CENTRE FOR DIPLOMA STUDIES

UNIVERSITI TUN HUSSEIN ONN MALAYSIA

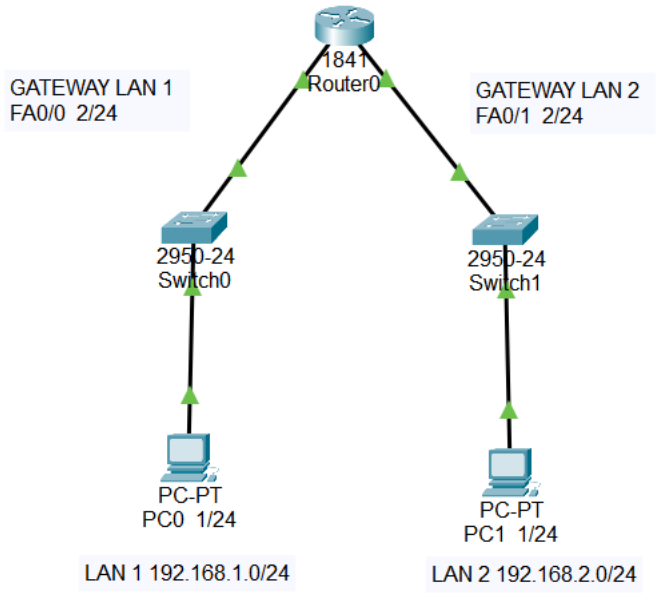
PBL 3 (LAB 7)

DAT21502 DATA COMMUNICATION

AND NETWORK

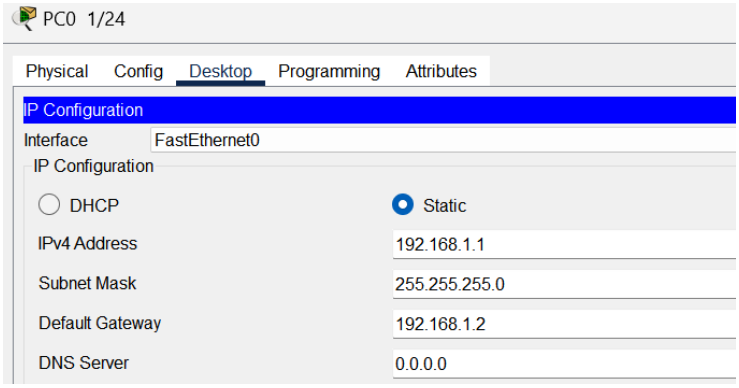
NAME	MUHAMAD IDZHAR BIN MISRI (AA211591) MUHAMAD HAZRIN HAKIM BIN HAZINOL (AA211500) MUHAMMAD SHUKRI BIN AMAN (AA211426) MUHAMMAD AIMAN MUZAKKIR BIN ROSLAN (AA212336) MUHAMMAD HAZIQ RAIMI BIN MD KHAIRUL AZAHAR (AA211471)
SECTION	6
LECTURER NAME	ENCIK MOHD KHALID BIN MOKHTAR

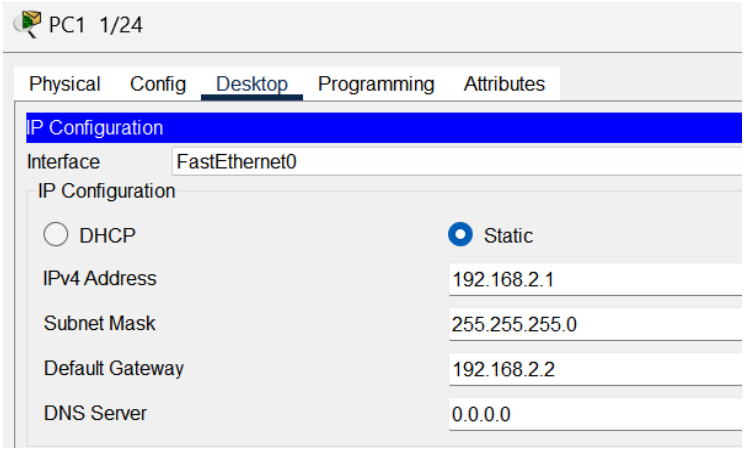
Question 1- STATIC AND DYNAMIC ROUTING PROTOCOL CONFIGURATIONS



