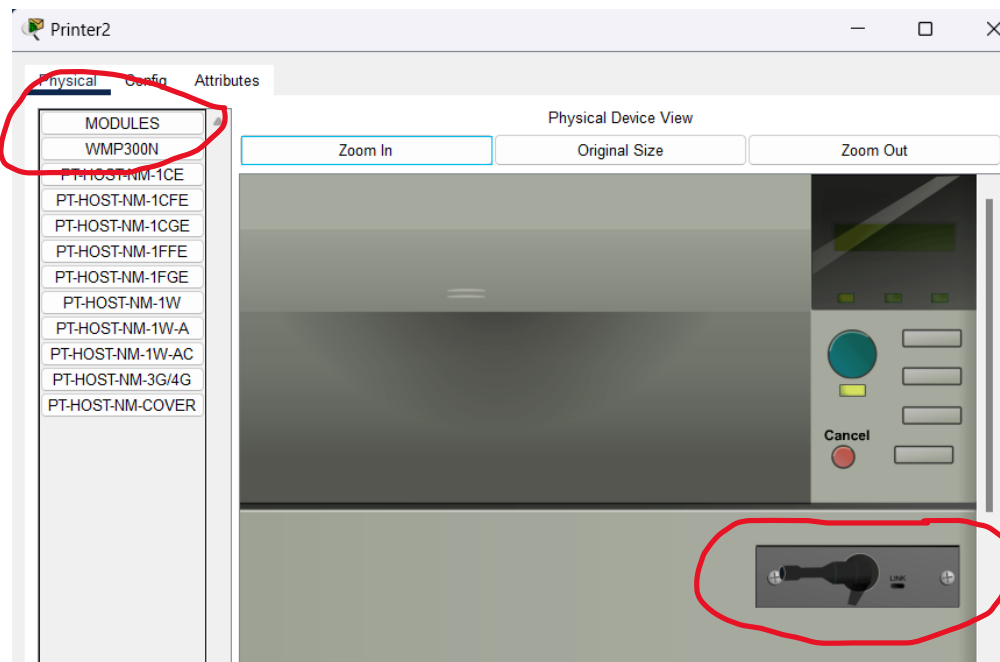Encryption Type   AES

As a next step, PCs need to undergo some changes as well, so that they can connect to the wireless network, the first step is to attach a module that will help in allowing wireless connection. This is achieved using the Linksys – WMP300N module.

The Linksys WMP300N is a wireless network adapter designed for desktop computers, enabling them to connect to Wi-Fi networks. Utilizing the 802.11n standard, it offers high-speed wireless connectivity on both 2.4 GHz and 5 GHz bands. The adapter's configuration utility allows users to manage settings such as wireless security and connection profiles,
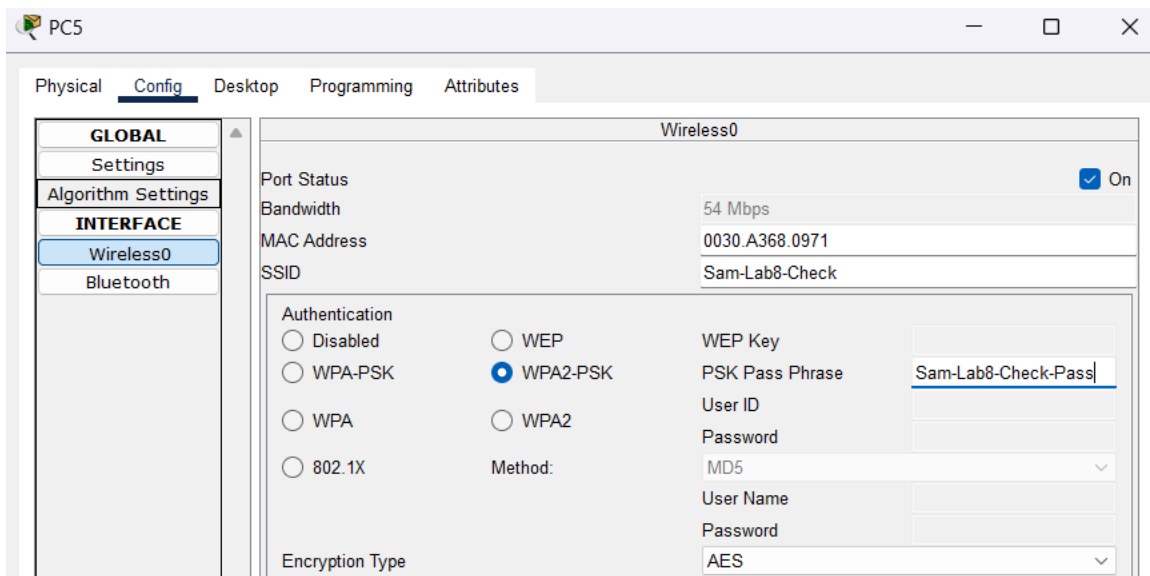
providing a reliable and flexible solution for adding Wi-Fi capabilities to desktop computers.

