M T W T F S S
Page No.
Date
YOUVA

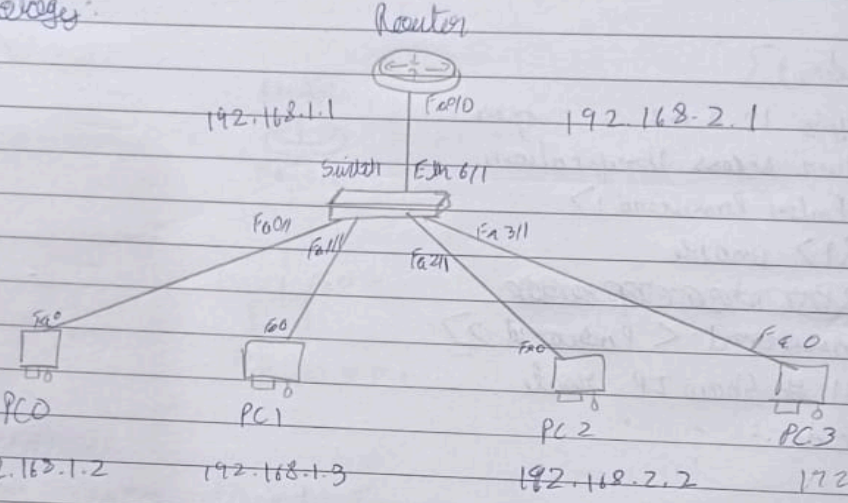
18/12/24

Exp -11

Q: To construct a VLAN & make the PC's communicate among a VLAN.

Aim: To construct a VLAN & understand its function.

Topology:



Procedure

1) Open Cisco packet Tracer
2) Setup the connections between the devices a drawn. Choose 1841
3) Set IP & gateway addresses to all PC's
4) Set up router for one gateways
enable → config Terminal → interface fa0/0 → IP address 192.168.1.1 255.255.255.0 → no shut → exit
5) Go to Switch config → select VLAN database
create a new VLAN (VLAN number 2, VLAN name: CSE1SE) & add
6) Go to interface ethernet 0/1 → switch to trunk
7) Go to Fa2/1 Access & VLAN (Enter VLAN number)
8) Go to Router CLI

→

9) Vlan database → Vlan 2 name CCEise → exit.
10) Config terminal → interface fa 0/0.1 →
encapsulation dot1q 2 → ip address 192.168.2.1
255.255.255.0 → No shut → exit → exit.
11) Enter Show IP Route
12) Ping from one device to the other

