SELF-LEARNING ASSIGNMENT

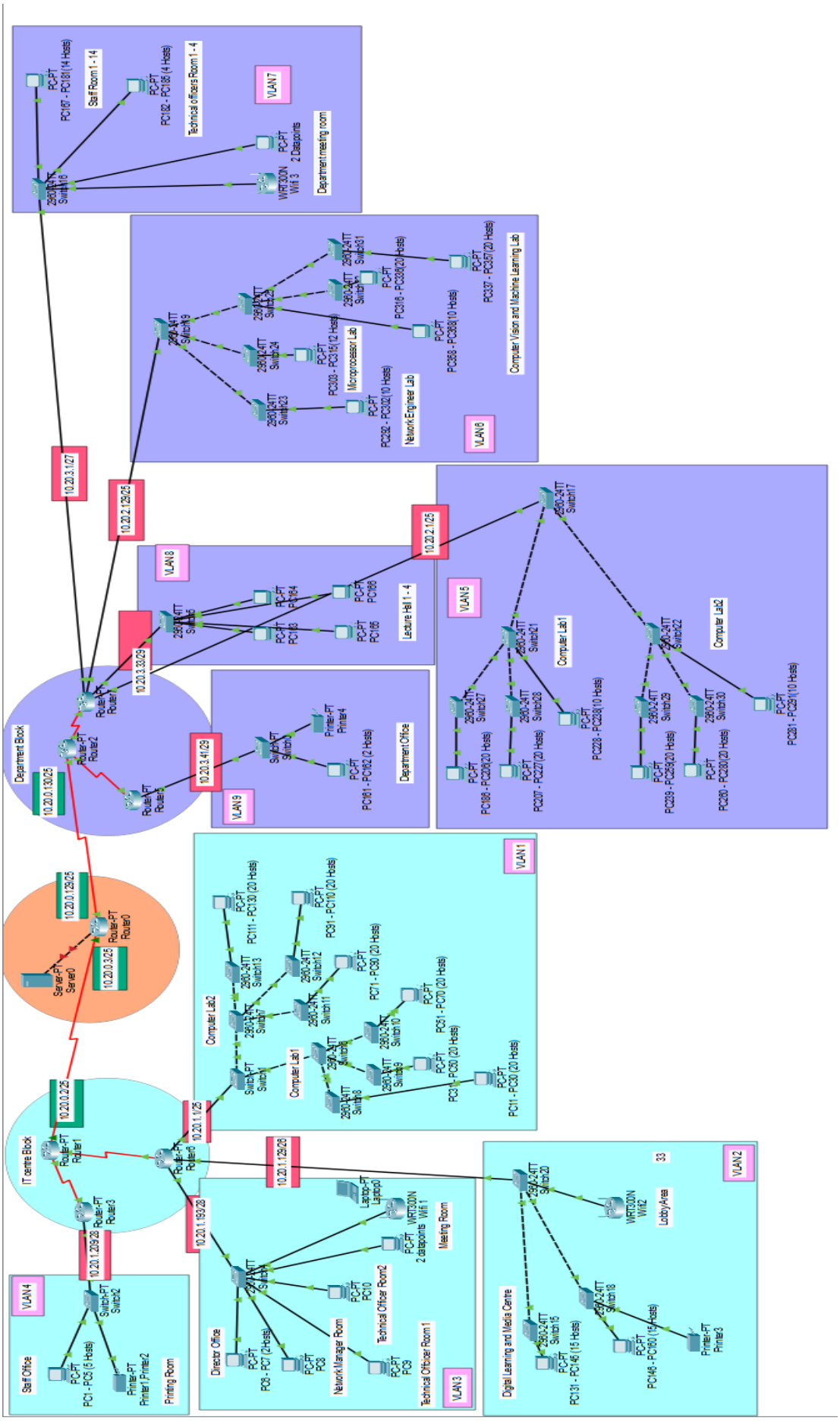
EC4060 - COMPUTER & DATA NETWORKS

DARMILA.T

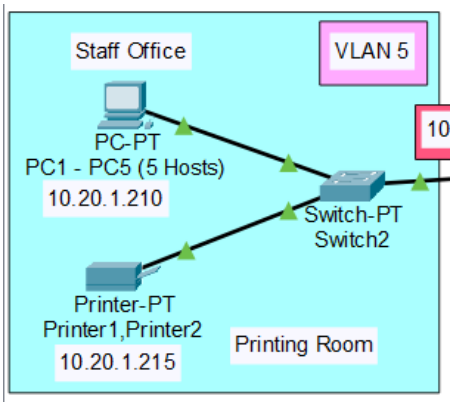
SEMESTER 04

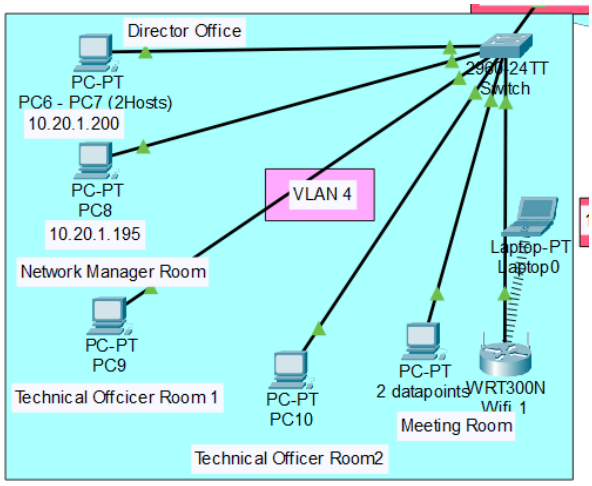
15th MAY 2023

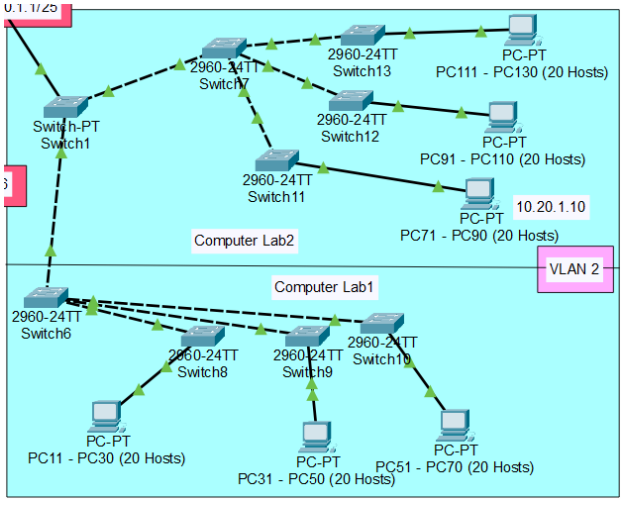
Network diagram

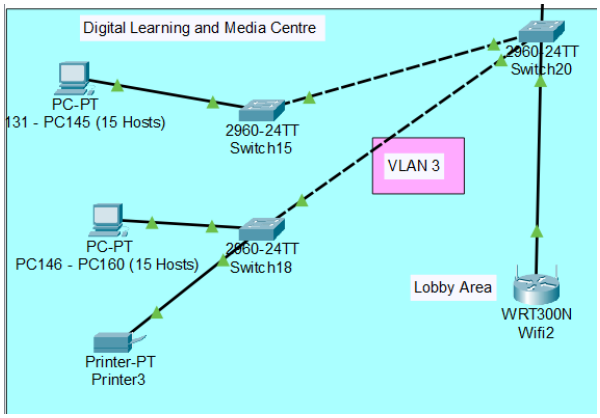


IT block diagram

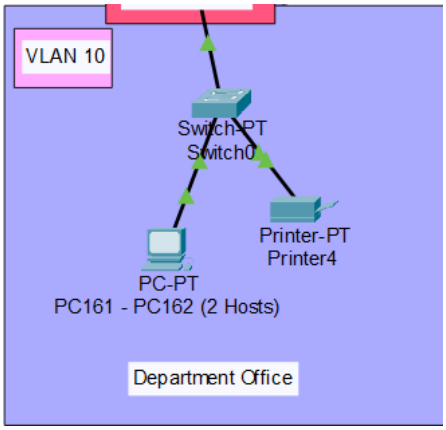


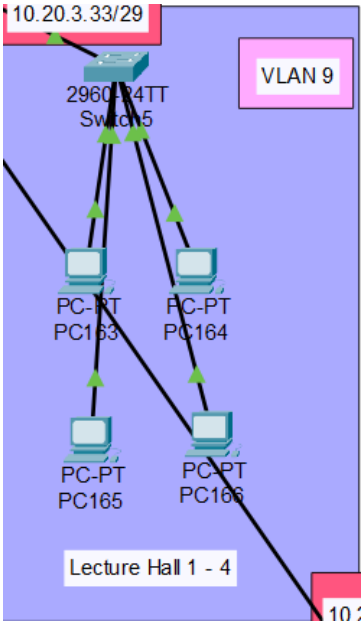


