WLAN Network

WLAN stands for Wireless Local Area Network. WLAN is a local area network that uses radio communication to provide mobility to the network users while maintaining the connectivity to the wired network.

A wireless network allows devices to stay connected to the network but roam untethered to any wires. Access points amplify Wi-Fi signals, so a device can be far from a router but still be connected to the network. When you connect to a Wi-Fi hotspot at a cafe, a hotel, an airport lounge, or another public place, you're connecting to that business's wireless network. Previously it was thought that wired networks were faster and more secure than wireless networks. But continual enhancements to wireless network technology such as the Wi-Fi 6 networking standard have eroded speed and security differences between wired and wireless networks.

What are the benefits of a Wi-Fi wireless network?

Businesses can experience many benefits from a Cisco wireless network, including:

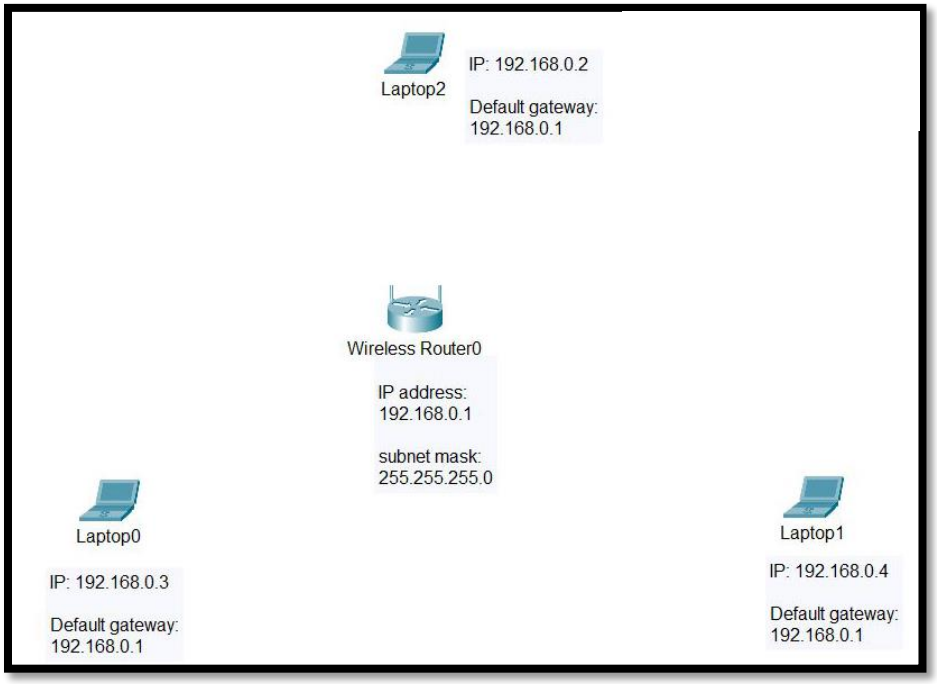
1. Convenience
2. Mobility
3. Productivity
4. Easy setup
5. Expandability
6. Security
7. Reduced cost

Steps to Configure WLAN in Cisco Packet Tracer:

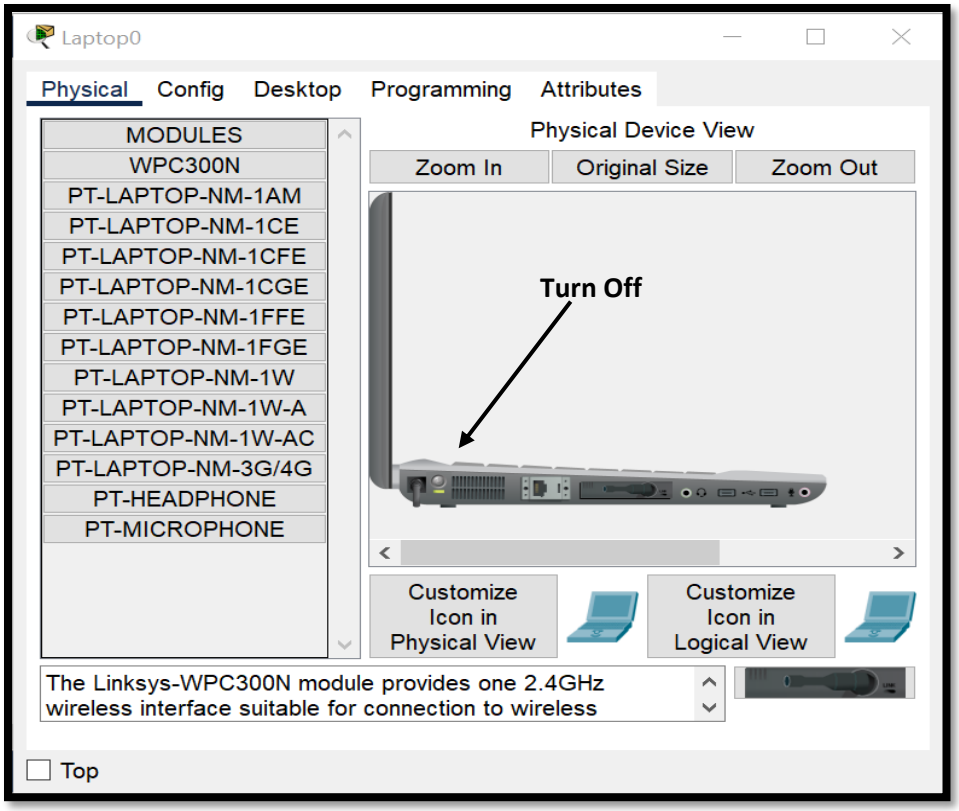
Step1: we need these devices to set up the network topology as shown in the table below:

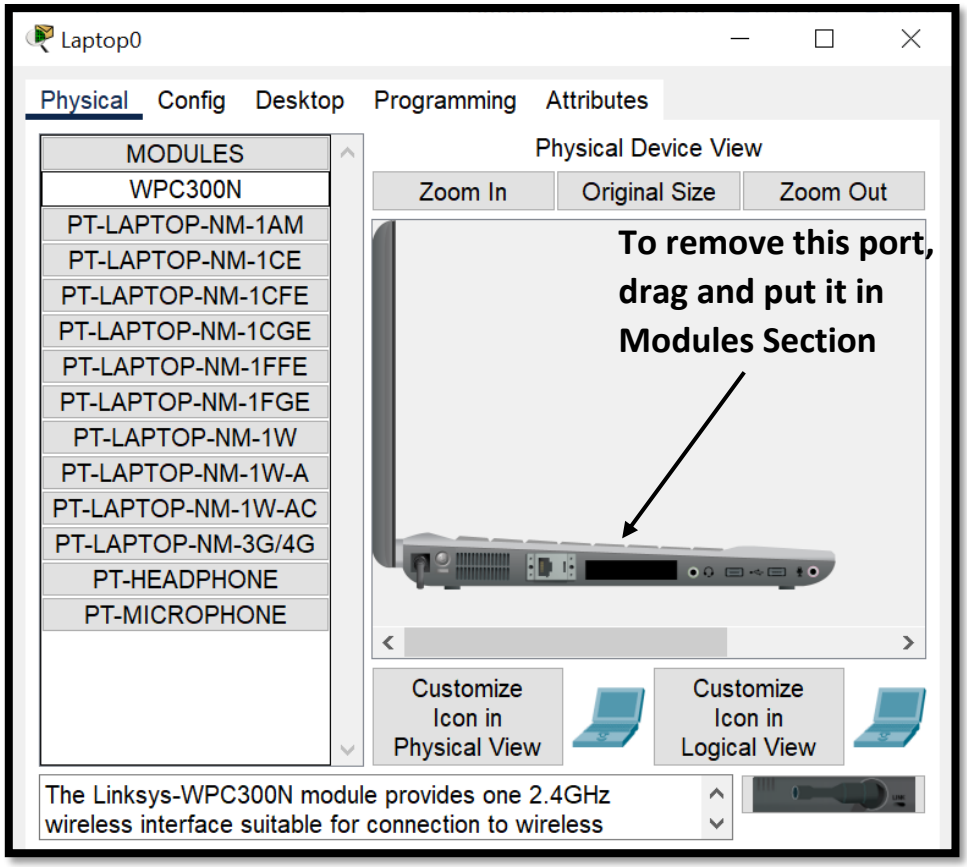
S.No	Device	Model Name (as given in cisco packet tracer)	quantity
1.	Router	WRT300N	1
2.	Laptop	laptop	3

By using these devices we'll have to create a network like shown in the representation:



Step 2: Configuring laptops to make them wireless. First, click on the laptop0 and turn off its power to change the ports basically we are going to replace the wired port with the wireless port which is **WPC300N.**


Laptop0
Physical
Config
Desktop
Programming
Attributes
MODULES
WPC300N
PT-LAPTOP-NM-1AM
PT-LAPTOP-NM-1CE
PT-LAPTOP-NM-1CFE
PT-LAPTOP-NM-1CGE
PT-LAPTOP-NM-1FFE
PT-LAPTOP-NM-1FGE
PT-LAPTOP-NM-1W
PT-LAPTOP-NM-1W-A
PT-LAPTOP-NM-1W-AC
PT-LAPTOP-NM-3G/4G
PT-HEADPHONE
PT-MICROPHONE
Physical Device View
Zoom In
Original Size
Zoom Out
Turn Off
Customize Icon in Physical View
Customize Icon in Logical View
The Linksys-WPC300N module provides one 2.4GHz wireless interface suitable for connection to wireless
Top