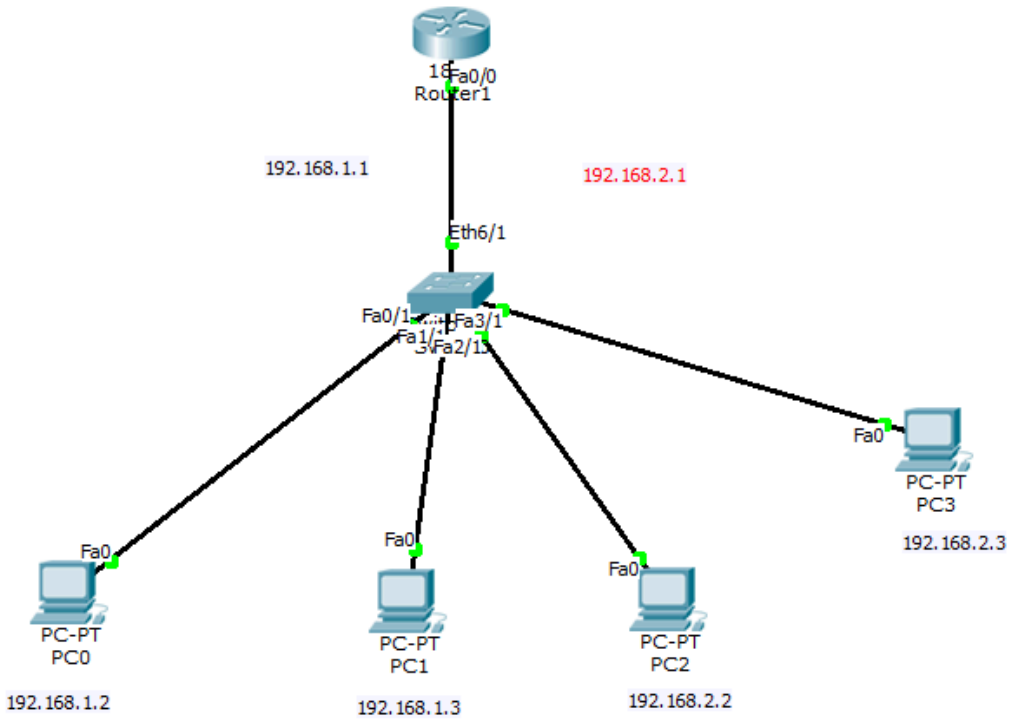
Result
show ip route
C 192.168.1.0/24 is directly connected, Fa 0/0
C 192.168.2.0/24 . . . . . , Fa 0/0.1
PC0
Ping 192.168.2.2
pinging 192.168.2.2 with 32 bytes of data:
Request timed out
Reply from 192.168.2.2 bytes=32, time=2ms TTL=127
(
(