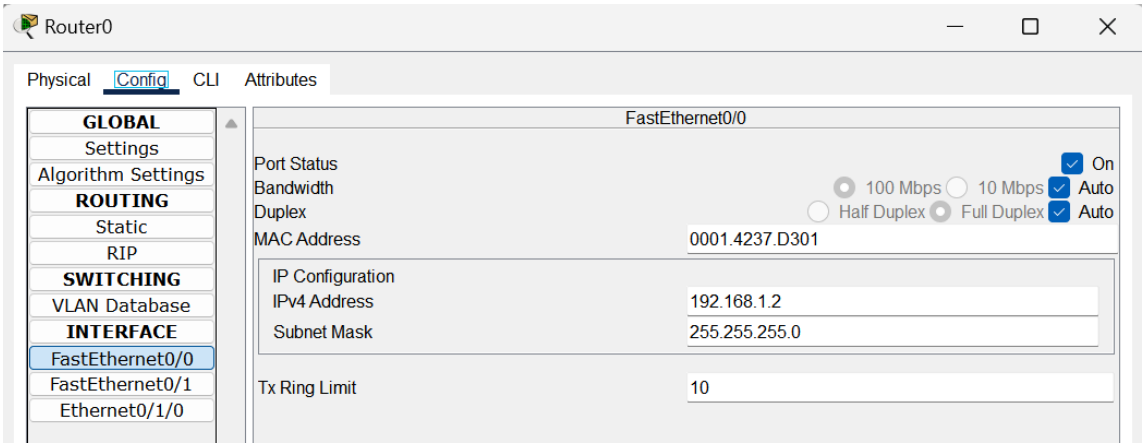
a) Assign IP addresses to the :

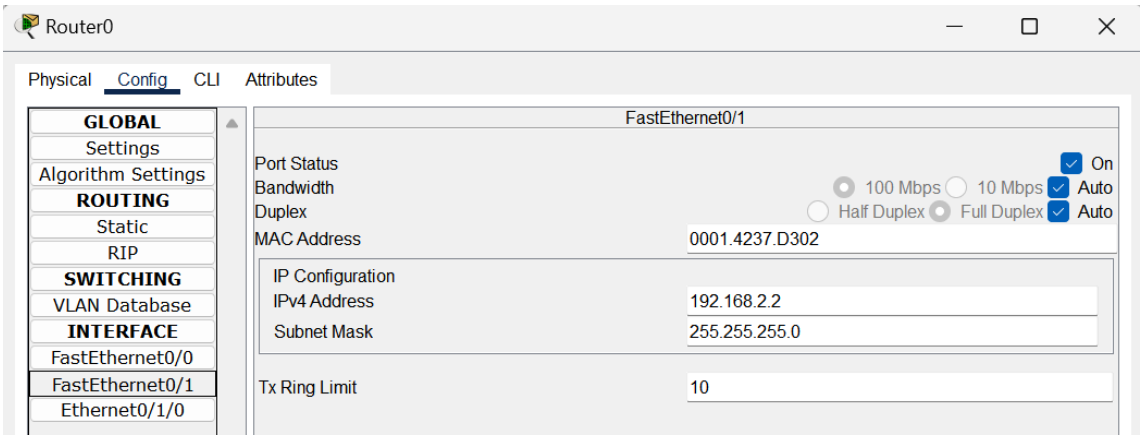
i. PCs





ii. Router interface fa0/0 and fa0/1





b) Configure router's routing protocol using :

i. Static routing protocol

```
Router#
Router#show ip route
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is not set

C    192.168.1.0/24 is directly connected, FastEthernet0/0
C    192.168.2.0/24 is directly connected, FastEthernet0/1

Router#
```