Laptop0
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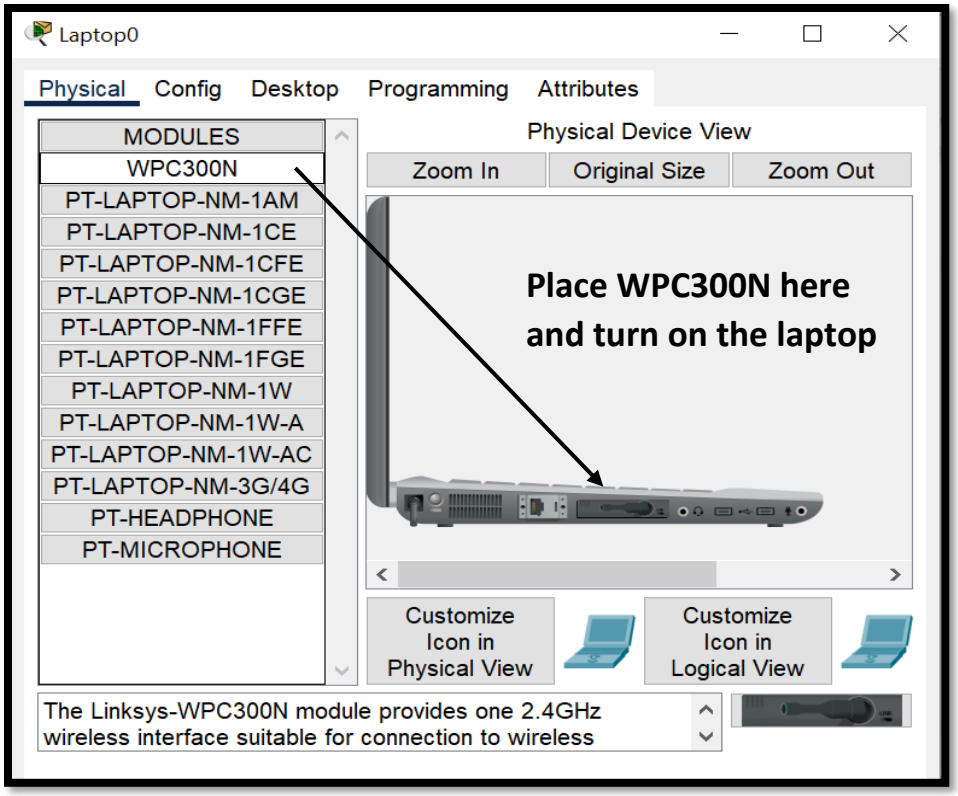
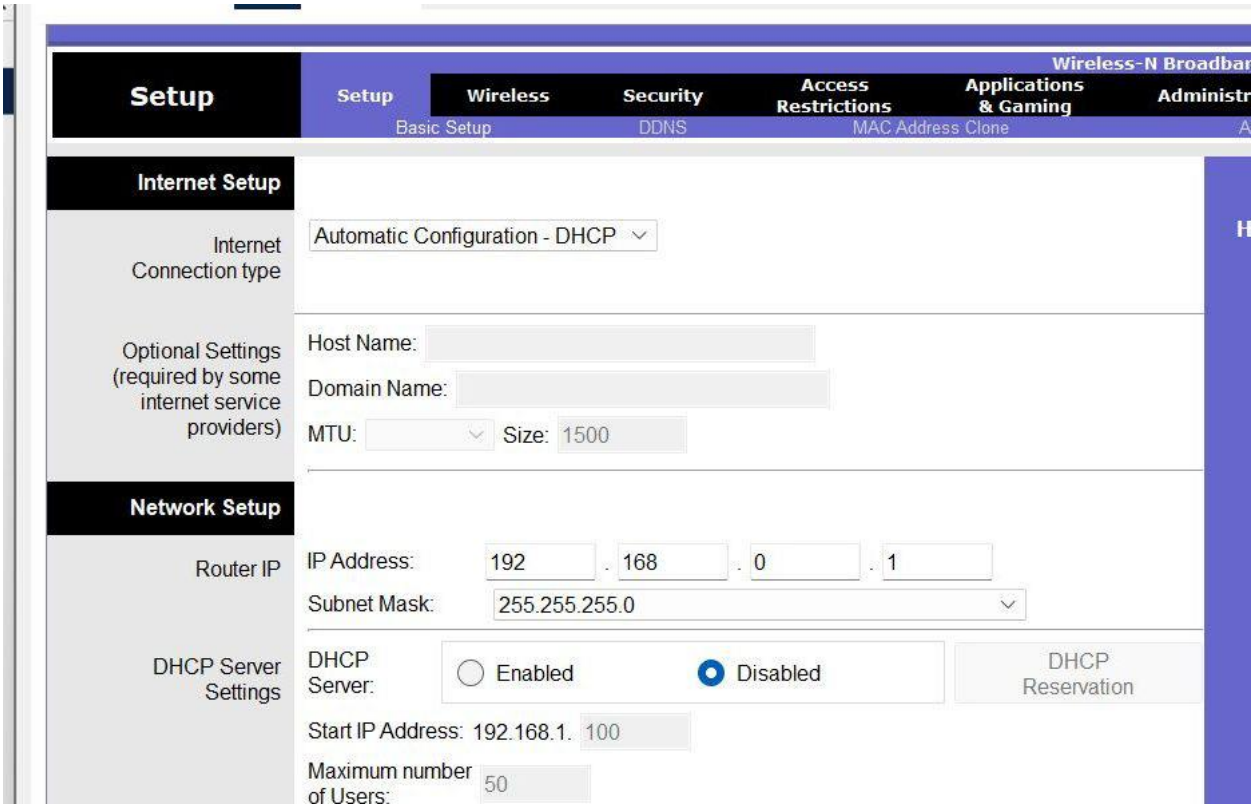
PT-LAPTOP-NM-1FFE
PT-LAPTOP-NM-1FGE
PT-LAPTOP-NM-1W
PT-LAPTOP-NM-1W-A
PT-LAPTOP-NM-1W-AC
PT-LAPTOP-NM-3G/4G
PT-HEADPHONE
PT-MICROPHONE
Physical Device View
Zoom In
Original Size
Zoom Out
To remove this port, drag and put it in Modules Section
Customize Icon in Physical View
Customize Icon in Logical View
The Linksys-WPC300N module provides one 2.4GHz wireless interface suitable for connection to wireless