ping statistics

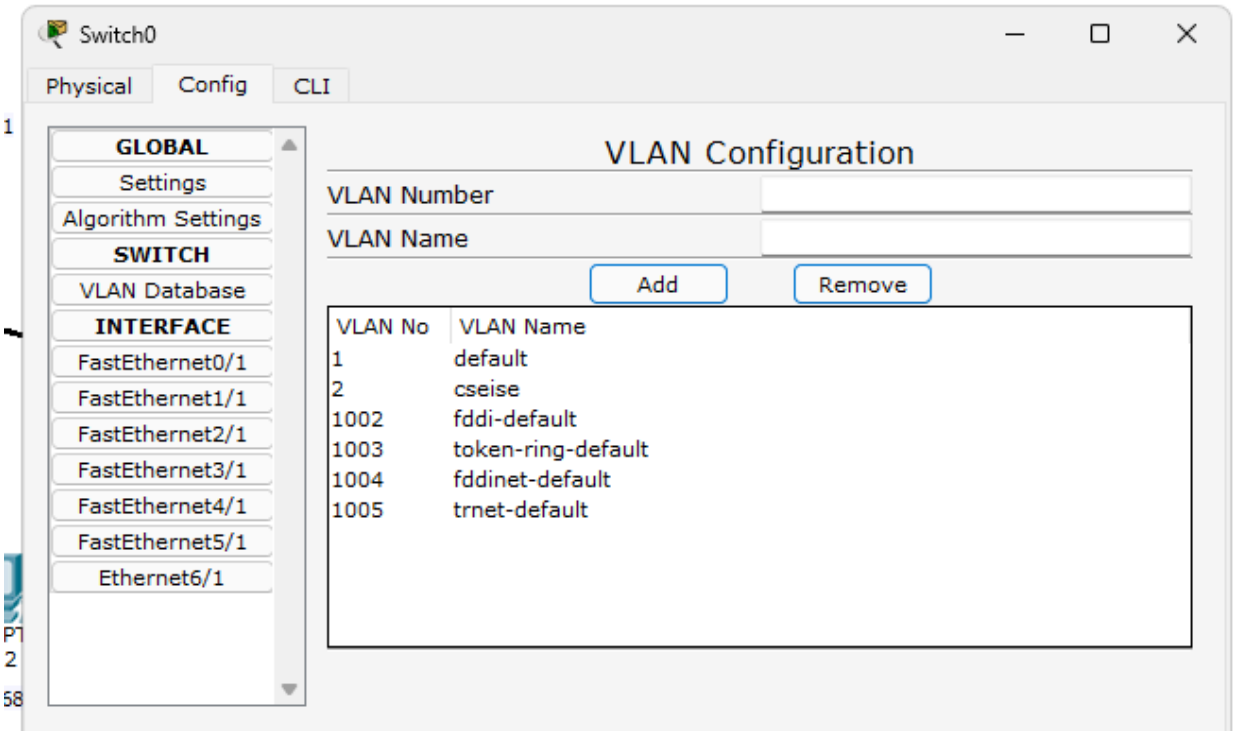
same for other devices

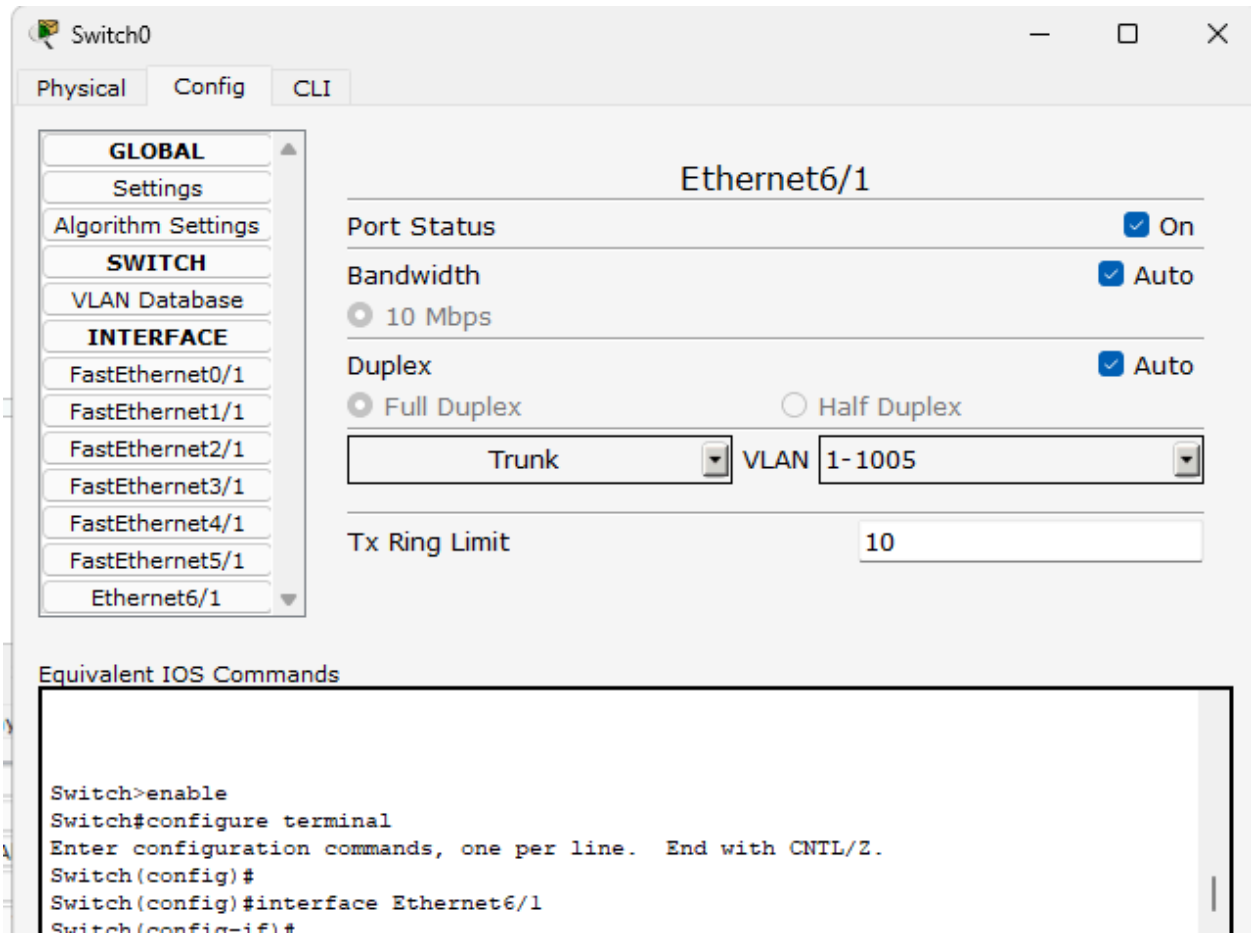
Observation:
router) The VLAN experiment involves creating and configuring VLANs to segment a network, assigning IP's to devices for seamless intra-VLAN communications & using dot1q encapsulation for inter-VLAN connectivity to communicate through a single trunk link. This experiment highlights the importance of VLAN's in optimizing & managing modern network effectively.