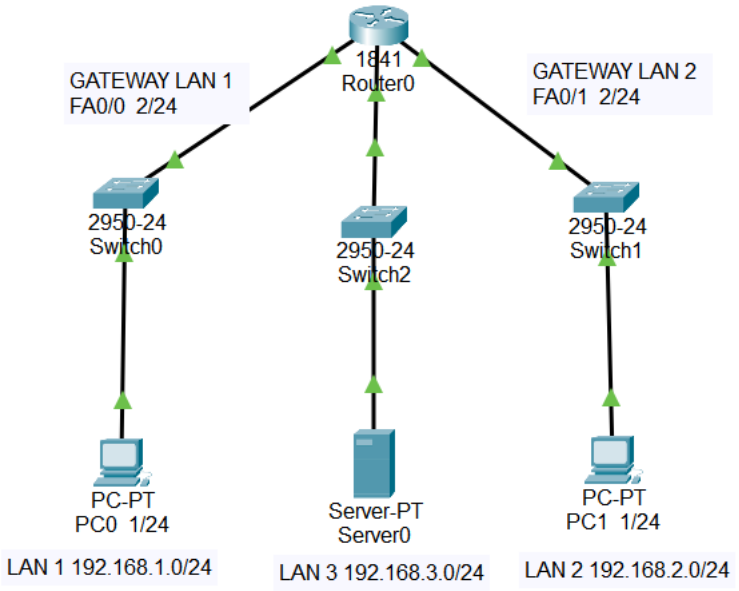
ii. Dynamic routing protocol

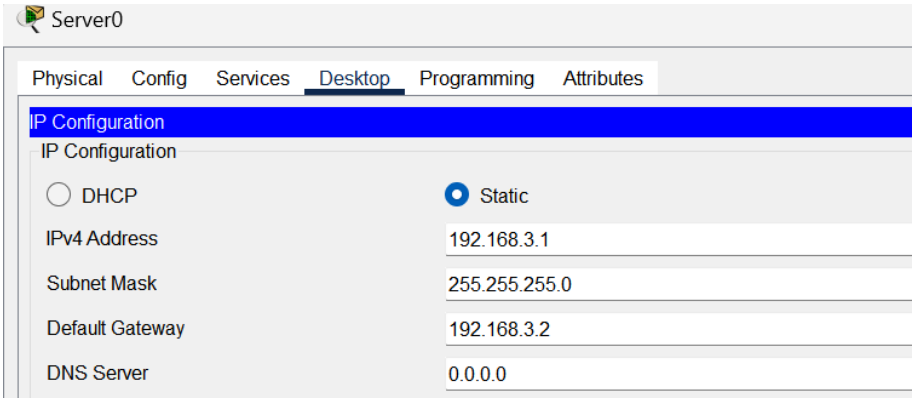
```
Router#
Router#show ip route
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is not set

C    192.168.1.0/24 is directly connected, FastEthernet0/0
C    192.168.2.0/24 is directly connected, FastEthernet0/1

Router#
```

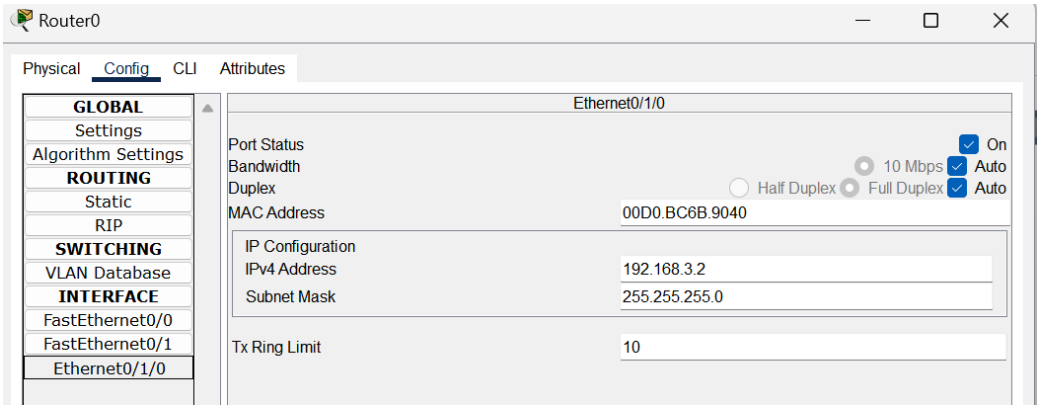
c) Test the connection between LANs.

