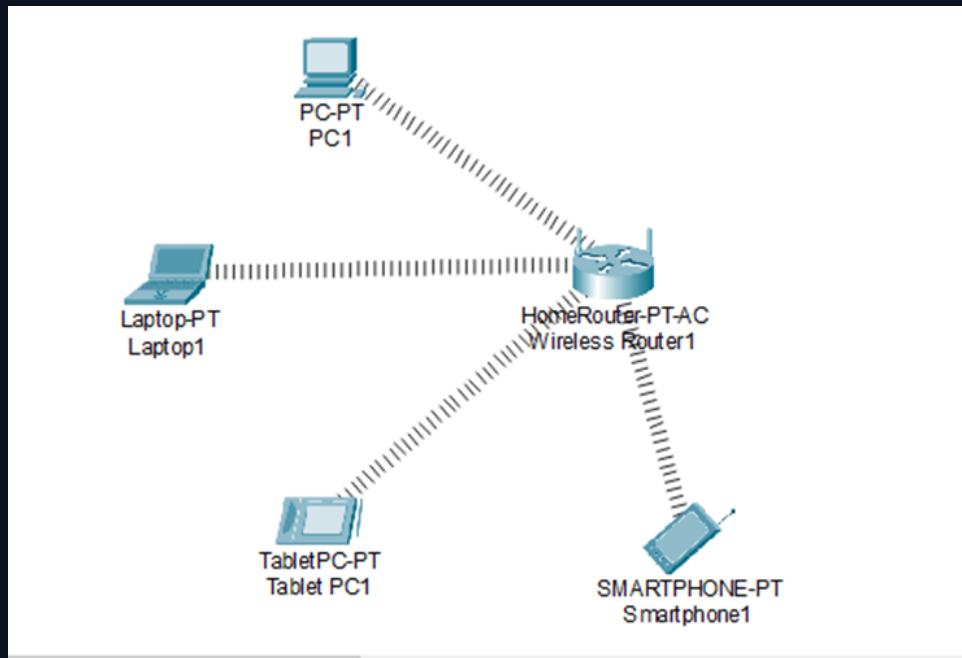




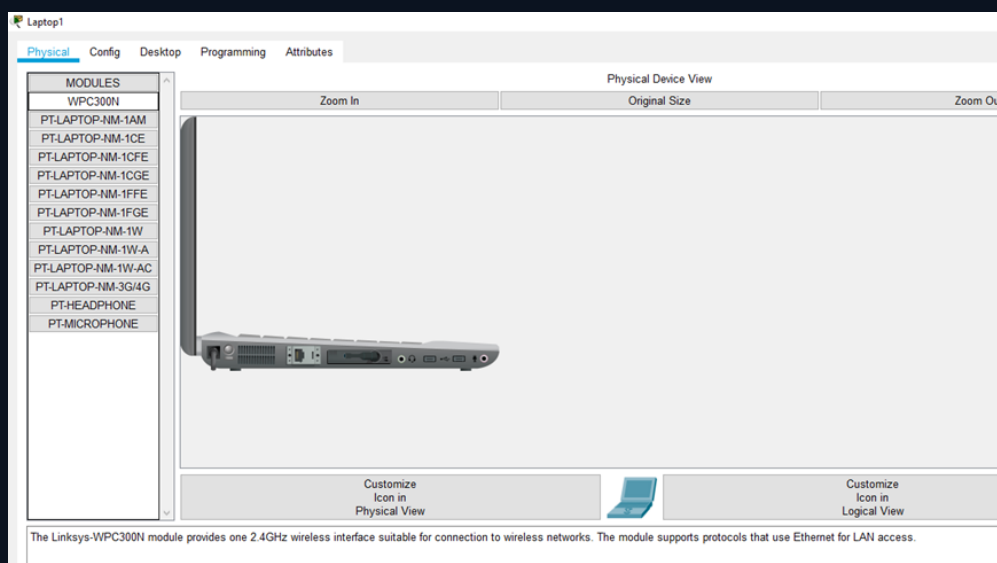
# WIRELESS NETWORK

Created by :  
**Maria Ferrara**

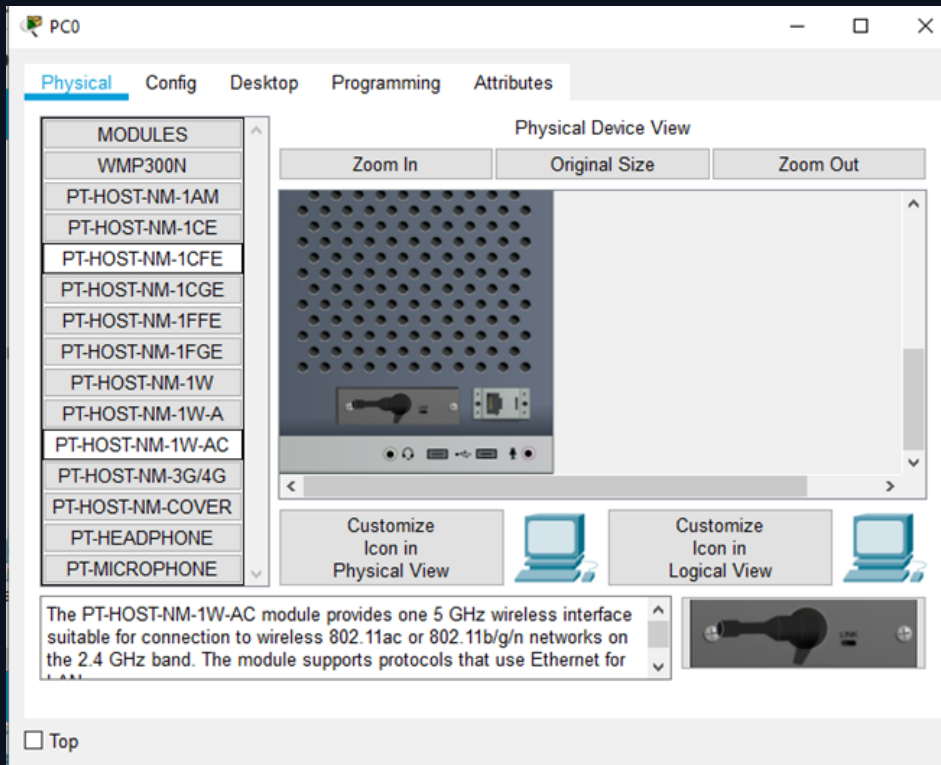
Stage 1 — Devise a list of equipment that will be required to allow wireless technology to be implemented within the local charity.