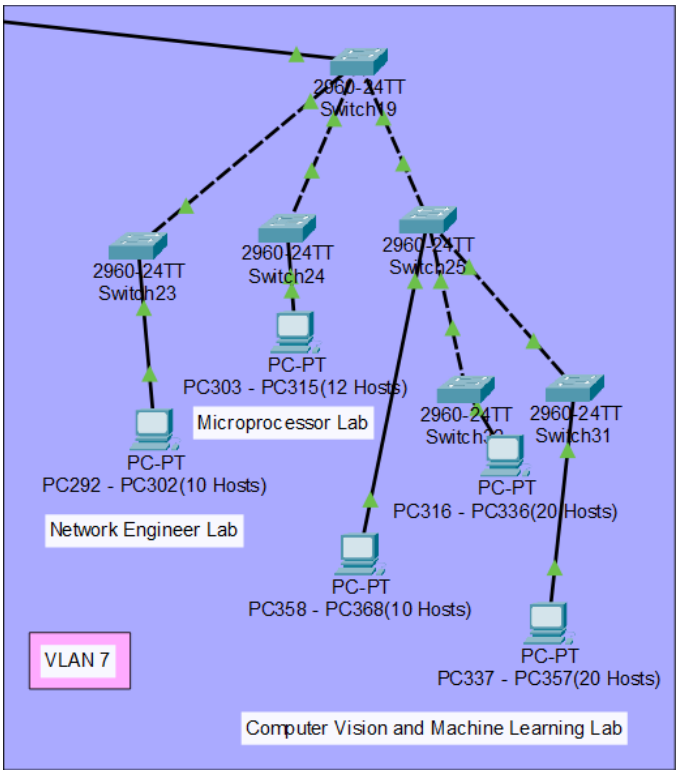


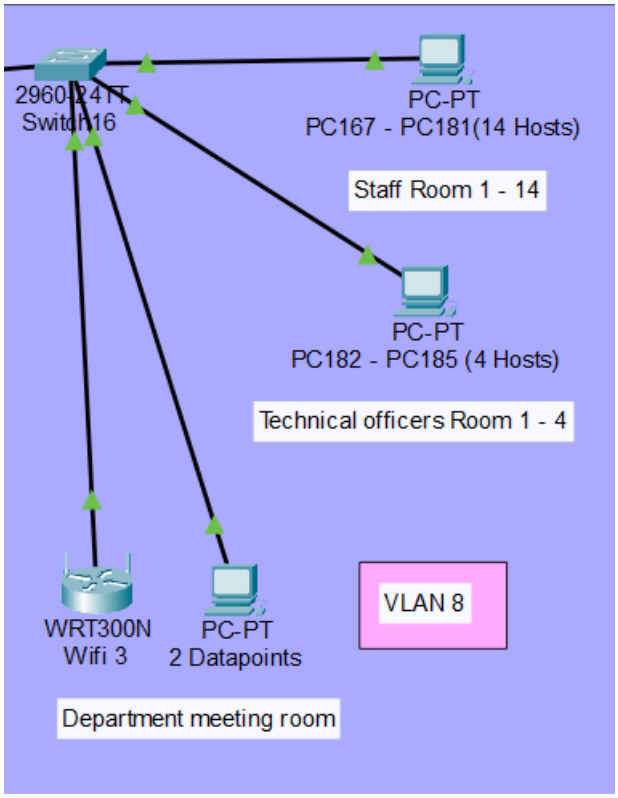


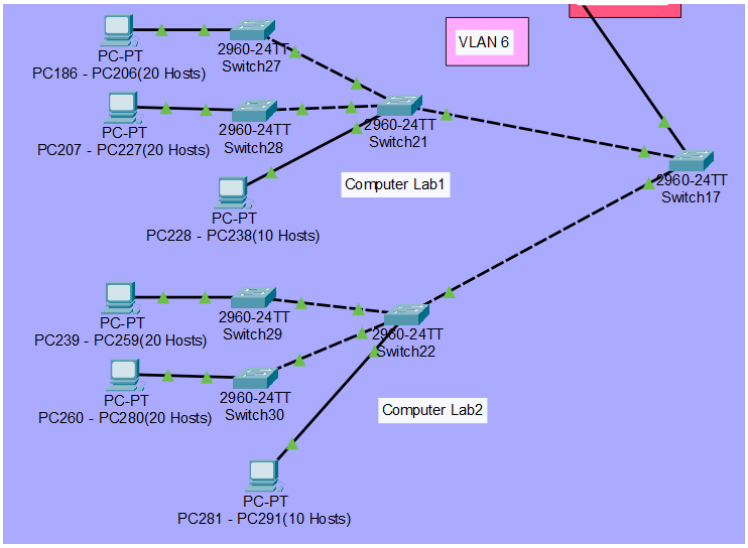
DEPARTMENT block diagram

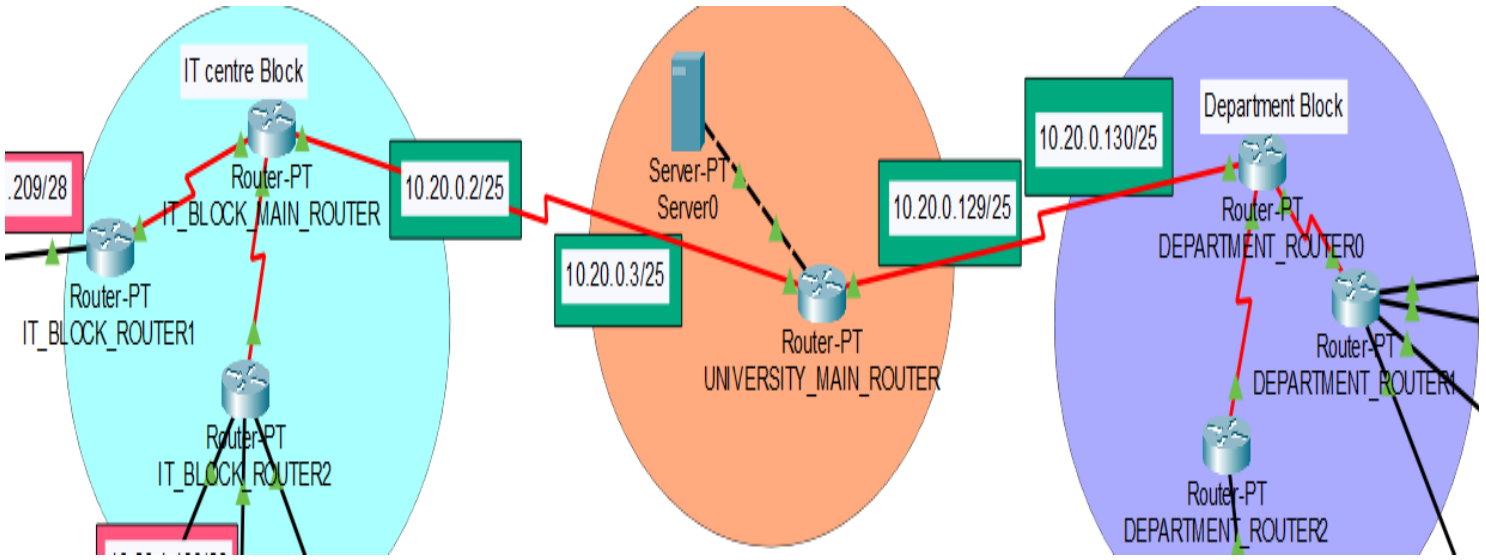







2960-24TT
Switch16
PC-PT
PC167 - PC181(14 Hosts)
Staff Room 1 - 14
PC-PT
PC182 - PC185 (4 Hosts)
Technical officers Room 1 - 4
WRT300N
Wifi 3
PC-PT
2 Datapoints
VLAN 8
Department meeting room