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
	--	PC0 ...	Router0	ICMP		0.000	N	0	(edit)	(delete)
	--	PC1 ...	Router0	ICMP		0.000	N	1	(edit)	(delete)
	--	PC0 ...	PC1 1/24	ICMP		0.000	N	2	(edit)	(delete)

d) Add one server using a new LAN and attached to the Router. Configure the router so that all PCs is should be able to access the server.



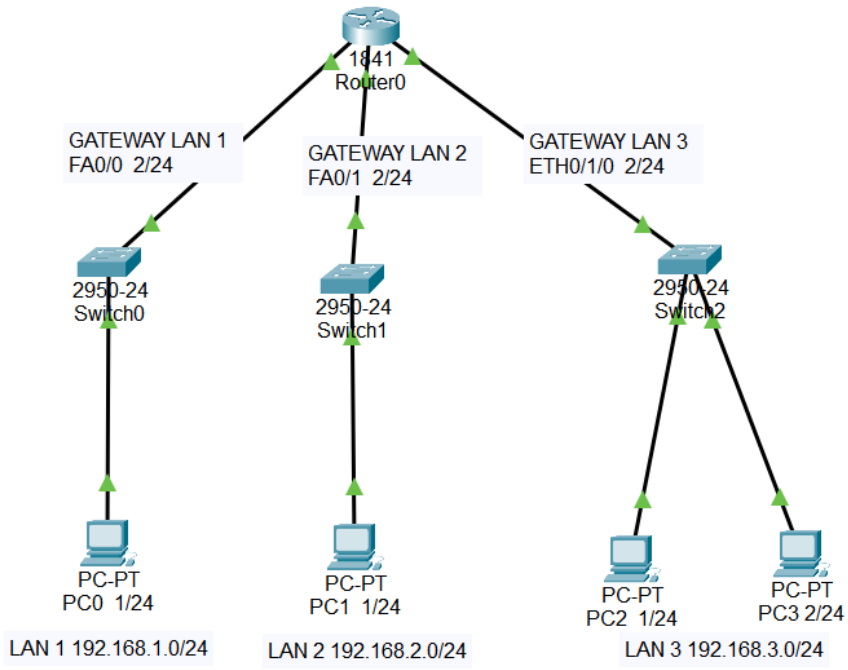


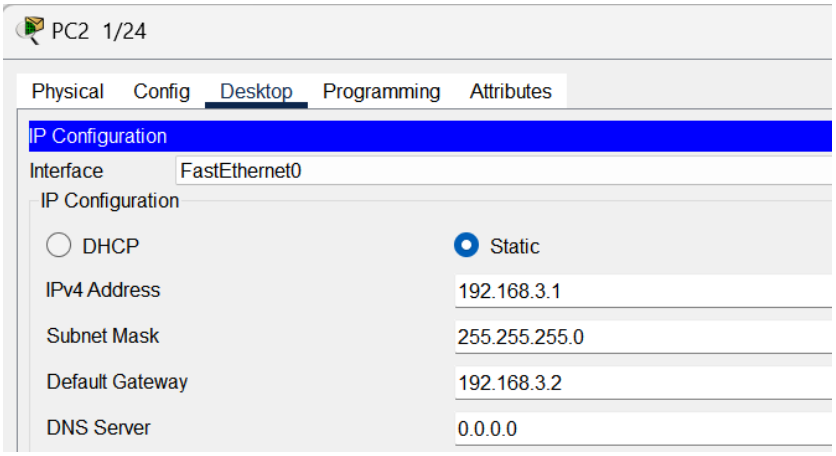


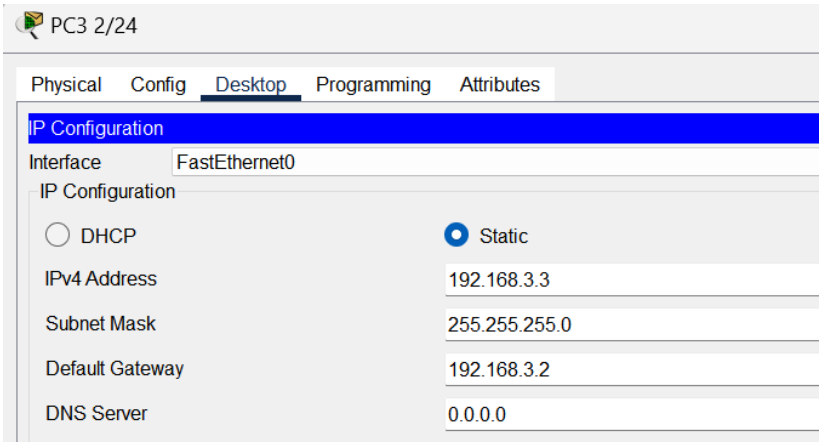
Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