Stage 2 — Obtain and setup the wireless equipment, describe/log/picture log/vlog the steps to achieve this build

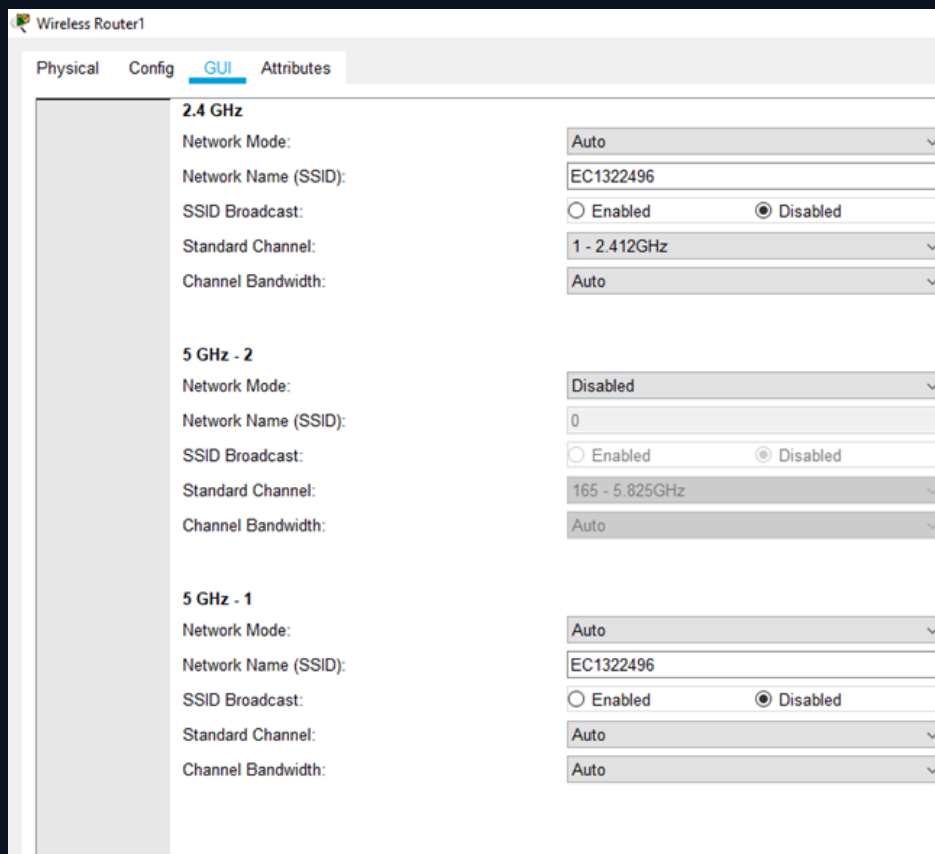


I changed laptop network card to a wireless one.