The below diagram shows the Linksys WMP300N adapter connected to the PCs, Laptops, and printers. Smartphones don't need manual addition of the same.
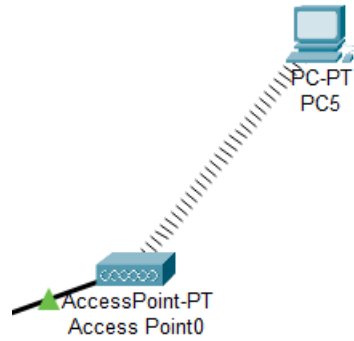
Following this, the devices are ready to be connected to the wireless network. Now the SSID of the access point and its respective pass phrase is to be added to the device, to enable connection.

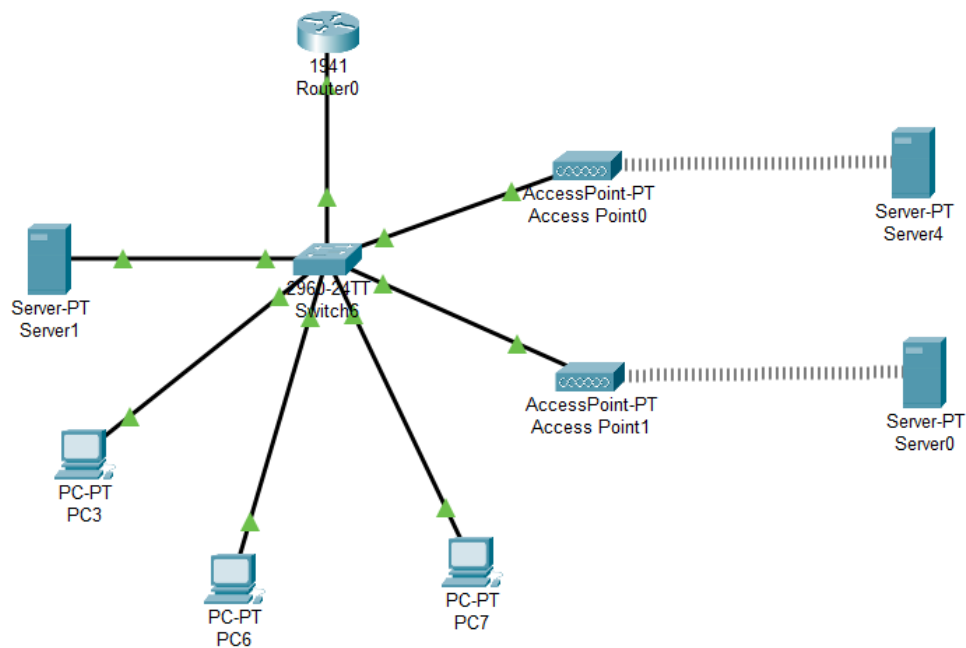Successful connection is shown by dashed lines from the access points to the device.