	Successful	PC0 ...	Server0	ICMP		0.000	N	0	(edit)	(delete)
	Successful	PC1 ...	Server0	ICMP		0.000	N	1	(edit)	(delete)
	Successful	Router0	Server0	ICMP		0.000	N	2	(edit)	(delete)

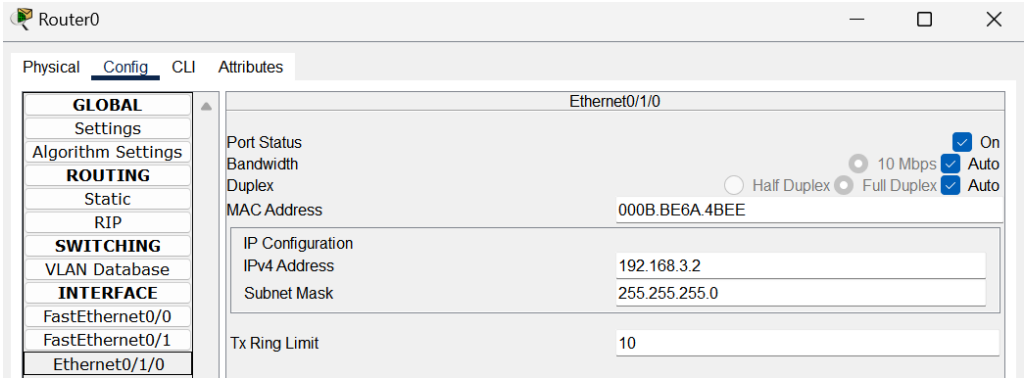
Question 2 – ROUTING BETWEEN VLAN

a) Add network in **Question1** with a new network having a switch and two PCs name the network as LAN3 and configure the router again so that all PCs is connected to each other.









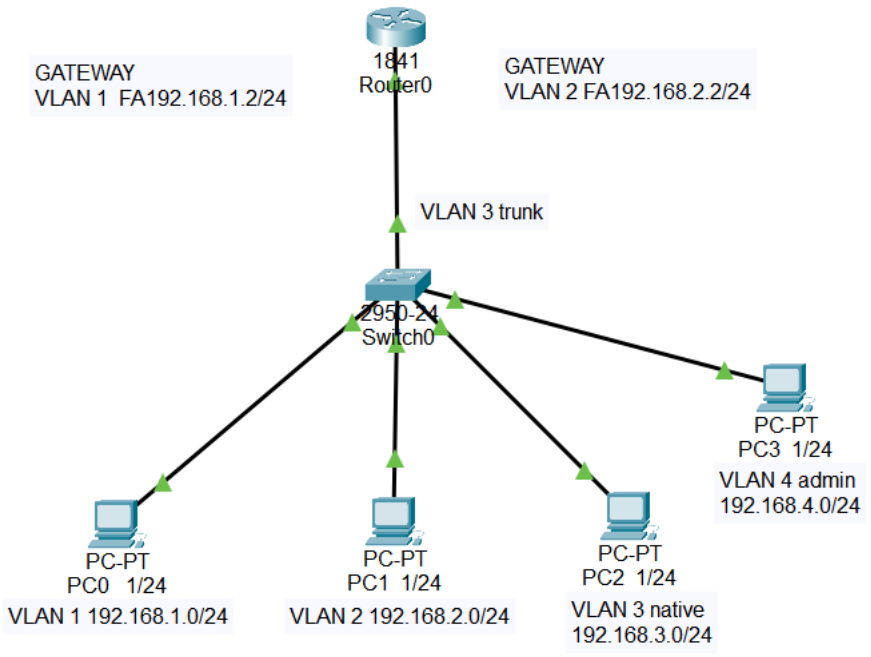
b) Test the connection between LANs. Also test the connection to the server