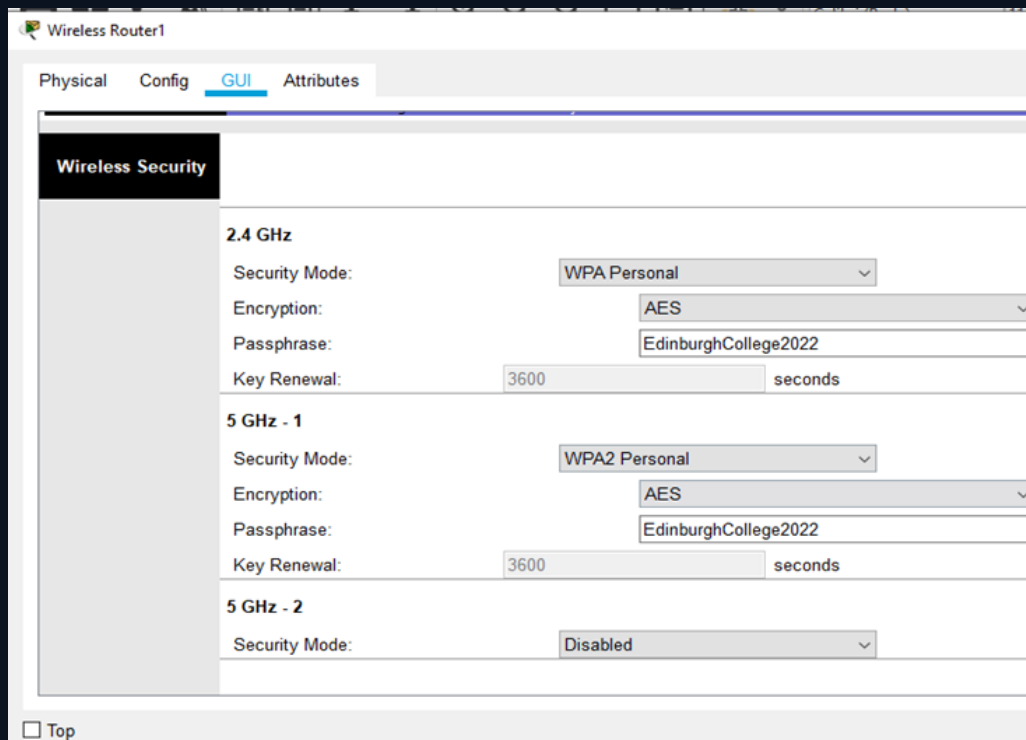


I also changed the network card on pc to a wireless one as well.

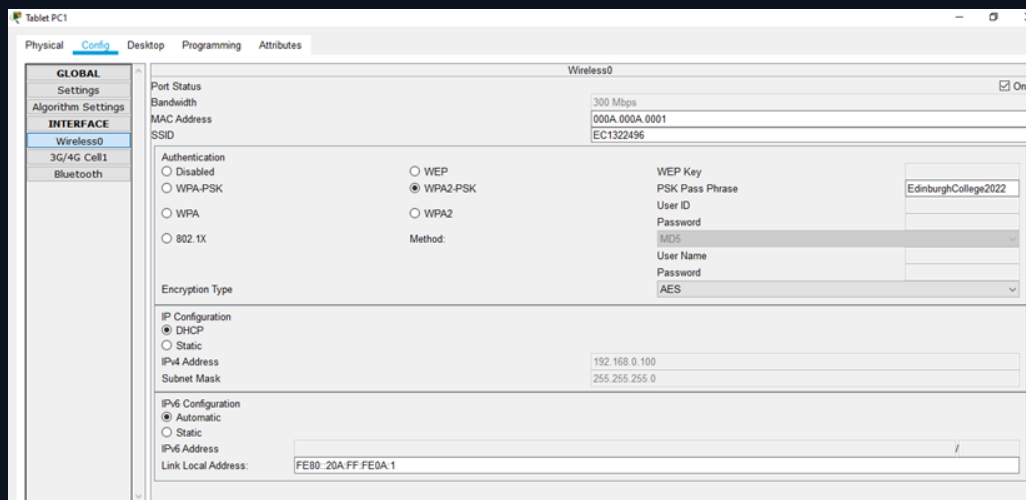
## Stage 3 — Devise and implement a suitable authentication and encryption scheme to allow users to use the wireless network



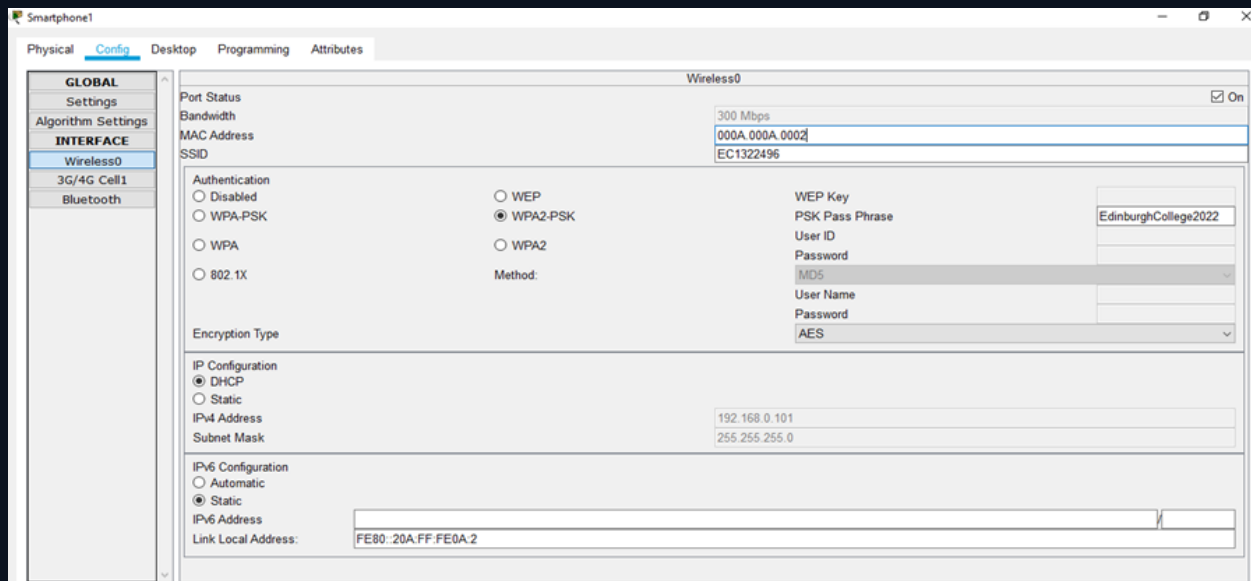
On the router → GUI → Wireless → I added SSID as my EC number → Save settings