PC-PT
PC5

AccessPoint-PT
Access Point0

4. Connect a wireless server to access point 0 & access point 1.
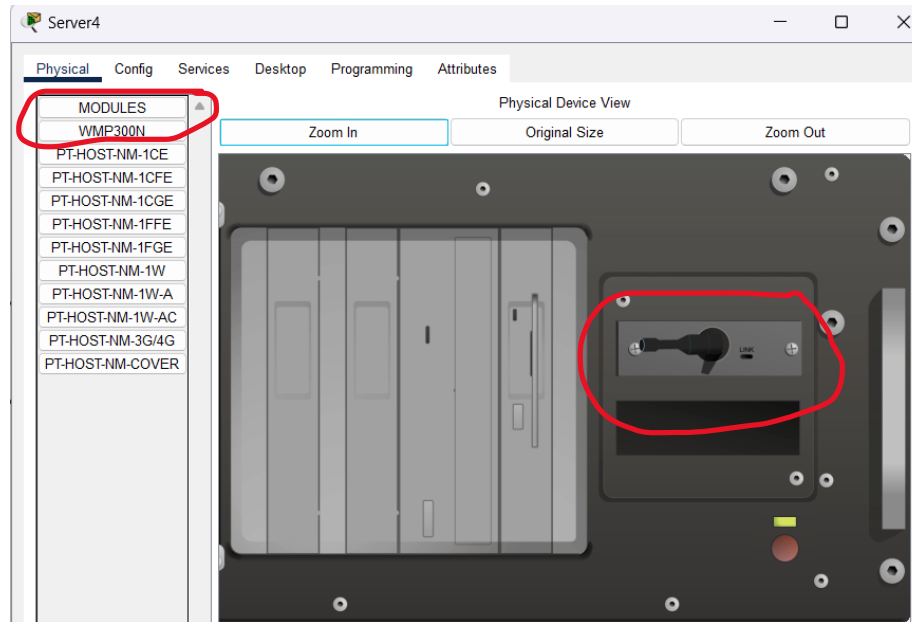
Components used:
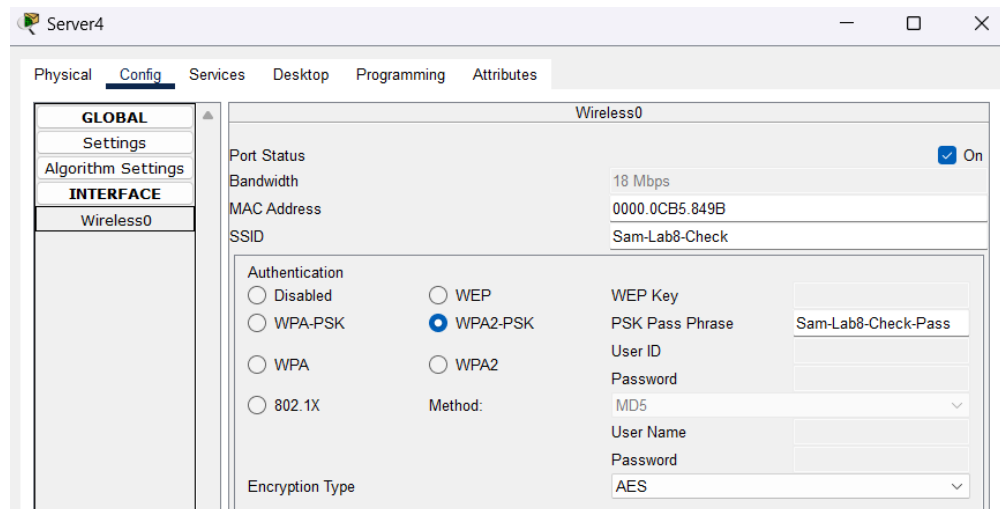

Server-PT
ServerDemo

Network Diagram:

The process is roughly the same for the connection of servers to the access point as well, with intitally the Linksys WMP300N network adapter attached to the servers as a module, which enables wireless connection, and then adding the SSID of the access point to which it needs to be connected and its respective pass phrase.

The Linksys WMP300N Module added to the server.

Next the SSID and pass phrase of the access point to which it needs to be connected is added to the server.

Successful connection is shown by dashed lines from the access points to the server.