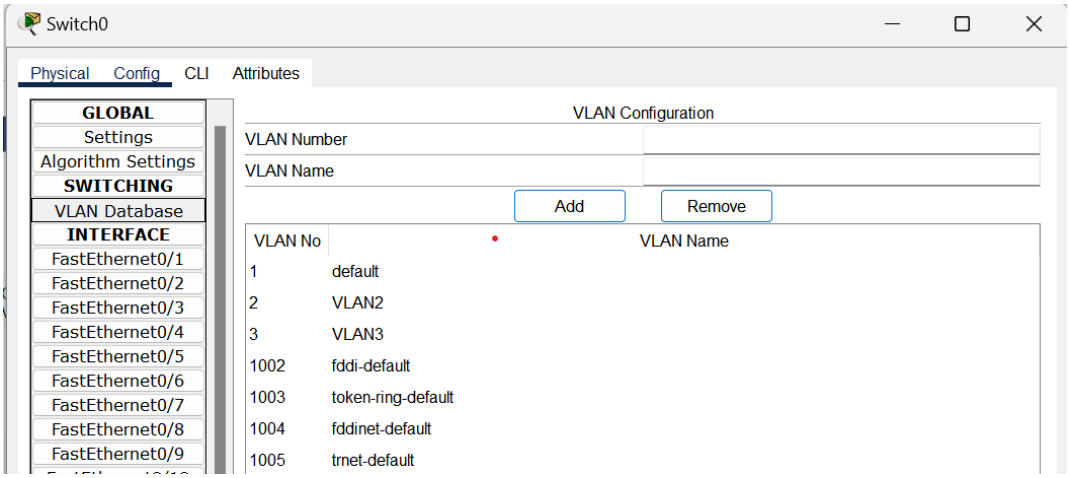
Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
	Successful	PC2 ...	Router0	ICMP		0.000	N	0	(edit)	(delete)
	Successful	PC3 ...	Router0	ICMP		0.000	N	1	(edit)	(delete)
	Successful	PC1 ...	PC2 1/24	ICMP		0.000	N	2	(edit)	(delete)
	Successful	PC0 ...	PC3 2/24	ICMP		0.000	N	3	(edit)	(delete)

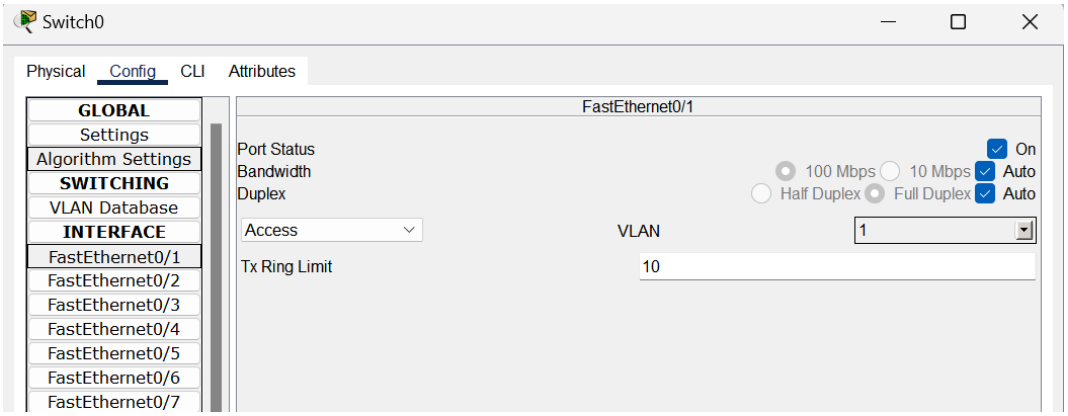
Question 3 – VLAN SUB-INTERFACE

An organization has four VLANs, three VLANs capable of running a CISCO dot1Q protocol and one native VLAN as shown in figure below. Do;