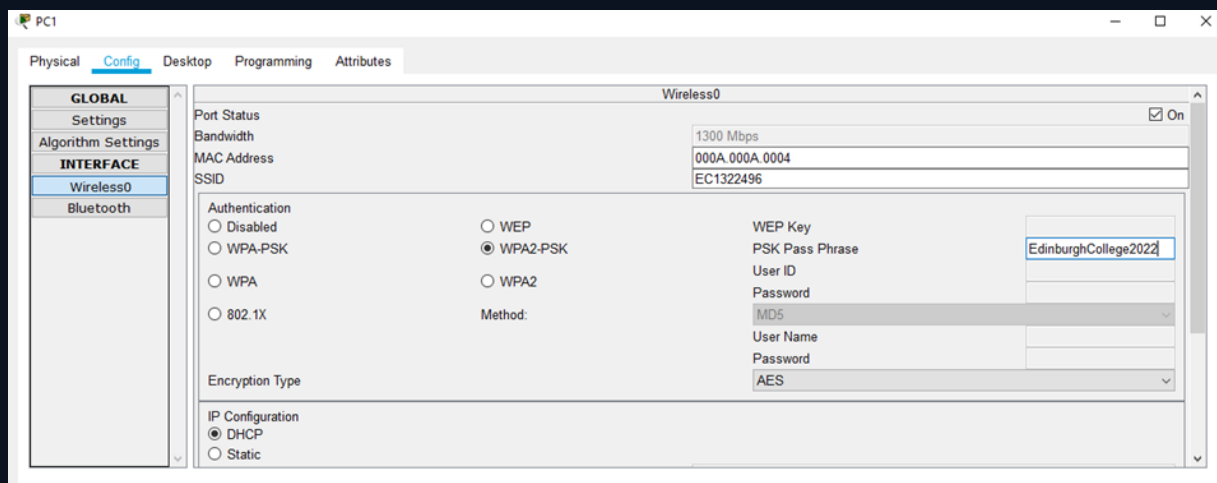
On router -> GUI -> Wireless -> Wireless security -> changed mode to WPA Personal and added Passphrase -> save settings



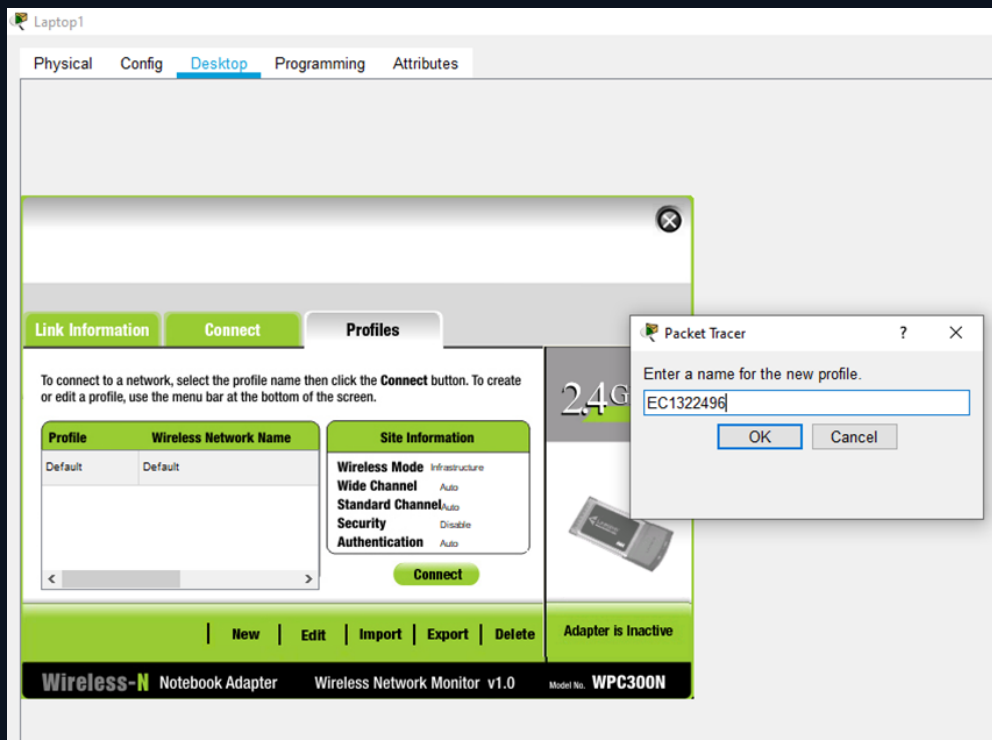
Then I went to Tablet-> config->Wireless0-> I changed MAC address, SSID and selected WPA2-PSK and added passphrase