PC-PT
PC186 - PC206(20 Hosts)
2960-24TT
Switch27
VLAN 6
PC-PT
PC207 - PC227(20 Hosts)
2960-24TT
Switch28
2960-24TT
Switch21
Computer Lab1
2960-24TT
Switch17
PC-PT
PC228 - PC238(10 Hosts)
PC-PT
PC239 - PC259(20 Hosts)
2960-24TT
Switch29
2960-24TT
Switch22
PC-PT
PC260 - PC280(20 Hosts)
2960-24TT
Switch30
Computer Lab2
PC-PT
PC281 - PC291(10 Hosts)


IT centre Block
.209/28
Router-PT
IT_BLOCK_MAIN_ROUTER
10.20.0.2/25
Router-PT
IT_BLOCK_ROUTER1
Router-PT
IT_BLOCK_ROUTER2
Server-PT
Server0
10.20.0.3/25
Router-PT
UNIVERSITY_MAIN_ROUTER
10.20.0.129/25
10.20.0.130/25
Department Block
Router-PT
DEPARTMENT_ROUTER0
Router-PT
DEPARTMENT_ROUTER1
Router-PT
DEPARTMENT_ROUTER2

Main Routers

University main Router, IT Block Router 0	Interface serial2/0 Interface serial2/0	2 Needed size	4 Allocated size
University main Router, Department Block Router 0	Interface serial3/0 Interface serial3/0	2 Needed size	4 Allocated size

IT Centre Block

Block Name	Installed Devices	**VLAN**	Needed size	Allocated size
Director Office	2 PC	Vlan 4	9	16
Network Manager Room	1 PC			
Technical Officer Room 1	1 PC			
Technical Officer Room 2	1 PC			
Meeting Room	2 Data Points WiFi			
Staff Office	5 PC	Vlan 5	8	16
Printing Room	2 Printers			
Computer Lab 1	60 PC	Vlan 2	121	128
Computer Lab 2	60 PC			
Digital Learning and Media Centre	30 PC 1 Printer	Vlan 3	33	64
Lobby Area	WiFi			
IT Block Router 0, IT Block Router 2	interface serial 6/0 interface serial 2/0	-	2	4
IT Block Router 0, IT Block Router 1	interface serial 7/0 interface serial 2/0	-	2	4

- Staff room can't be accessed by any other building in IT block & Printing room printers can only access by staffs.

Department Block

Block Name	Installed Devices	**VLAN**	Needed size	Allocated size
Lecture hall 1 - 4	1 PC for each lecture hall Multimedia Projector	Vlan 9	5	8
Staff Room 1 - 14	1 PC for each staff room	Vlan 8	22	32
Technical Officers Room 1 - 4	1 PC for each room			
Department Meeting Room	2 datapoints (Video Conference Facility, PC) WiFi			
Computer Lab 1	50 PC	Vlan 6	101	128
Computer Lab 2	50 PC			
Network Engineering Lab	10 PC	Vlan 7	73	128
Microprocessor Lab	12 PC			
Computer Vision and Machine Learning Lab	50 PC			
Department Office	2 PC 1 Printer	Vlan 10	4	8
Department Block Router 0, Department Block Router 1	interface serial 6/0 interface serial 2/0	-	2	4
Department Block Router 0, Department Block Router 2	interface serial 2/0 interface serial 2/0	-	2	4

- Department office can't be accessed by any other building in department block & department office printers can only access by staffs.

IP ADDRESS RANGE & SUBNET

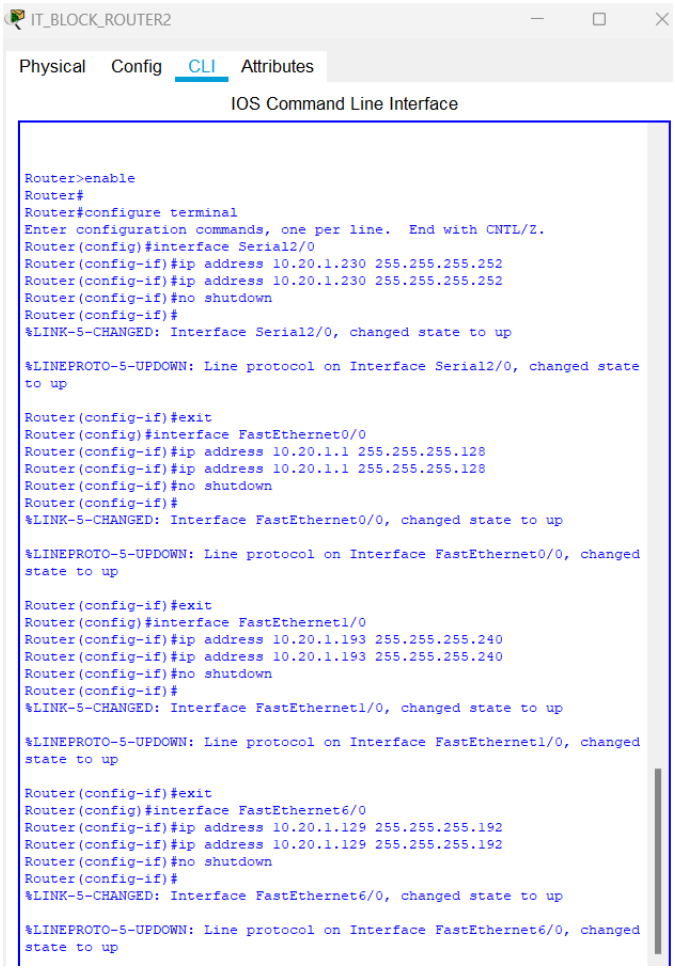
Vlan	Allocated size	Network ID	Usable IP address range	Broadcast ID	**Default gate way**	Subnet mask	CIDR
IT CENTRE BLOCK							
2	128	10.20.1.0	10.20.1.1 – 10.20.1.126	10.20.1.127	10.20.1.1	255.255.255.128	/25
3	64	10.20.1.128	10.20.1.129 – 10.20.190	10.20.1.191	10.20.1.129	255.255.255.192	/26
4	16	10.20.1.192	10.20.1.193 – 10.20.1.206	10.20.1.207	10.20.1.193	255.255.255.240	/28
5	16	10.20.1.208	10.20.1.209 – 10.20.1.222	10.20.1.223	10.20.1.209	255.255.255.240	/28
IT Block Router 1 – interface serial 2/0				10.20.1.225/30			
IT Block Router 0– interface serial 7/0				10.20.1.226/30			
IT Block Router 0– interface serial 6/0				10.20.1.229/30			
IT Block Router 2 – interface serial 2/0				10.20.1.230/30			
DEPARTMENT BLOCK							
6	128	10.20.2.0	10.20.2.1 – 10.20.2.126	10.20.2.127	10.20.2.1	255.255.255.128	/25
7	128	10.20.2.128	10.20.2.129 – 10.20.2.254	10.20.2.255	10.20.2.129	255.255.255.128	/25
8	32	10.20.3.0	10.20.3.1 – 10.20.3.30	10.20.3.31	10.20.3.1	255.255.255.224	/27
9	8	10.20.3.32	10.20.3.33 – 10.20.3.38	10.20.3.39	10.20.3.33	255.255.255.248	/29
10	8	10.20.3.40	10.20.3.41 – 10.20.3.46	10.20.3.47	10.20.3.41	255.255.255.248	/29
Department Block Router 0 – interface serial 6/0				10.20.3.49/30			
Department Block Router 1 – interface serial 2/0				10.20.3.50/30			
Department Block Router 0 – interface serial 2/0				10.20.3.53/30			
Department Block Router 2 – interface serial 2/0				10.20.3.54/30			
University Main Router – interface serial 2/0				10.20.0.3/25			
IT Block Router 0– interface serial 2/0				10.20.0.2/25			
University Main Router – interface serial 3/0				10.20.0.129/25			
Department Block Router 0 – interface serial 3/0				10.20.0.130/25			