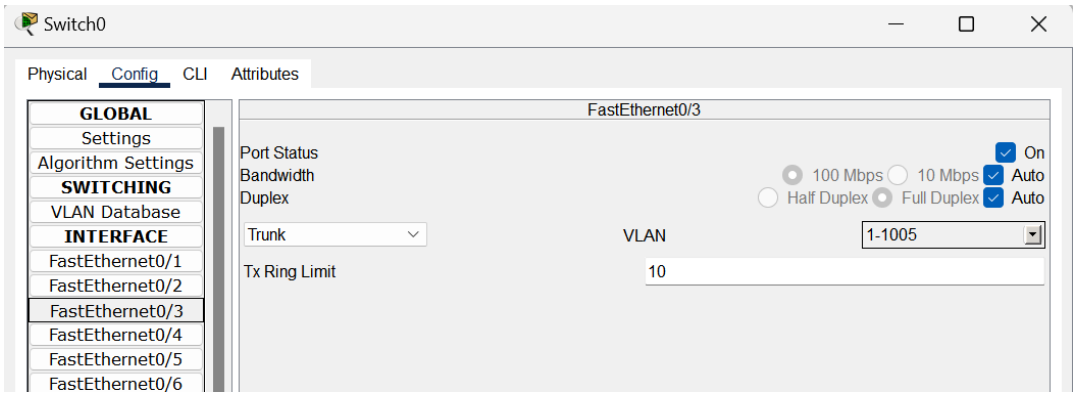
a) Switch vlans configuration



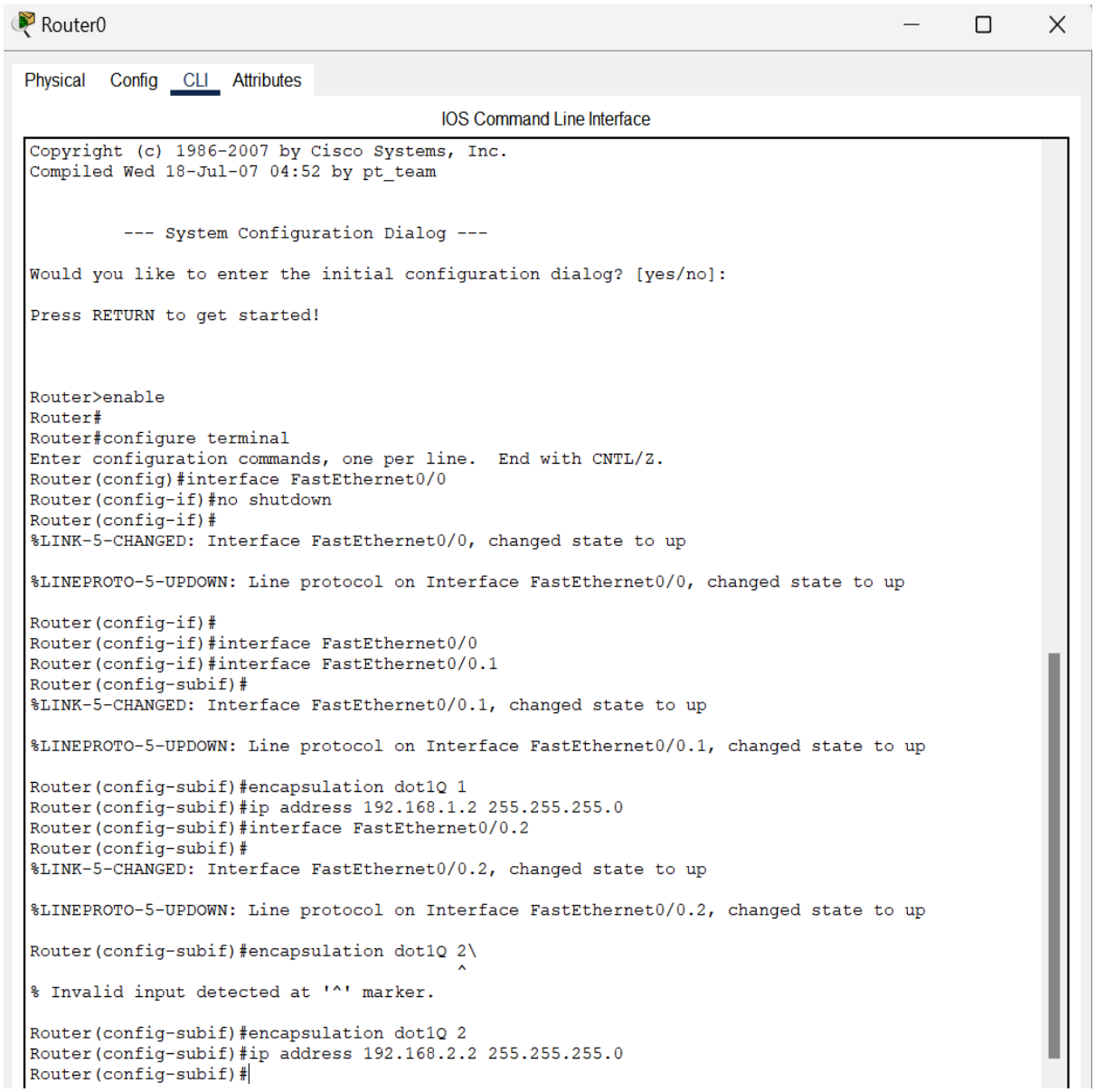



Switch0
Physical
Config
CLI
Attributes
GLOBAL
Settings
Algorithm Settings
SWITCHING
VLAN Database
INTERFACE
FastEthernet0/1
FastEthernet0/2
FastEthernet0/3
FastEthernet0/4
FastEthernet0/5
FastEthernet0/6
FastEthernet0/7
FastEthernet0/1
Port Status
On
Bandwidth
100 Mbps
10 Mbps
Auto
Duplex
Half Duplex
Full Duplex
Auto
Access
VLAN
1
Tx Ring Limit
10


Switch0
Physical
Config
CLI
Attributes
GLOBAL
Settings
Algorithm Settings
SWITCHING
VLAN Database
INTERFACE
FastEthernet0/1
FastEthernet0/2
FastEthernet0/3
FastEthernet0/4
FastEthernet0/5
FastEthernet0/6
FastEthernet0/2
Port Status
On
Bandwidth
100 Mbps
10 Mbps
Auto
Duplex
Half Duplex
Full Duplex
Auto
Access
VLAN
2
Tx Ring Limit
10


Switch0
Physical
Config
CLI
Attributes
GLOBAL
Settings
Algorithm Settings
SWITCHING
VLAN Database
INTERFACE
FastEthernet0/1
FastEthernet0/2
FastEthernet0/3
FastEthernet0/4
FastEthernet0/5
FastEthernet0/6
FastEthernet0/3
Port Status
On
Bandwidth
100 Mbps
10 Mbps
Auto
Duplex
Half Duplex
Full Duplex
Auto
Trunk
VLAN
1-1005
Tx Ring Limit
10

b) Router trunking protocol configuration, given that the IP for the vlan subinterface is the gateway for its vlans



c) Test connection between vlans.

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
	Failed	PC2 ...	PC1 1/24	ICMP		0.000	N	0	(edit)	(delete)
	Successful	PC0 ...	Router0	ICMP		0.000	N	1	(edit)	(delete)
	Successful	PC1 ...	Router0	ICMP		0.000	N	2	(edit)	(delete)
	Successful	PC0 ...	PC1 1/24	ICMP		0.000	N	3	(edit)	(delete)