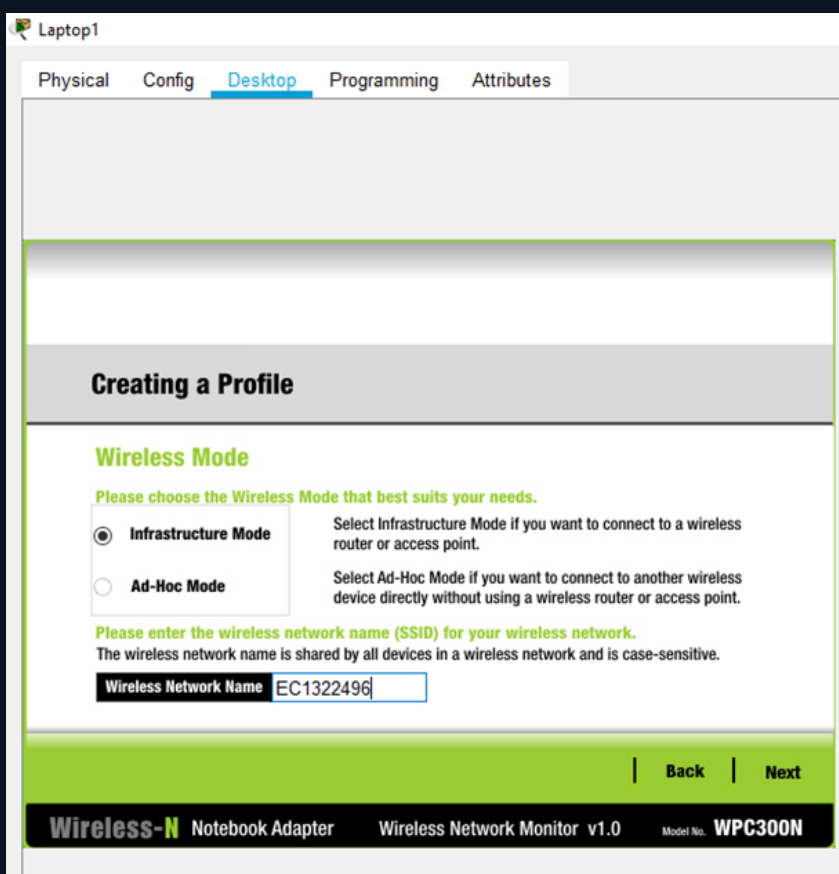
On smartphone -> I repeated the same process -> config->Wireless0-> I changed MAC address, SSID and selected WPA2-PSK and added passphrase



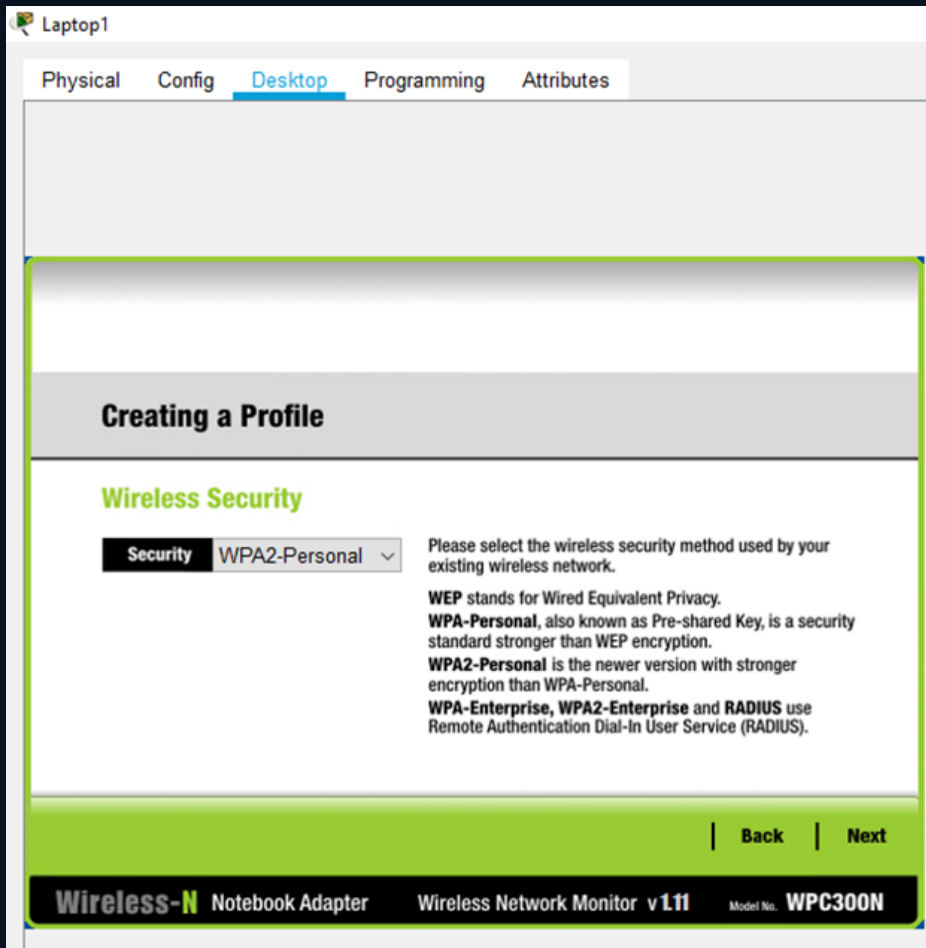
On the PC I also repeated the same steps