Router configuration

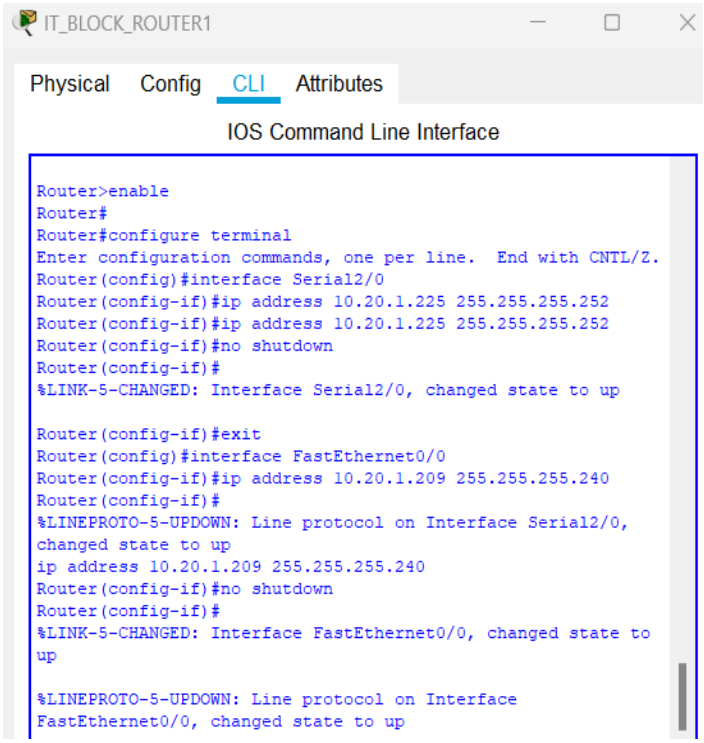
- ✓ click on the CLI tab to access the configuration menu.
- ✓ Type –

enable	- To get to privileged mode.
configure terminal	- To access the configuration menu.
interface FastEthernet0/0	- To access the Ethernet0/0
ip address 10.20.1.209 255.255.255.240	- To assign IP address & subnet mask.
no shutdown	- To open the interface up for business.

IT BLOCK – Router 2



IT BLOCK – Router 1



IT BLOCK – Main Router

IT_BLOCK_MAIN_ROUTER

Physical Config CLI Attributes

IOS Command Line Interface

```
Router#
Router#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#interface Serial2/0
Router(config-if)#ip address 10.20.0.2 255.255.255.128
Router(config-if)#ip address 10.20.0.2 255.255.255.128
Router(config-if)#no shutdown
Router(config-if)#
%LINK-5-CHANGED: Interface Serial2/0, changed state to up

Router(config-if)#exit
Router(config)#interface Serial6/0
Router(config-if)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial2/0, changed state
to up
ip address 10.20.1.229 255.255.255.252
Router(config-if)#ip address 10.20.1.229 255.255.255.252
Router(config-if)#no shutdown
Router(config-if)#
%LINK-5-CHANGED: Interface Serial6/0, changed state to up

Router(config-if)#exit
Router(config)#interface Serial7/0
Router(config-if)#ip address 10.20.1.226 255.255.255.252
Router(config-if)#ip address 10.20.1.226 255.255.255.252
Router(config-if)#no shutdown
Router(config-if)#
%LINK-5-CHANGED: Interface Serial7/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial6/0, changed state
to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial7/0, changed state
to up
```

University Main Router

UNIVERSITY_MAIN_ROUTER

Physical Config CLI Attributes

IOS Command Line Interface

```
Router>enable
Router#
Router#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#interface FastEthernet0/0
Router(config-if)#ip address 10.20.4.2 255.255.255.128
Router(config-if)#ip address 10.20.4.2 255.255.255.128
Router(config-if)#no shutdown
Router(config-if)#
%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 Serial2/0
Router(config-if)#ip address 10.20.0.3 255.255.255.128
Router(config-if)#ip address 10.20.0.3 255.255.255.128
Router(config-if)#no shutdown
Router(config-if)#
%LINK-5-CHANGED: Interface Serial2/0, changed state to up

Router(config-if)#exit
Router(config)#interface Serial3/0
Router(config-if)#ip address 10.20.0.129 255.255.255.128
Router(config-if)#ip address 10.20.0.129 255.255.255.128
Router(config-if)#no shutdown
Router(config-if)#
%LINK-5-CHANGED: Interface Serial3/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial2/0, changed state
to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial3/0, changed state
to up
```

DEPARTMENT BLOCK – Router 0

DEPARTMENT_ROUTER0

Physical Config CLI Attributes

IOS Command Line Interface

```
Router>enable
Router#
Router#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#interface Serial6/0
Router(config-if)#ip address 10.20.3.49 255.255.255.252
Router(config-if)#ip address 10.20.3.49 255.255.255.252
Router(config-if)#no shutdown
Router(config-if)#
%LINK-5-CHANGED: Interface Serial6/0, changed state to up

Router(config-if)#exit
Router(config)#interface Serial2/0
Router(config-if)#ip address 10.20.3.53 255.255.255.252
Router(config-if)#ip address 10.20.3.53 255.255.255.252
Router(config-if)#no shutdown
Router(config-if)#
%LINK-5-CHANGED: Interface Serial2/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial6/0, changed state
to up

Router(config-if)#exit
Router(config)#interface Serial3/0
Router(config-if)#ip address 10.20.0.130 255.255.255.128
Router(config-if)#ip address 10.20.0.130 255.255.255.128
Router(config-if)#no shutdown
Router(config-if)#
%LINK-5-CHANGED: Interface Serial3/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial2/0, changed state
to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial3/0, changed state
```

DEPARTMENT BLOCK – Router 1

DEPARTMENT_ROUTER1

Physical Config CLI Attributes

IOS Command Line Interface

```
Router>enable
Router#
Router#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#interface FastEthernet8/0
Router(config-if)#ip address 10.20.2.1 255.255.255.128
Router(config-if)#ip address 10.20.2.1 255.255.255.128
Router(config-if)#no shutdown
Router(config-if)#
%LINK-5-CHANGED: Interface FastEthernet8/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet8/0,
changed state to up

Router(config-if)#exit
Router(config)#interface FastEthernet7/0
Router(config-if)#ip address 10.20.3.33 255.255.255.248
Router(config-if)#ip address 10.20.3.33 255.255.255.248
Router(config-if)#no shutdown
Router(config-if)#
%LINK-5-CHANGED: Interface FastEthernet7/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet7/0,
changed state to up

Router(config-if)#exit
Router(config)#interface FastEthernet6/0
Router(config-if)#ip address 10.20.2.129 255.255.255.128
Router(config-if)#ip address 10.20.2.129 255.255.255.128
Router(config-if)#no shutdown
Router(config-if)#
%LINK-5-CHANGED: Interface FastEthernet6/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet6/0,
changed state to up
shutdown
Router(config-if)#
%LINK-5-CHANGED: Interface FastEthernet6/0, changed state to
administratively down

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet6/0,
changed state to down
no shutdown
Router(config-if)#
%LINK-5-CHANGED: Interface FastEthernet6/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet6/0,
changed state to up
```

DEPARTMENT BLOCK – Router 2

DEPARTMENT_ROUTER2

Physical Config CLI Attributes

IOS Command Line Interface

```
Router>enable
Router#
Router#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#interface Serial2/0
Router(config-if)#ip address 10.20.3.54 255.255.255.252
Router(config-if)#ip address 10.20.3.54 255.255.255.252
Router(config-if)#no shutdown
Router(config-if)#
%LINK-5-CHANGED: Interface Serial2/0, changed state to up

Router(config-if)#exit
Router(config)#interface FastEthernet0/0
Router(config-if)#ip address 10.20.3.41 255.255.255.248
Router(config-if)#ip address 10.20.3.41 255.255.255.248
Router(config-if)#no shutdown
Router(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed
state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial2/0, changed state
to up
```