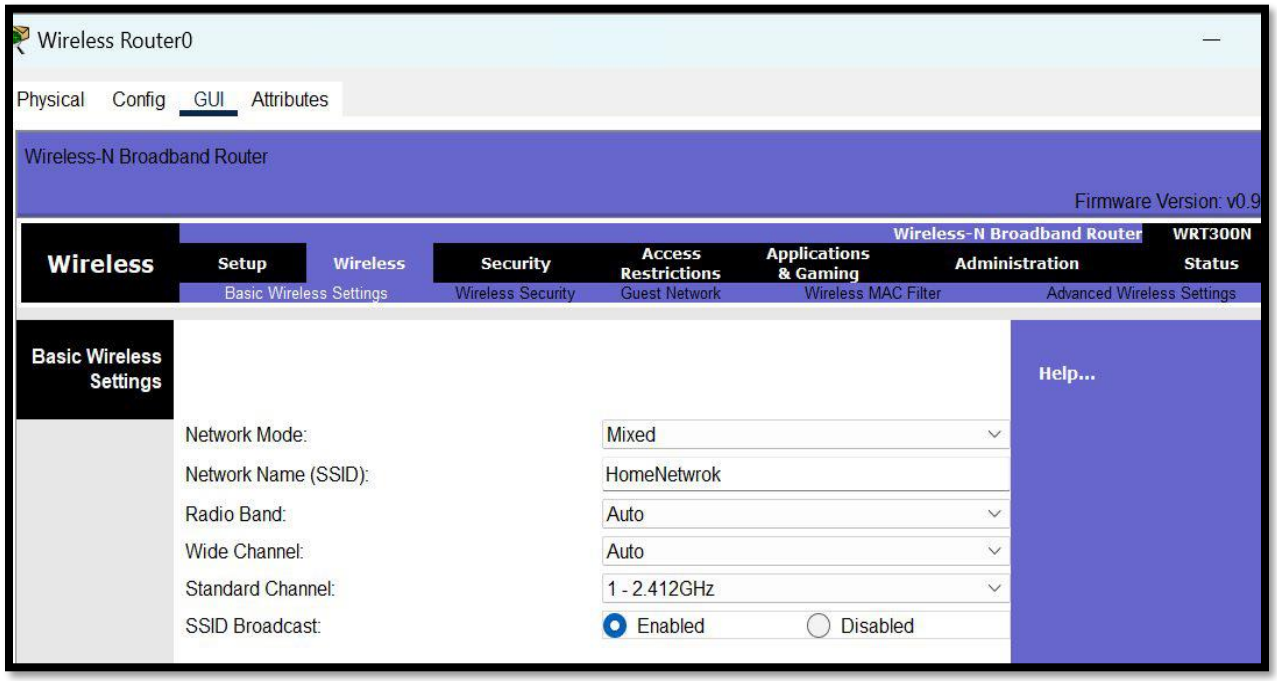
- Replace with **WPC300N** and make sure to turn it ON.
- Repeat the same procedure with **Laptop1** and **Laptop 2.**
- after that, we will assign IP addresses and a *default gateway* to the *laptops*.

Step 3: Configure the Router with an IP address and Generate a Security key.