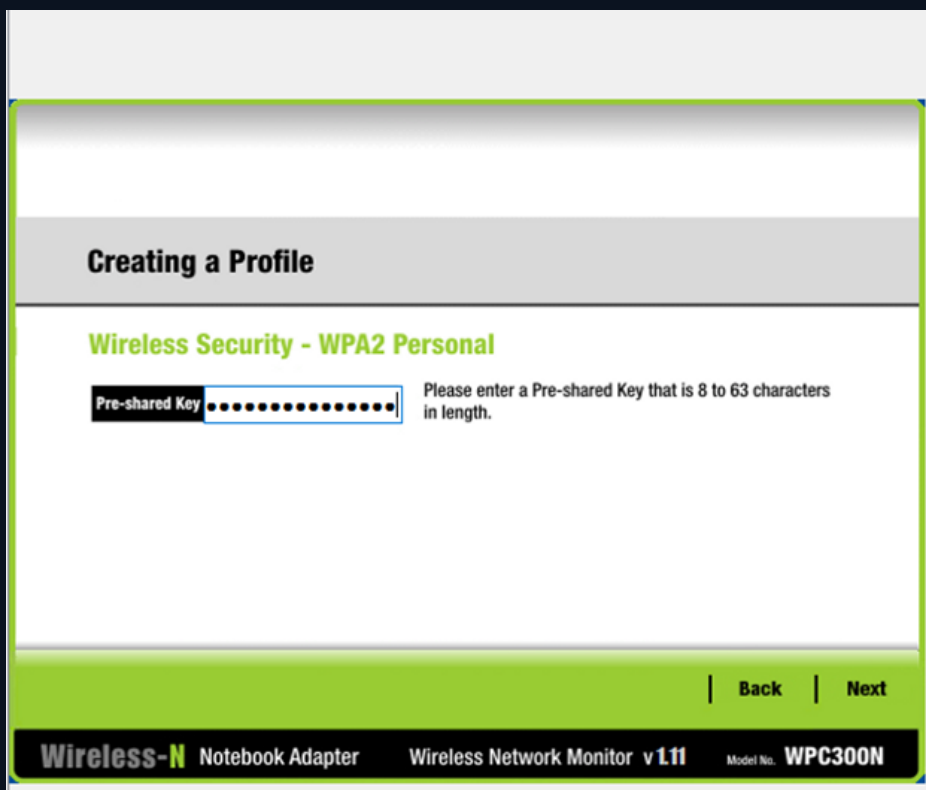
On the laptop I went to Desktop -> PC wireless-> Profiles -> Added my EC number as profile name -> clicked Ok



I clicked Advanced Setup -> Added my EC number as Network name -> clicked next



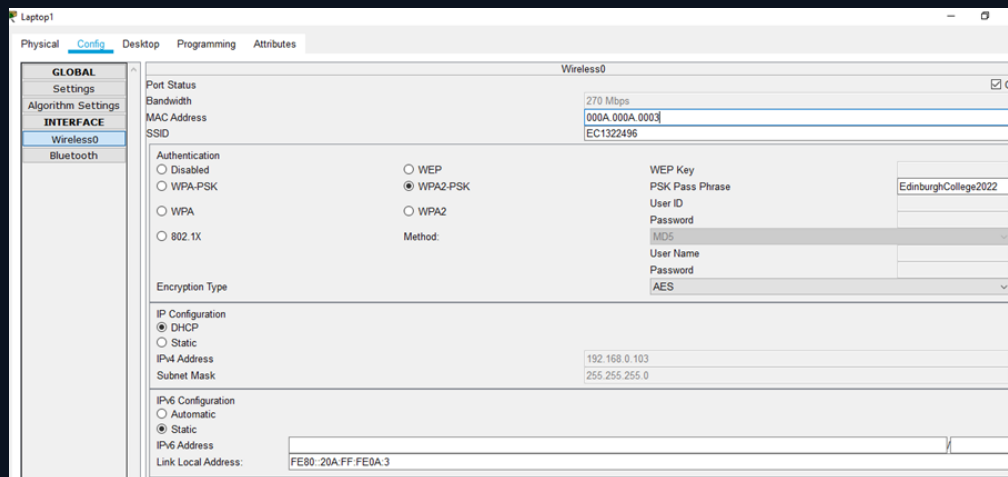
Then I selected WPA2-Personal ->Next



Then I added the passphrase key ->Next



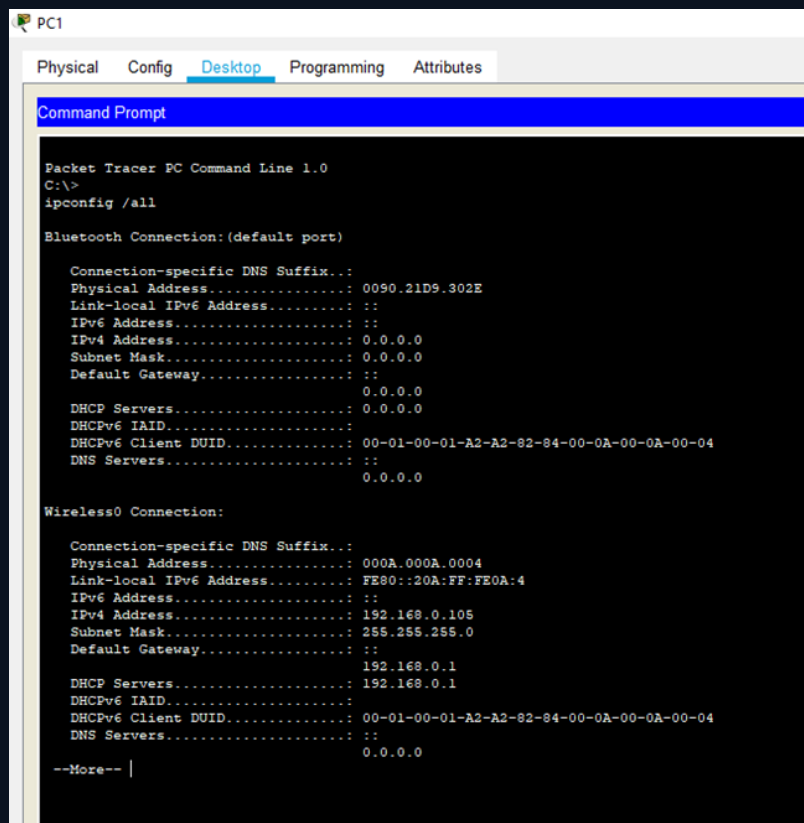
Laptop is now connected



I then went back to config -> Wireless0 -> to change the MAC address as shown above