Switch configuration

- ✓ General configuration methods

Switch

Physical Config CLI Attributes

IOS Command Line Interface

```
Switch>enable
Switch#config terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Switch(config)#hostname IT_OFFICE
IT_OFFICE(config)#banner motd
% Incomplete command.
IT_OFFICE(config)#banner motd #
Enter TEXT message.  End with the character '#'.
only accessed by the adminstator #

IT_OFFICE(config)#line console 0
IT_OFFICE(config-line)#password IT@1234
IT_OFFICE(config-line)#exit
IT_OFFICE(config)#exit
IT_OFFICE#
%SYS-5-CONFIG_I: Configured from console by console

IT_OFFICE#exit
```

✓ Adding VLAN to the switches , change switch port mode for the interface

- IT office – Vlan 4

```
only accessed by the adminstator

IT_OFFICE>enable
IT_OFFICE#config terminal
Enter configuration commands, one per line.  End with CNTL/Z.
IT_OFFICE(config)#vlan 4
IT_OFFICE(config-vlan)#name ItOffice
IT_OFFICE(config-vlan)#exit
IT_OFFICE(config)#interface range fa0/1 - 24
IT_OFFICE(config-if-range)#switchport mode access
IT_OFFICE(config-if-range)#switchport access vlan 4
IT_OFFICE(config-if-range)#interface vlan 4
IT_OFFICE(config-if)#
%LINK-5-CHANGED: Interface Vlan4, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan4, changed state to
up

IT_OFFICE(config-if)#exit
IT_OFFICE(config)#exit
IT_OFFICE#
%SYS-5-CONFIG_I: Configured from console by console
```

- IT computer labs – Vlan 2

```
only accessed by admin

IT_COMLABS>enable
IT_COMLABS#config terminal
Enter configuration commands, one per line.  End with CNTL/Z.
IT_COMLABS(config)#vlan 2
IT_COMLABS(config-vlan)#name ItComLabs
IT_COMLABS(config-vlan)#exit
IT_COMLABS(config)#interface range fa1/1 - fa5/1
IT_COMLABS(config-if-range)#switchport mode access
IT_COMLABS(config-if-range)#switch access vlan 2
IT_COMLABS(config-if-range)#interface vlan 2
IT_COMLABS(config-if)#
%LINK-5-CHANGED: Interface Vlan2, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan2, changed state to
up
```

- IT Digital learning & lobby – Vlan 3

```
Switch#enable
Switch#
Switch#
Switch#config terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Switch(config)#vlan 3
Switch(config-vlan)#name ItStudent
Switch(config-vlan)#exit
Switch(config)#interface range fa0/1 - 3
Switch(config-if-range)#switchport mode access
Switch(config-if-range)#switchport access vlan 3
Switch(config-if-range)#exit
Switch(config)#exit
Switch#
%SYS-5-CONFIG_I: Configured from console by console
```

- IT staff office – Vlan 5

```
Switch>enable
Switch#config terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Switch(config)#vlan 5
Switch(config-vlan)#name ItStaffOffice
Switch(config-vlan)#exit
Switch(config)#interface range fa1/1 fa2/1
                                     ^
% Invalid input detected at '^' marker.

Switch(config)#interface fa1/1
Switch(config-if)#switchport mode access
Switch(config-if)#switchport access vlan 5
Switch(config-if)#exit
Switch(config)#interface fa2/1
Switch(config-if)#switchport mode access
Switch(config-if)#switchport access vlan 5
Switch(config-if)#exit
Switch(config)#exit
```

- Department computer labs – Vlan 6

```
Switch>enable
Switch#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Switch(config)#hostname DepartComLabs
DepartComLabs(config)#vlan 6
DepartComLabs(config-vlan)#name DepartComLabs
DepartComLabs(config-vlan)#exit
DepartComLabs(config)#interface range fa0/2 - 3
DepartComLabs(config-if-range)#switchport mode access
DepartComLabs(config-if-range)#switchport access vlan 6
DepartComLabs(config-if-range)#exit
DepartComLabs(config)#exit
DepartComLabs#
%SYS-5-CONFIG_I: Configured from console by console
```

- Department Lecture Hall – Vlan 9

```
DepartmentLectureHall#config terminal
Enter configuration commands, one per line.  End with CNTL/Z.
DepartmentLectureHall(config)#vlan 9
DepartmentLectureHall(config-vlan)#name departLectureHall
DepartmentLectureHall(config-vlan)#exit
DepartmentLectureHall(config)#interface range fa0/1 - 5
DepartmentLectureHall(config-if-range)#switchport mode access
DepartmentLectureHall(config-if-range)#switchport access vlan 9
DepartmentLectureHall(config-if-range)#exit
DepartmentLectureHall(config)#exit
DepartmentLectureHall#
%SYS-5-CONFIG_I: Configured from console by console
```

- Department labs – Vlan 7

```
Switch>enable
Switch#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Switch(config)#hostname DepartLabs
DepartLabs(config)#vlan 7
DepartLabs(config-vlan)#name DepartLabs
DepartLabs(config-vlan)#exit
DepartLabs(config)#interface range fa0/2 - 4
DepartLabs(config-if-range)#switchport mode access
DepartLabs(config-if-range)#switchport access vlan 7
DepartLabs(config-if-range)#exit
DepartLabs(config)#exit
DepartLabs#
%SYS-5-CONFIG_I: Configured from console by console
```

- Department office – Vlan 10

```
DepartmentOffice#config terminal
Enter configuration commands, one per line.  End with CNTL/Z.
DepartmentOffice(config)#vlan 10
DepartmentOffice(config-vlan)#name DepartOffice
DepartmentOffice(config-vlan)#exit
```

```
DepartmentOffice(config)#interface fa1/1
DepartmentOffice(config-if)#switchport mode access
DepartmentOffice(config-if)#switchport access vlan 10
DepartmentOffice(config-if)#exit
DepartmentOffice(config)#interface fa2/1
DepartmentOffice(config-if)#switchport mode access
DepartmentOffice(config-if)#switchport access vlan 10
DepartmentOffice(config-if)#exit
DepartmentOffice(config)#interface fa3/1
DepartmentOffice(config-if)#switchport mode access
DepartmentOffice(config-if)#switchport access vlan 10
DepartmentOffice(config-if)#exit
DepartmentOffice(config)#
```