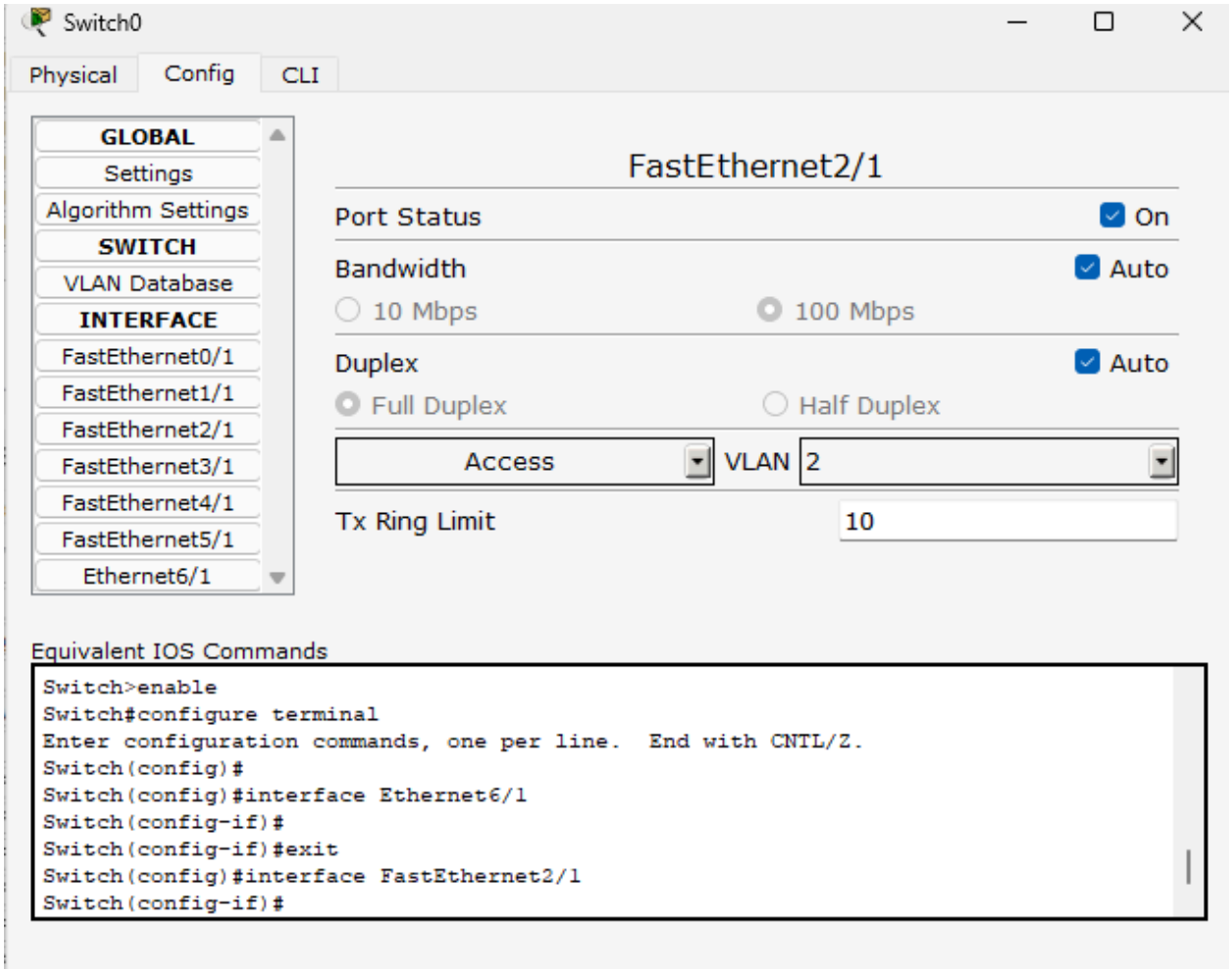
26/12/24

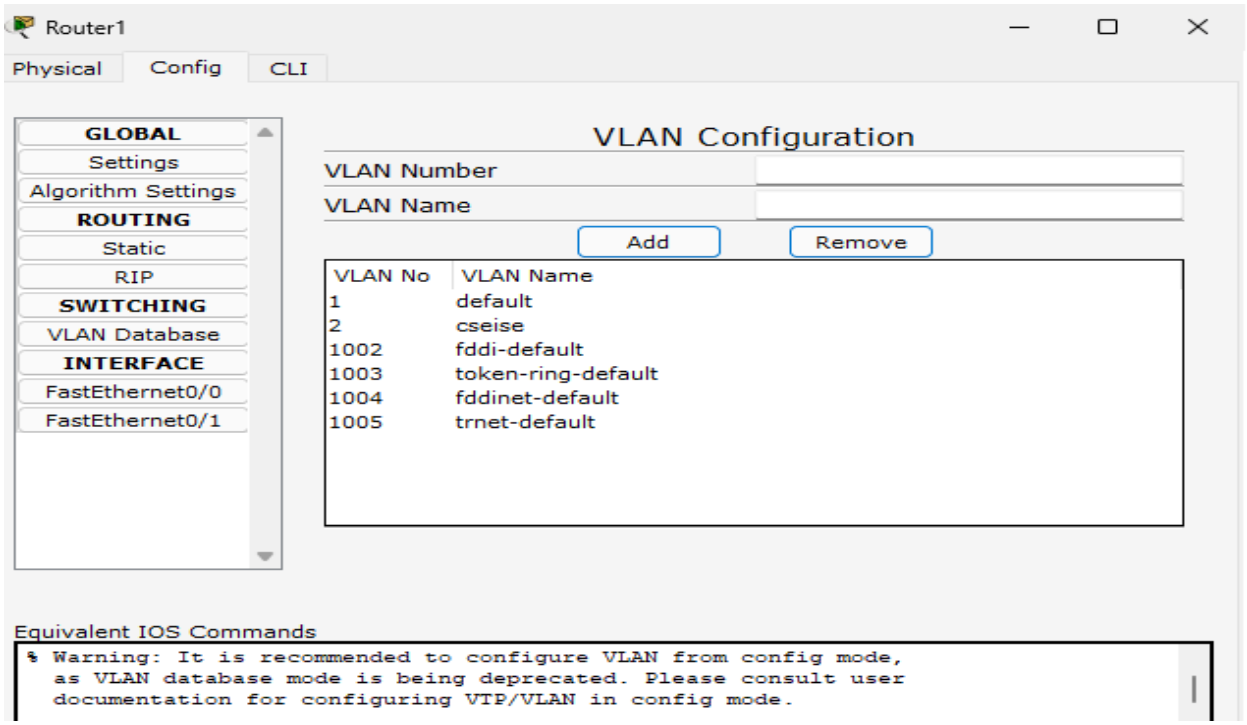



```
Router>enable
Router#config terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#interface fa0/0
Router(config-if)#ip address 192.168.1.1 255.255.255.0
Router(config-if)#no shut

Router(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up

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

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


Switch0
Physical
Config
CLI
GLOBAL
Settings
Algorithm Settings
SWITCH
VLAN Database
INTERFACE
FastEthernet0/1
FastEthernet1/1
FastEthernet2/1
FastEthernet3/1