## Stage 4 — Implement wireless MAC address filtering to further secure the wireless network



```
PC1
Physical Config Desktop Programming Attributes
Command Prompt

Packet Tracer PC Command Line 1.0
C:\>
ipconfig /all

Bluetooth Connection: (default port)

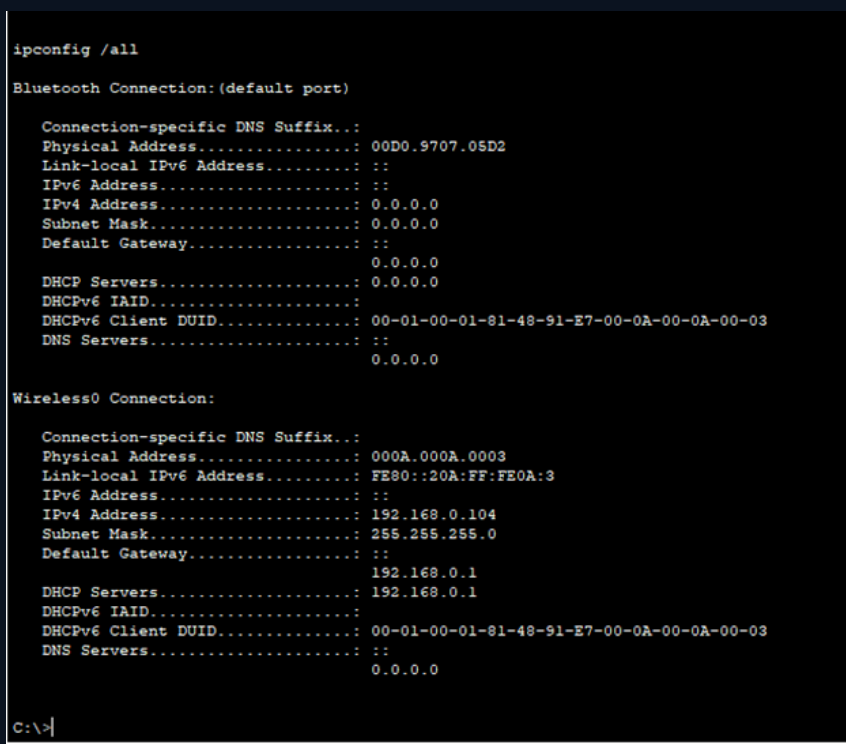
Connection-specific DNS Suffix...:
Physical Address.....: 0090.21D9.302E
Link-local IPv6 Address.....: ::
IPv6 Address.....: ::
IPv4 Address.....: 0.0.0.0
Subnet Mask.....: 0.0.0.0
Default Gateway.....: ::
DHCP Servers.....: 0.0.0.0
DHCPv6 IAID.....:
DHCPv6 Client DUID.....: 00-01-00-01-A2-A2-84-00-0A-00-0A-00-04
DNS Servers.....: ::
0.0.0.0

Wireless0 Connection:

Connection-specific DNS Suffix...:
Physical Address.....: 000A.000A.0004
Link-local IPv6 Address.....: FE80::20A:FF:FE0A:4
IPv6 Address.....: ::
IPv4 Address.....: 192.168.0.105
Subnet Mask.....: 255.255.255.0
Default Gateway.....: ::
DHCP Servers.....: 192.168.0.1
DHCPv6 IAID.....: 192.168.0.1
DHCPv6 Client DUID.....: 00-01-00-01-A2-A2-84-00-0A-00-0A-00-04
DNS Servers.....: ::
0.0.0.0

--More-- |
```

On PC I went to Desktop -> Command prompt -> typed command ipconfig /all



```
ipconfig /all

Bluetooth Connection: (default port)

Connection-specific DNS Suffix...:
Physical Address.....: 00D0.9707.05D2
Link-local IPv6 Address.....: ::
IPv6 Address.....: ::
IPv4 Address.....: 0.0.0.0
Subnet Mask.....: 0.0.0.0
Default Gateway.....: ::
DHCP Servers.....: 0.0.0.0
DHCPv6 IAID.....:
DHCPv6 Client DUID.....: 00-01-00-01-81-48-91-E7-00-0A-00-0A-00-03
DNS Servers.....: ::
0.0.0.0

Wireless0 Connection:

Connection-specific DNS Suffix...:
Physical Address.....: 000A.000A.0003
Link-local IPv6 Address.....: FE80::20A:FF:FE0A:3
IPv6 Address.....: ::
IPv4 Address.....: 192.168.0.104
Subnet Mask.....: 255.255.255.0
Default Gateway.....: ::
DHCP Servers.....: 192.168.0.1
DHCPv6 IAID.....: 192.168.0.1
DHCPv6 Client DUID.....: 00-01-00-01-81-48-91-E7-00-0A-00-0A-00-03
DNS Servers.....: ::
0.0.0.0

C:\>|
```

On the laptop I also went to Desktop -> command prompt -> and typed ipconfig /all command