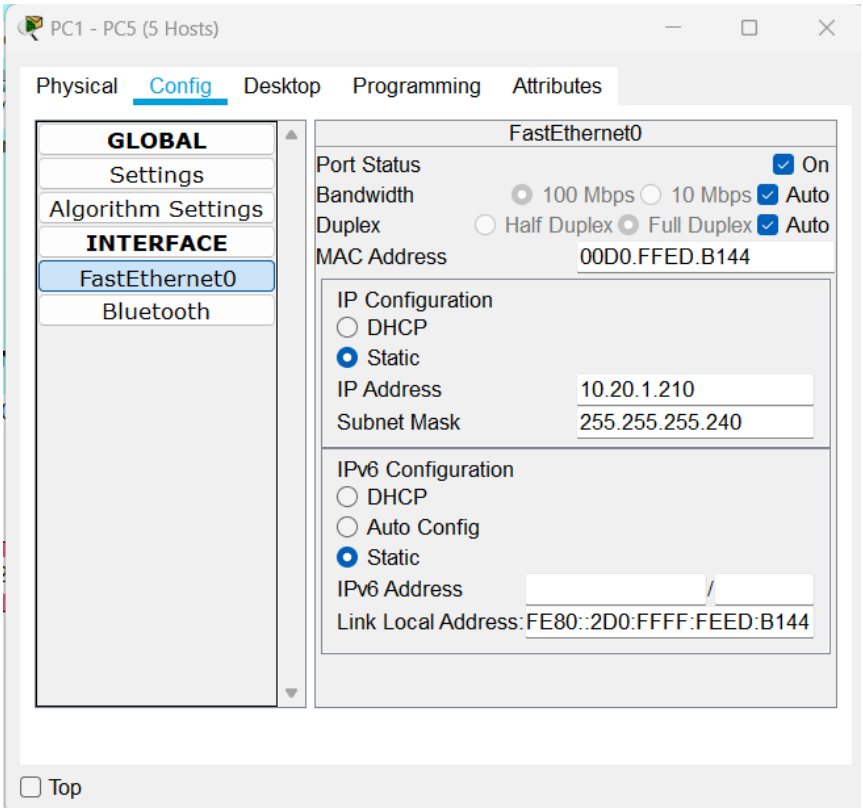
- Department office rooms – Vlan 8

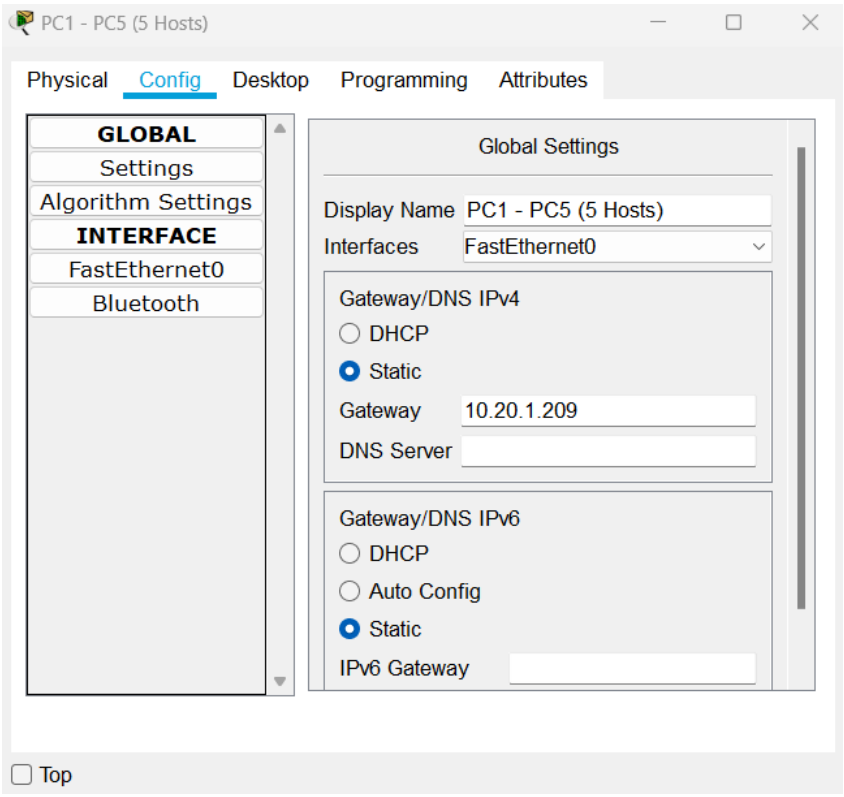
```
Switch>enable
Switch#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Switch(config)#hostname DepartOfficeRooms
DepartOfficeRooms(config)#vlan 8
DepartOfficeRooms(config-vlan)#name DepartOfficeRooms
DepartOfficeRooms(config-vlan)#exit
DepartOfficeRooms(config)#interface range fa0/2 - 5
DepartOfficeRooms(config-if-range)#switchport mode access
DepartOfficeRooms(config-if-range)#switchport access vlan 8
DepartOfficeRooms(config-if-range)#exit
DepartOfficeRooms(config)#exit
DepartOfficeRooms#
%SYS-5-CONFIG_I: Configured from console by console
```

→ show vlan

```
DepartOfficeRooms#show vlan

VLAN Name                              Status    Ports
---- --------------------------------- ---------
--------------------------------
1    default                           active    Fa0/1, Fa0/6, Fa0/7,
Fa0/8
                                                 Fa0/9, Fa0/10, Fa0/11,
Fa0/12
                                                 Fa0/13, Fa0/14, Fa0/15,
Fa0/16
                                                 Fa0/17, Fa0/18, Fa0/19,
Fa0/20
                                                 Fa0/21, Fa0/22, Fa0/23,
Fa0/24
                                                 Gig0/1, Gig0/2
8    DepartOfficeRooms                 active    Fa0/2, Fa0/3, Fa0/4,
Fa0/5
1002 fddi-default                      active
1003 token-ring-default                active
1004 fddinet-default                   active
1005 trnet-default                     active
```

PC configration

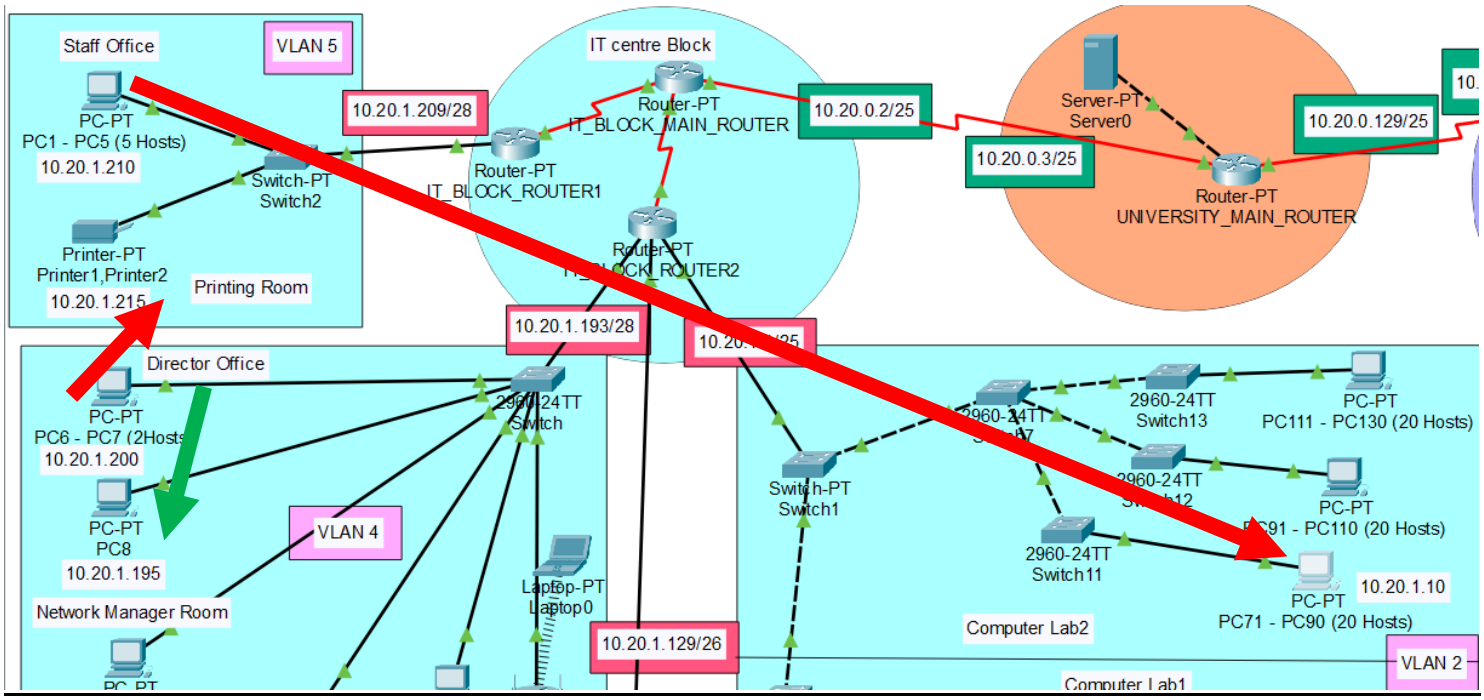




Restrict access of printers by non-staffs

```
Switch#
Switch#config terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Switch(config)#ip access-list extended Printer
Switch(config-ext-nacl)#permit ip host 10.20.1.210 host 10.20.1.215
Switch(config-ext-nacl)#permit ip host 10.20.1.211 host 10.20.1.215
Switch(config-ext-nacl)#permit ip host 10.20.1.212 host 10.20.1.215
Switch(config-ext-nacl)#permit ip host 10.20.1.211 host 10.20.1.215
Switch(config-ext-nacl)#permit ip host 10.20.1.213 host 10.20.1.215
Switch(config-ext-nacl)#permit ip host 10.20.1.214 host 10.20.1.215
Switch(config-ext-nacl)#deny ip host 10.20.1.200 host 10.20.1.215
Switch(config-ext-nacl)#permit ip any any
Switch(config-ext-nacl)#
Switch(config-ext-nacl)#exit
Switch(config)#exit
```