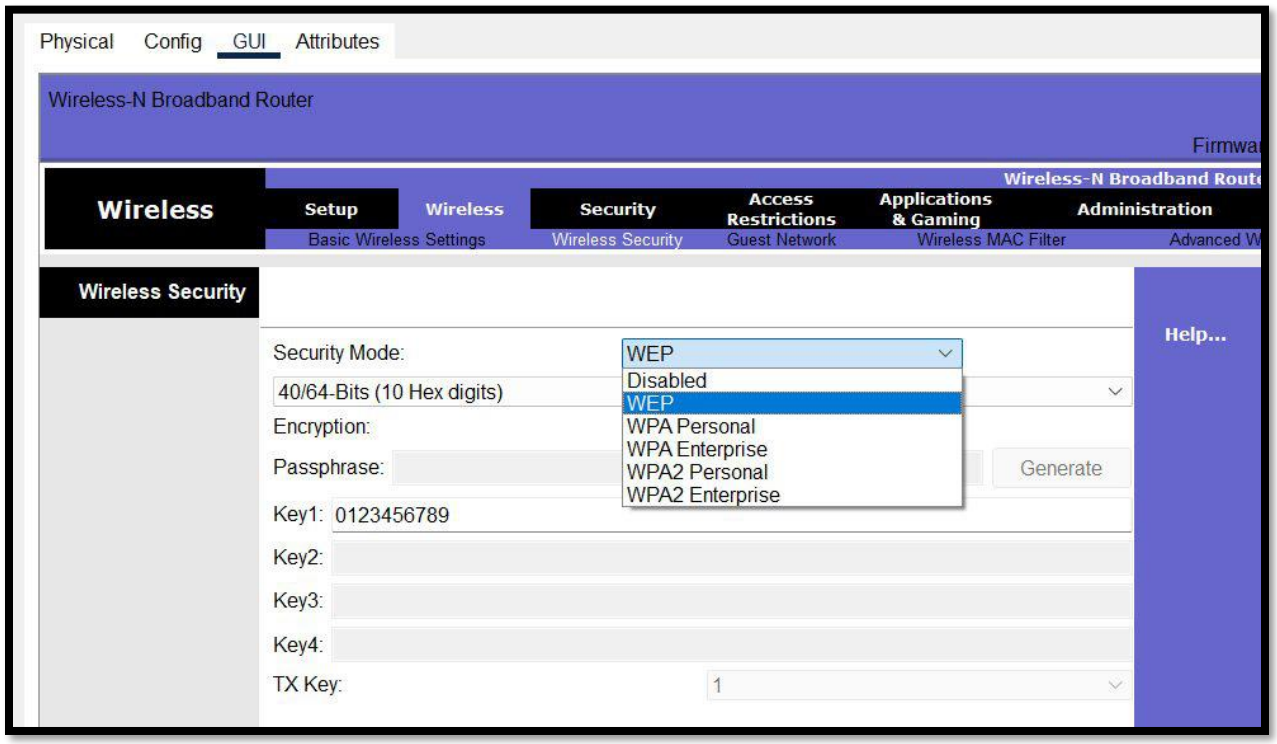
- First, click on Router and Go to GUI.
- Then click on a setup where you will find the IP address assigned to **192.168.0.1** and subnet mask **[255.255.255.0]**.
- Then disable the DHCP server because we have to configure statically.
- Then Save the **settings.**



- Then move to the wireless option.
- set Network Name(SSID) is **HomeNetwork.**
- Save the **settings.**



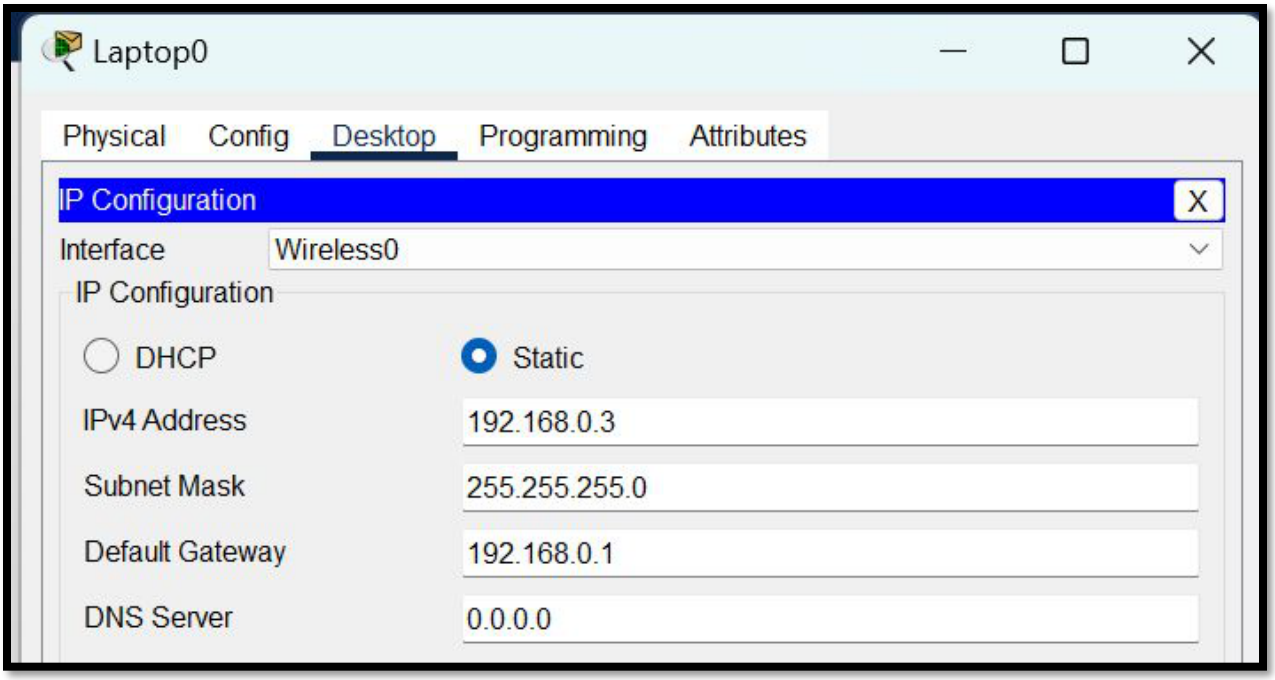
- Then we set the security key.
- Click on **wireless security** and select security mode as **WEP**.
- Then we'll generate KEY by entering 10-digit Hexa-numeric value. eg**: 0123456789.**
- save the settings.