Smartphone1

Physical Config **Desktop** Programming Attributes

Command Prompt

```
Packet Tracer PC Command Line 1.0
C:\>ipconfig /all

Wireless0 Connection: (default port)

    Connection-specific DNS Suffix...: 
    Physical Address. . . . .: 000A.000A.0002
    Link-local IPv6 Address . . . . .: FE80::20A:FF:FE0A:2
    IPv6 Address. . . . .: ::
    IPv4 Address. . . . .: 192.168.0.102
    Subnet Mask. . . . .: 255.255.255.0
    Default Gateway. . . . .: ::

    DHCP Servers. . . . .: 192.168.0.1
    DHCPv6 IAID. . . . .: 192.168.0.1
    DHCPv6 Client DUID. . . . .: 00-01-00-01-48-53-7D-37-00-0A-00-0A-00-02
    DNS Servers. . . . .: ::
    . . . . .: 0.0.0.0

3G/4G Cell1 Connection:

    Connection-specific DNS Suffix...: 
    Physical Address. . . . .: 0002.17D6.0361
    Link-local IPv6 Address . . . . .: FE80::202:17FF:FED6:361
    IPv6 Address. . . . .: ::
    Autoconfiguration IP Address. . . . .: 169.254.3.97
    Subnet Mask. . . . .: 255.255.0.0
    Default Gateway. . . . .: ::
    . . . . .: 0.0.0.0

    DHCP Servers. . . . .: 0.0.0.0
    DHCPv6 IAID. . . . .: 2093952154
    DHCPv6 Client DUID. . . . .: 00-01-00-01-48-53-7D-37-00-0A-00-0A-00-02
    DNS Servers. . . . .: ::
    . . . . .: 0.0.0.0

Bluetooth Connection:

    Connection-specific DNS Suffix...: 
    Physical Address. . . . .: 0000.0CC1.342C
    Link-local IPv6 Address . . . . .: ::
```

Then I did the same process for the smartphone (to Desktop -> command prompt -> and typed ipconfig /all command)

Tablet PC1

Physical Config **Desktop** Programming Attributes

Command Prompt

```
Packet Tracer PC Command Line 1.0
C:\>ipconfig /all

Wireless0 Connection: (default port)

    Connection-specific DNS Suffix...: 
    Physical Address. . . . .: 000A.000A.0001
    Link-local IPv6 Address . . . . .: FE80::20A:FF:FE0A:1
    IPv6 Address. . . . .: ::
    IPv4 Address. . . . .: 192.168.0.100
    Subnet Mask. . . . .: 255.255.255.0
    Default Gateway. . . . .: ::
    . . . . .: 192.168.0.1

    DHCP Servers. . . . .: 192.168.0.1
    DHCPv6 IAID. . . . .: 192.168.0.1
    DHCPv6 Client DUID. . . . .: 00-01-00-01-35-26-90-98-00-0A-00-0A-00-01
    DNS Servers. . . . .: ::
    . . . . .: 0.0.0.0

3G/4G Cell1 Connection:

    Connection-specific DNS Suffix...: 
    Physical Address. . . . .: 0090.21BB.1E83
    Link-local IPv6 Address . . . . .: FE80::290:21FF:FE8B:1E83
    IPv6 Address. . . . .: ::
    Autoconfiguration IP Address. . . . .: 169.254.30.131
    Subnet Mask. . . . .: 255.255.0.0
    Default Gateway. . . . .: ::
    . . . . .: 0.0.0.0

    DHCP Servers. . . . .: 0.0.0.0
    DHCPv6 IAID. . . . .: 445515054
    DHCPv6 Client DUID. . . . .: 00-01-00-01-35-26-90-98-00-0A-00-0A-00-01
    DNS Servers. . . . .: ::
    . . . . .: 0.0.0.0

Bluetooth Connection:

    Connection-specific DNS Suffix...: 
    --More-- |
```

On Tablet - Desktop -> command prompt -> and typed ipconfig /all command

Wireless Router1

Physical Config **GUI** Attributes

Wireless Tri-Band Home Router

**Wireless** Setup Wireless Security Access Restrictions Applications & Gaming Administration

Basic Wireless Settings Wireless Security Guest Network Wireless MAC Filter

**Wireless MAC Filter**

Wireless Port: 2.4G

☒ Enabled
 ☐ Disabled

☐ Prevent PCs listed below from accessing the wireless network  
☒ Permit PCs listed below to access wireless network

Wireless Client List

MAC Address filter list	MAC Address	MAC Address	MAC Address
MAC 01:	00:0A:00:0A:00:01	MAC 26:	00:00:00:00:00:00
MAC 02:	00:0A:00:0A:00:02	MAC 27:	00:00:00:00:00:00
MAC 03:	00:0A:00:0A:00:03	MAC 28:	00:00:00:00:00:00
MAC 04:	00:0A:00:0A:00:04	MAC 29:	00:00:00:00:00:00
MAC 05:	00:00:00:00:00:00	MAC 30:	00:00:00:00:00:00
MAC 06:	00:00:00:00:00:00	MAC 31:	00:00:00:00:00:00
MAC 07:	00:00:00:00:00:00	MAC 32:	00:00:00:00:00:00
MAC 08:	00:00:00:00:00:00	MAC 33:	00:00:00:00:00:00
MAC 09:	00:00:00:00:00:00	MAC 34:	00:00:00:00:00:00

Finally, I went to the router -> GUI -> Wireless -> Wireless MAC filter -> I added the MAC addresses of clients to permit wireless network access