FastEthernet4/1
FastEthernet5/1
Ethernet6/1
VLAN Configuration
VLAN Number
VLAN Name
Add
Remove
VLAN No
VLAN Name
1 default
2 cseise
1002 fddi-default
1003 token-ring-default
1004 fddinet-default
1005 trnet-default

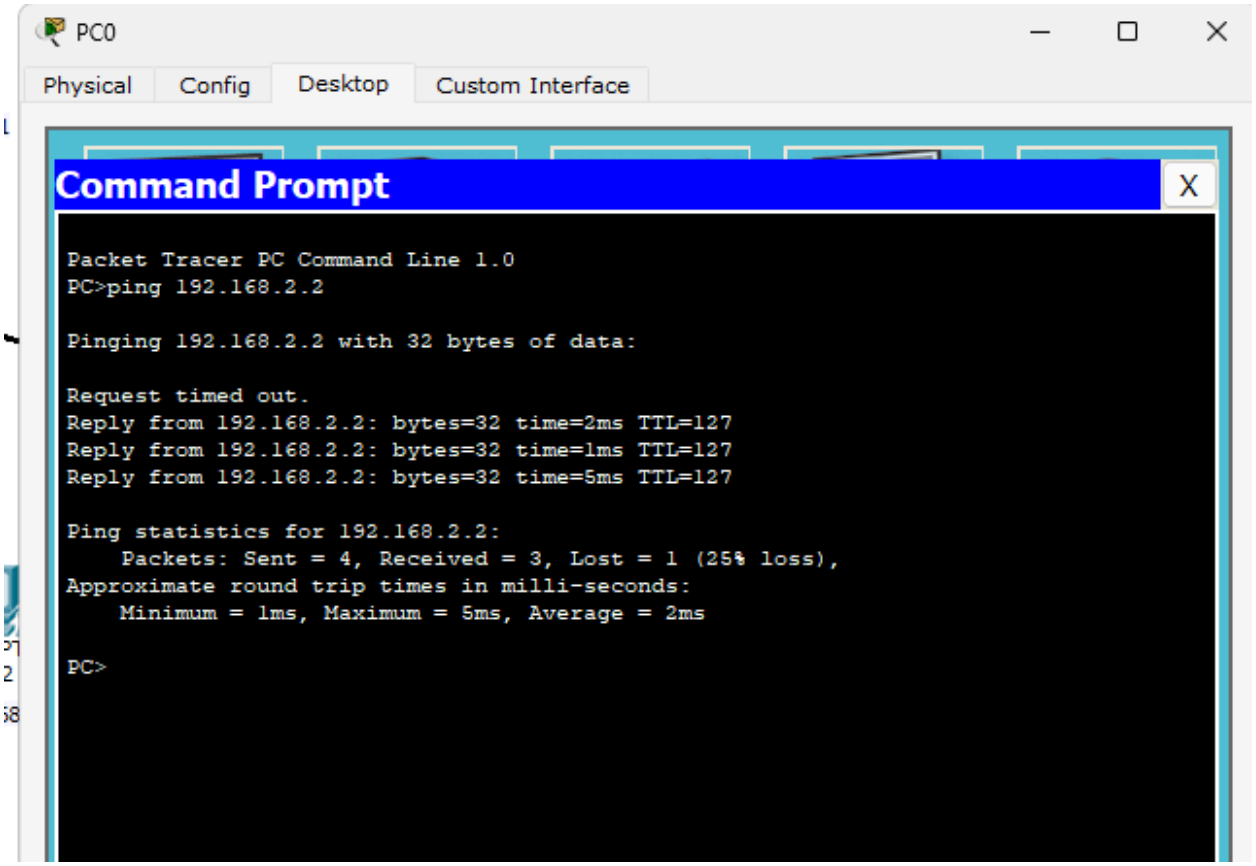

Switch0
Physical
Config
CLI
GLOBAL
Settings
Algorithm Settings
SWITCH
VLAN Database
INTERFACE
FastEthernet0/1
FastEthernet1/1
FastEthernet2/1
FastEthernet3/1
FastEthernet4/1
FastEthernet5/1
Ethernet6/1
Ethernet6/1
Port Status
On
Bandwidth
Auto
10 Mbps
Duplex
Auto
Full Duplex
Half Duplex
Trunk
VLAN
1-1005
Tx Ring Limit
10
Equivalent IOS Commands
Switch>enable