Step 4: Now we will configure the laptops using the IP addressing table given below:

S.NO	Device	IPv4 Address	Subnet Mask	Default Gateway
1.	laptop0	192.168.0.3	255.255.255.0	192.168.0.1
2.	laptop1	192.168.0.4	255.255.255.0	192.168.0.1
3.	laptop2	192.168.0.2	255.255.255.0	192.168.0.1

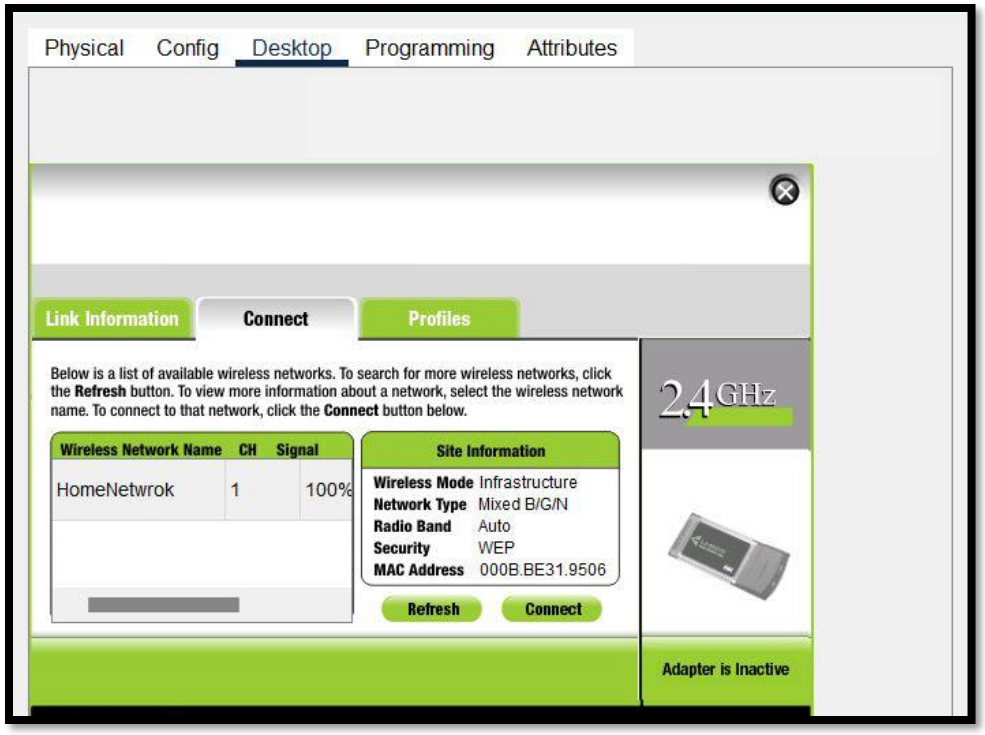
Configure Laptop0: To configure the laptop first set the IP configuration as static then add the IPv4 address and default gateway.