Pinging



Ping from computer lab (10.20.1.10) pc to staff room pc (10.20.1.210)

```
Packet Tracer PC Command Line 1.0
C:\>ping 10.20.1.210

Pinging 10.20.1.210 with 32 bytes of data:

Reply from 10.20.1.1: Destination host unreachable.
Reply from 10.20.1.1: Destination host unreachable.
Reply from 10.20.1.1: Destination host unreachable.
Reply from 10.20.1.1: Destination host unreachable.

Ping statistics for 10.20.1.210:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\>
```

Ping from director office(10.20.1.200) to network manager room(10.20.1.195)

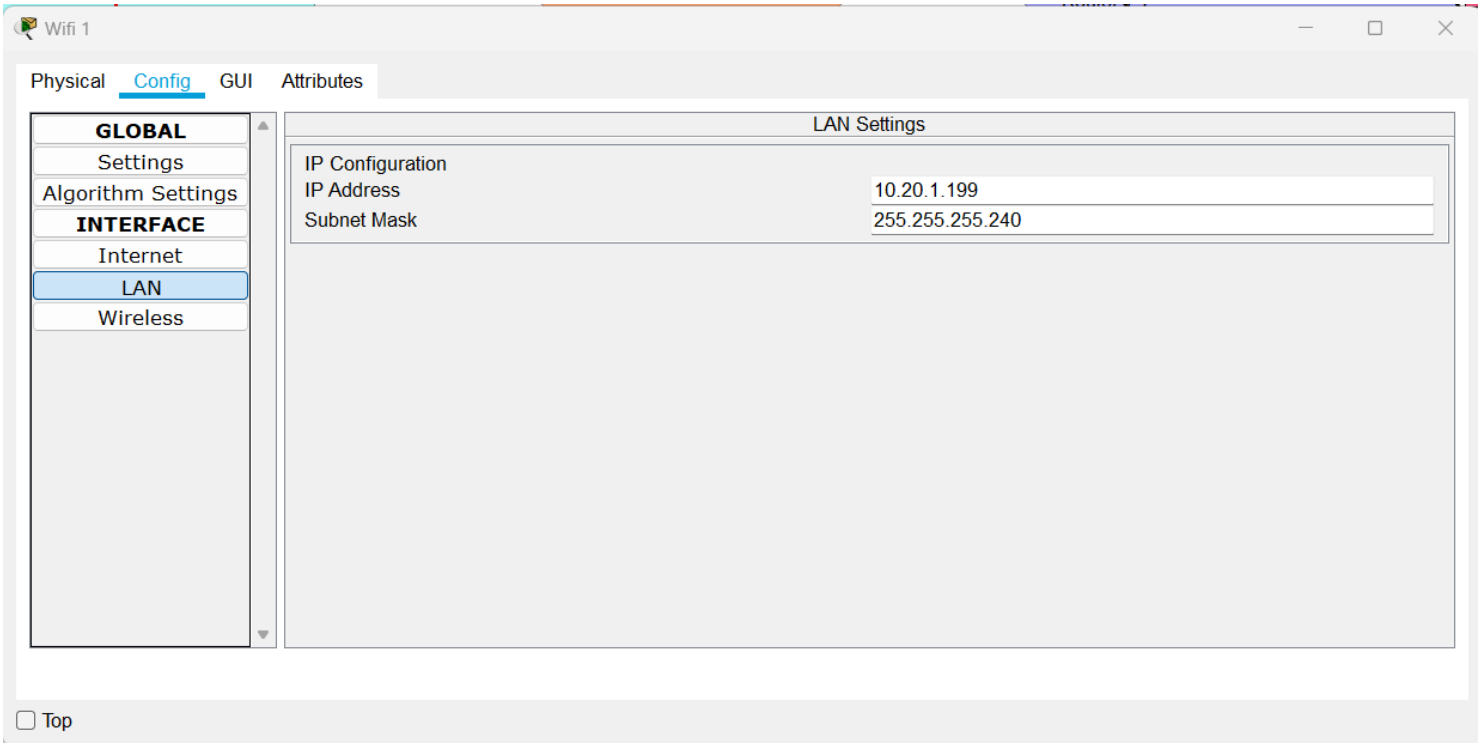
```
C:\>ping 10.20.1.195

Pinging 10.20.1.195 with 32 bytes of data:

Reply from 10.20.1.195: bytes=32 time<1ms TTL=128
Reply from 10.20.1.195: bytes=32 time<1ms TTL=128
Reply from 10.20.1.195: bytes=32 time<1ms TTL=128
Reply from 10.20.1.195: bytes=32 time<1ms TTL=128

Ping statistics for 10.20.1.195:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms
```

Ping from director office(10.20.1.200) to printing room printer(10.20.1.215)

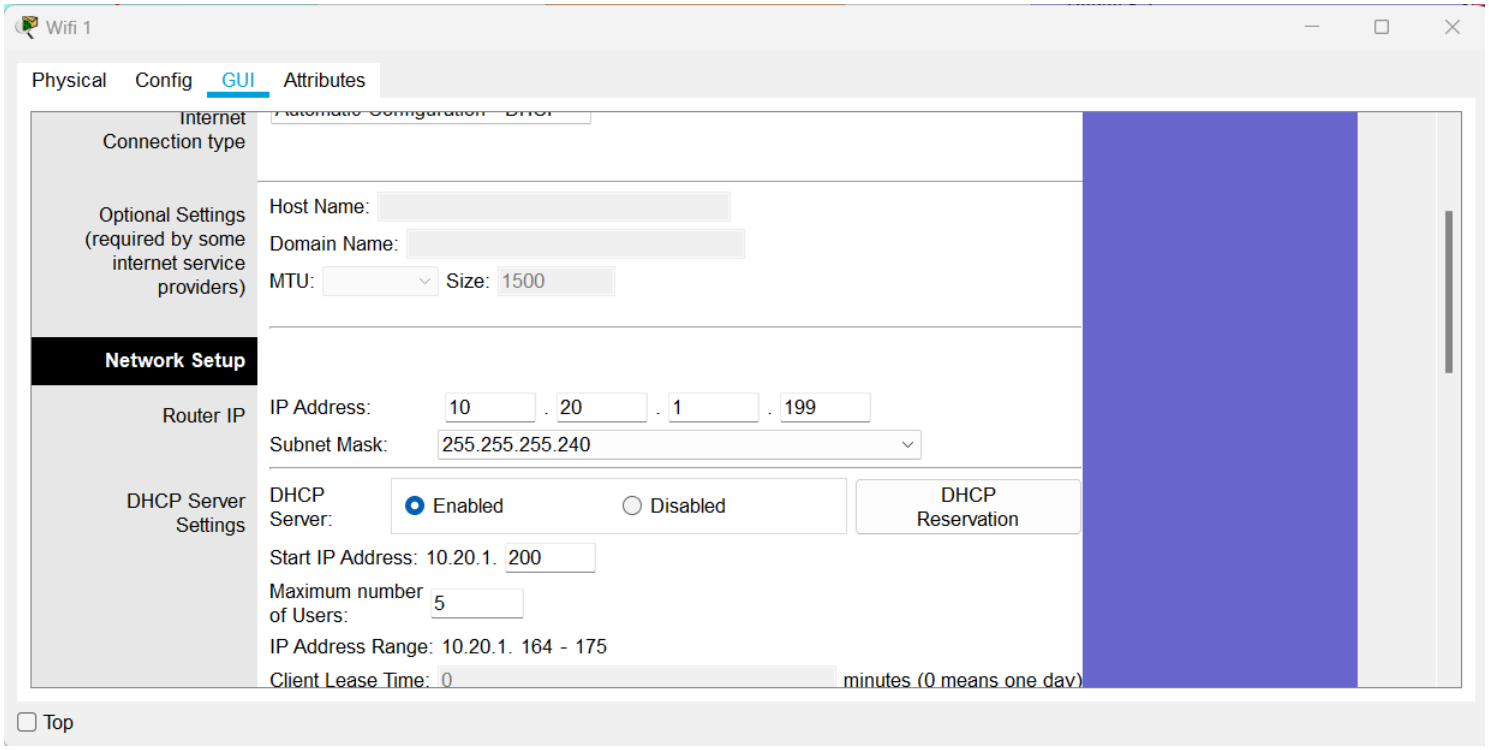
```
Packet Tracer PC Command Line 1.0
C:\>ping 10.20.1.215

Pinging 10.20.1.215 with 32 bytes of data:

Reply from 10.20.1.193: Destination host unreachable.
Reply from 10.20.1.193: Destination host unreachable.
Reply from 10.20.1.193: Destination host unreachable.
Reply from 10.20.1.193: Destination host unreachable.

Ping statistics for 10.20.1.215:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
```