Switch#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#
Switch(config)#interface Ethernet6/1

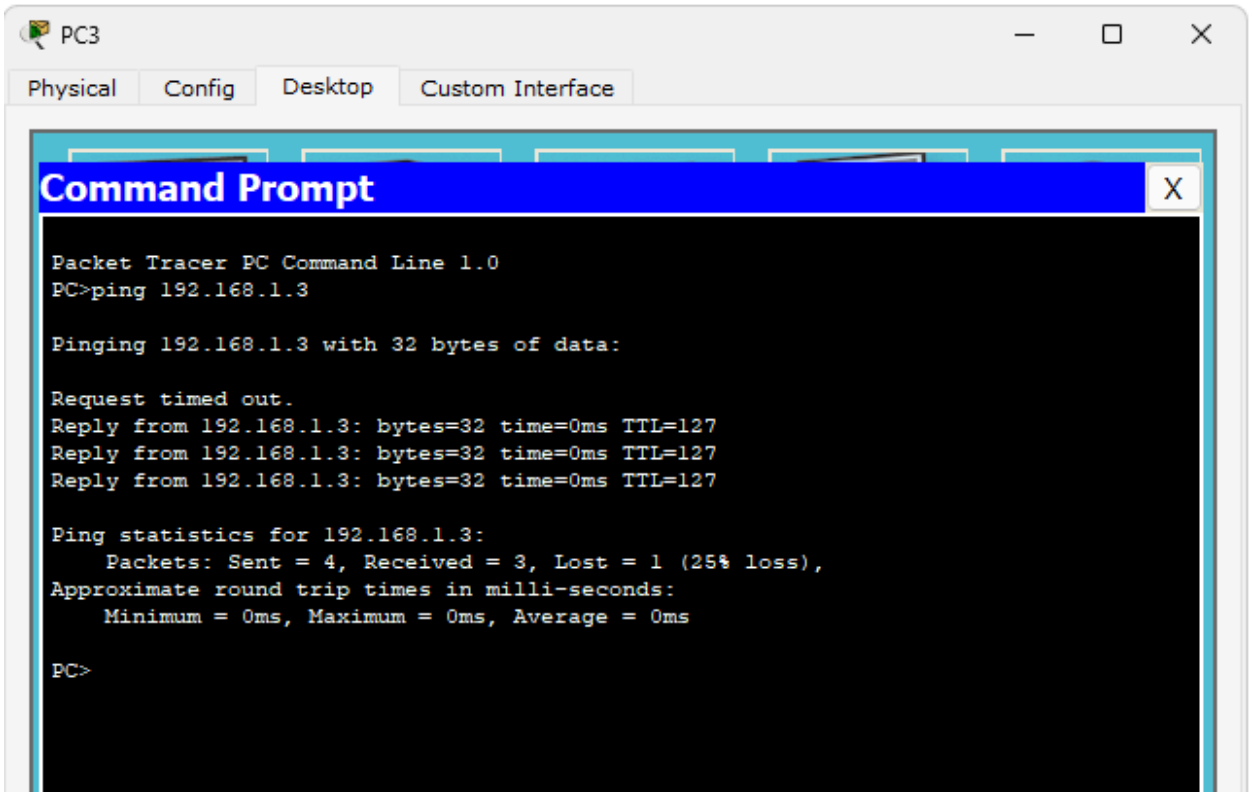

Switch0
Physical
Config
CLI
GLOBAL
Settings
Algorithm Settings
SWITCH
VLAN Database
INTERFACE
FastEthernet0/1
FastEthernet1/1
FastEthernet2/1
FastEthernet3/1
FastEthernet4/1
FastEthernet5/1
Ethernet6/1
FastEthernet2/1
Port Status
On
Bandwidth
Auto
10 Mbps
100 Mbps
Duplex
Auto
Full Duplex
Half Duplex
Access
VLAN
2
Tx Ring Limit
10
Equivalent IOS Commands
Switch>enable
Switch#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#
Switch(config)#interface Ethernet6/1
Switch(config-if)#
Switch(config-if)#exit
Switch(config)#interface FastEthernet2/1
Switch(config-if)#


Router1
Physical
Config
CLI
GLOBAL
Settings
Algorithm Settings
ROUTING
Static
RIP
SWITCHING
VLAN Database
INTERFACE
FastEthernet0/0
FastEthernet0/1
VLAN Configuration
VLAN Number
VLAN Name
Add
Remove
VLAN No
VLAN Name
1 default
2 cseise
1002 fddi-default
1003 token-ring-default
1004 fddinet-default
1005 trnet-default
Equivalent IOS Commands
% Warning: It is recommended to configure VLAN from config mode,
as VLAN database mode is being deprecated. Please consult user
documentation for configuring VTP/VLAN in config mode.