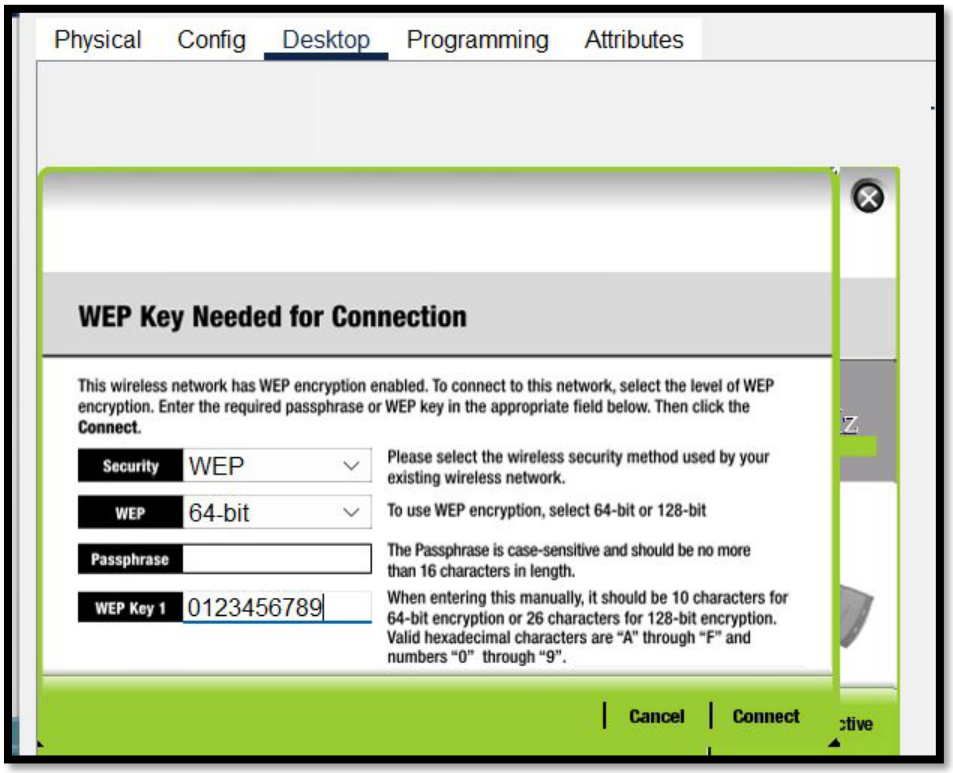
Note: *Repeat the same process with Laptop1, laptop2 and configure both devices by adding IP configuration.*

Step 5: Connect the laptop to the router by entering the security key in the laptop.

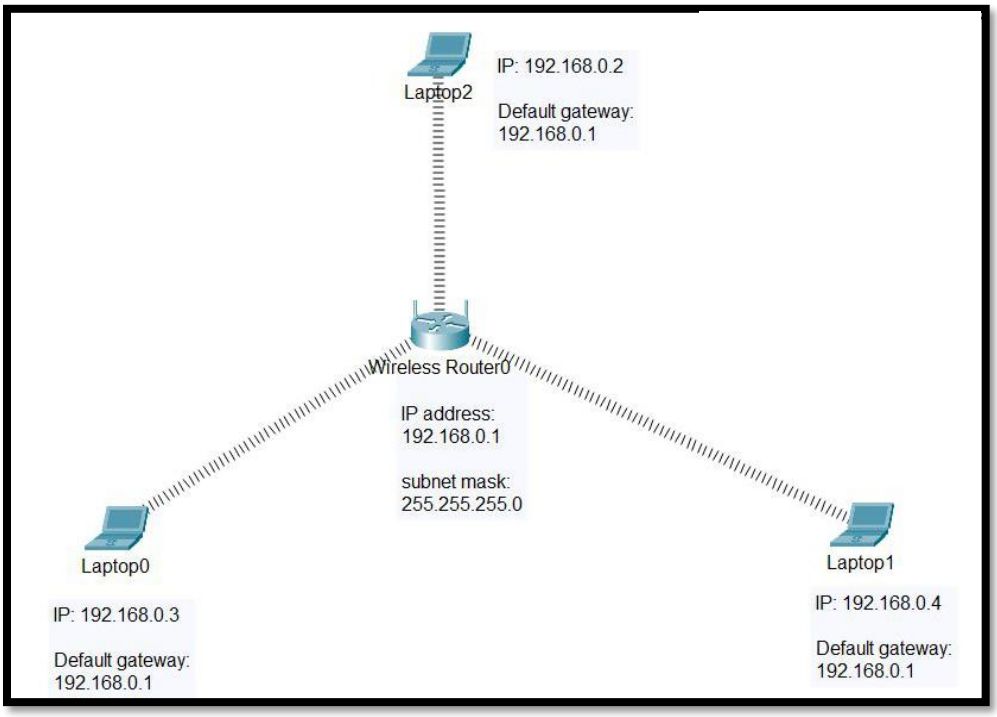
- Click on **laptop0** and go to desktop.
- Click on connect and refresh the network.
- After a few seconds, it will show the name of the network we have assigned.
- Click on HomeNetwork.



- Then enter the security key in WEP key 1 and hit on connect.
- laptop0 will connect with the router.