Wifi configuration

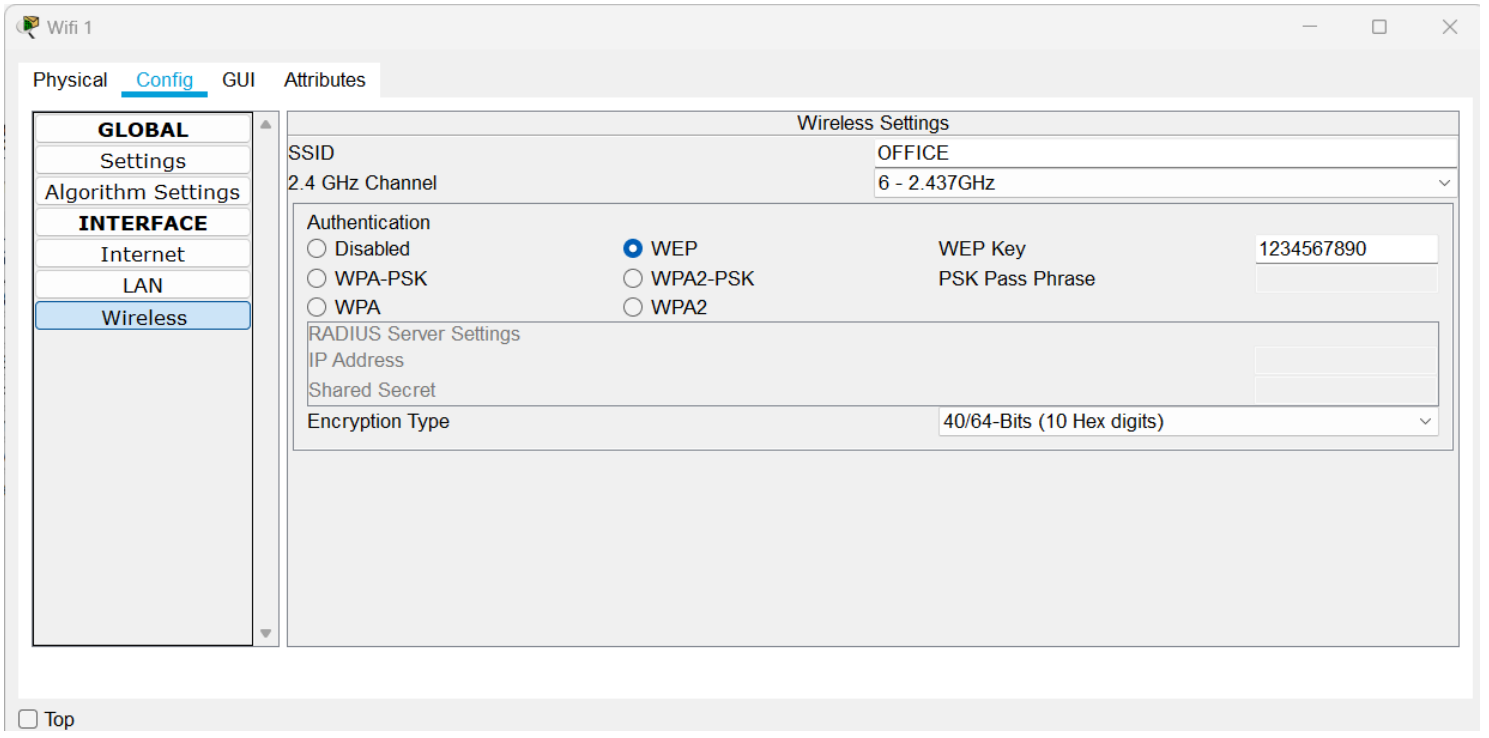
- ✓ Assigning static ipv4 address and subnet mask



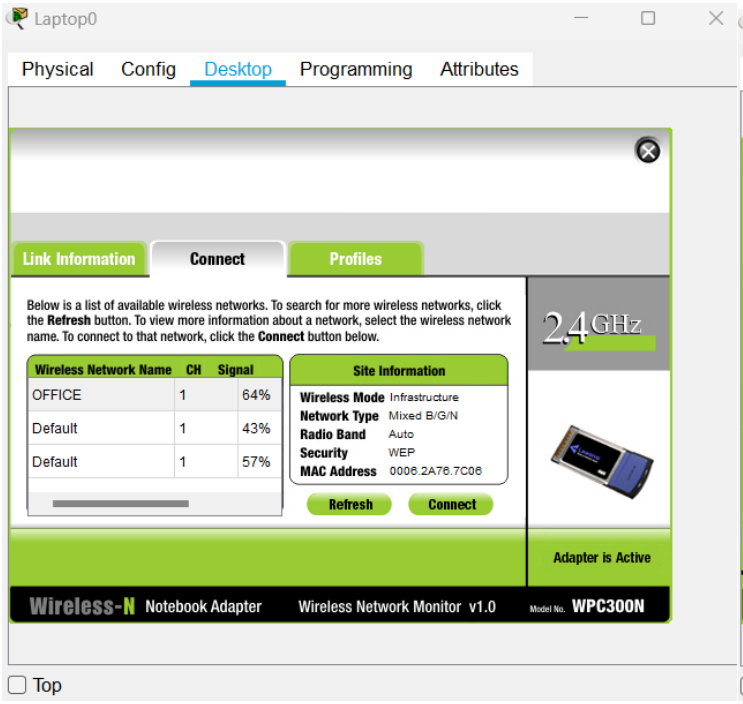
✓ Assigning start ip address and maximum no.of users

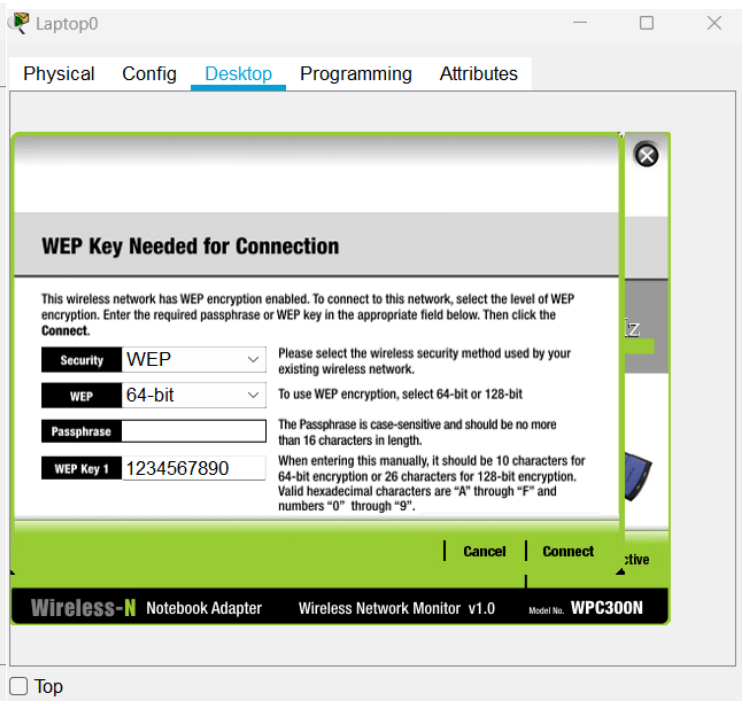


✓ Assigning web key and SSID if required



✓ Connect the labtop with OFFICE wifi





✓ After access Wifi