```
Router#vlan database
% Warning: It is recommended to configure VLAN from config mode,
  as VLAN database mode is being deprecated. Please consult user
  documentation for configuring VTP/VLAN in config mode.

Router(vlan)#vlan 2 name cseise
VLAN 2 modified:
    Name: cseise
Router(vlan)#
Router(vlan)#exit
APPLY completed.
Exiting....
Router#config terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#interface fa0/0.1
Router(config-subif)#
%LINK-5-CHANGED: Interface FastEthernet0/0.1, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0.1, changed state
 to up

Router(config-subif)#encapsulation dot1q 2
Router(config-subif)#ip address 192.168.2.1 255.255.255.0
Router(config-subif)#no shut
Router(config-subif)#exit
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console

Router#
Router#vlan database
% Warning: It is recommended to configure VLAN from config mode,
  as VLAN database mode is being deprecated. Please consult user
  documentation for configuring VTP/VLAN in config mode.

Router(vlan)#
```

```
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, FastEthernet0/0.1
Router#
```


PC0
Physical
Config
Desktop
Custom Interface
Command Prompt
X
Packet Tracer PC Command Line 1.0
PC>ping 192.168.2.2
Pinging 192.168.2.2 with 32 bytes of data:
Request timed out.
Reply from 192.168.2.2: bytes=32 time=2ms TTL=127
Reply from 192.168.2.2: bytes=32 time=1ms TTL=127
Reply from 192.168.2.2: bytes=32 time=5ms TTL=127
Ping statistics for 192.168.2.2:
Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
Minimum = 1ms, Maximum = 5ms, Average = 2ms
PC>


PC3
Physical
Config
Desktop
Custom Interface
Command Prompt
X
Packet Tracer PC Command Line 1.0
PC>ping 192.168.1.3
Pinging 192.168.1.3 with 32 bytes of data:
Request timed out.
Reply from 192.168.1.3: bytes=32 time=0ms TTL=127
Reply from 192.168.1.3: bytes=32 time=0ms TTL=127
Reply from 192.168.1.3: bytes=32 time=0ms TTL=127
Ping statistics for 192.168.1.3:
Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 0ms, Average = 0ms
PC>