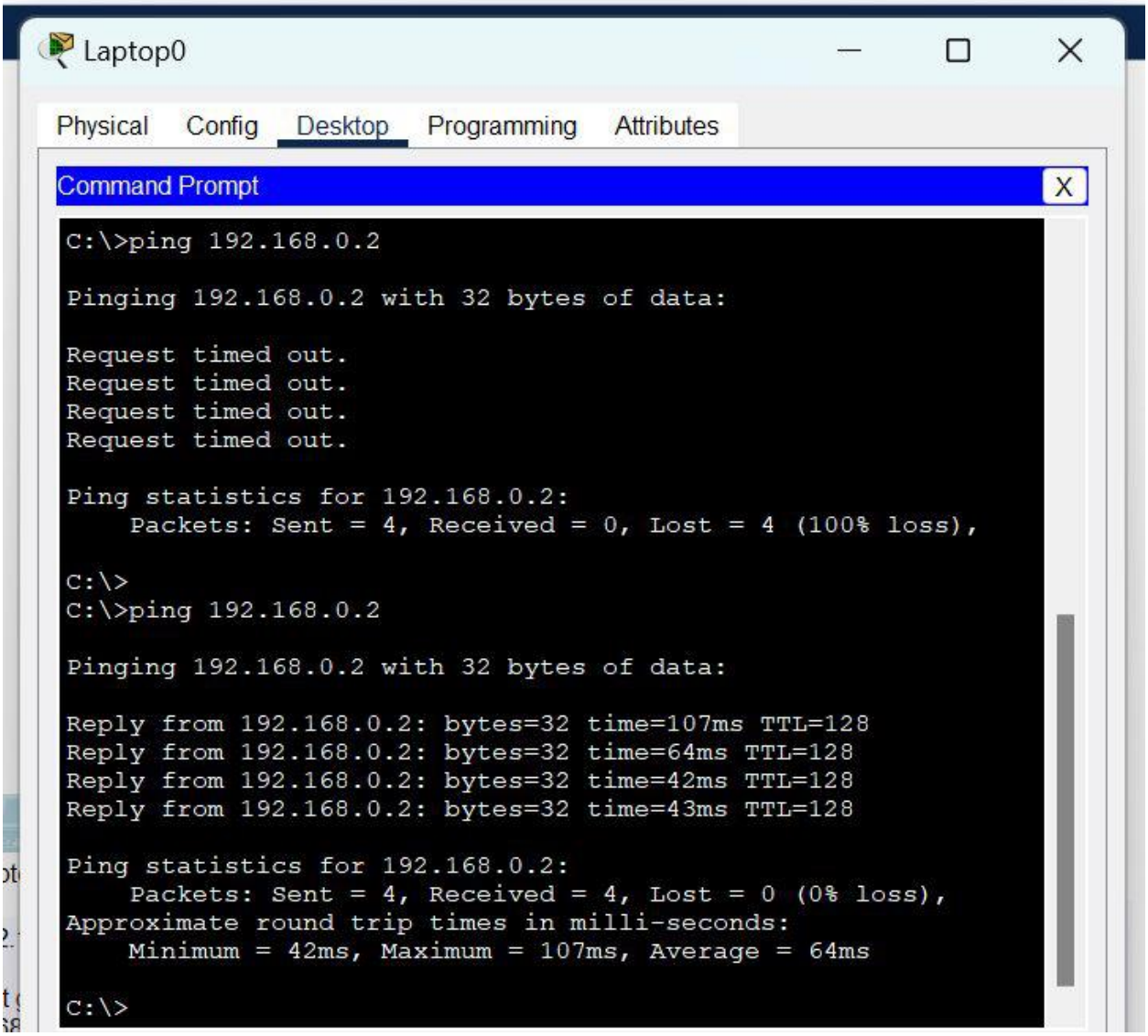


- Repeat the same process with Laptop1 and laptop2 so that they can connect with the router.
- After all of this, all of the hosts will connect with the router



Step 6: Then we'll verify the wireless connection by pinging the IP address of any laptop or by sending and receiving data packets. For example: Go to the command prompt of Laptop0 and type the following command:

command: ping 192.168.0.3


Laptop0
Physical
Config
Desktop
Programming
Attributes
Command Prompt
C:\>ping 192.168.0.2
Pinging 192.168.0.2 with 32 bytes of data:
Request timed out.
Request timed out.
Request timed out.
Request timed out.
Ping statistics for 192.168.0.2:
Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
C:\>
C:\>ping 192.168.0.2
Pinging 192.168.0.2 with 32 bytes of data:
Reply from 192.168.0.2: bytes=32 time=107ms TTL=128
Reply from 192.168.0.2: bytes=32 time=64ms TTL=128
Reply from 192.168.0.2: bytes=32 time=42ms TTL=128
Reply from 192.168.0.2: bytes=32 time=43ms TTL=128
Ping statistics for 192.168.0.2:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 42ms, Maximum = 107ms, Average = 64ms
C:\>