Experiment-5

Implement VLAN and VLAN Trunking Protocol

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Branch: BE CSE
Section/Group: IOT1/A
Semester: 4
Date of Performance:0 4/14/21
Subject Name: Computer Networks.
Subject Code: CSP 293

1. Aim/Overview of the practical:

Implement VLAN and VLAN Trunking Protocol

2. Tasks to be done:

(A)Implement VLAN and VLAN Trunking Protocol

3. Apparatus: (Mention the steps for each and every task) Laptop/PC with Cisco packet Tracer Software.

4. Algorithm/Flowchart (For programming based labs): Nil

5. Theme/Interests definition(For creative domains):

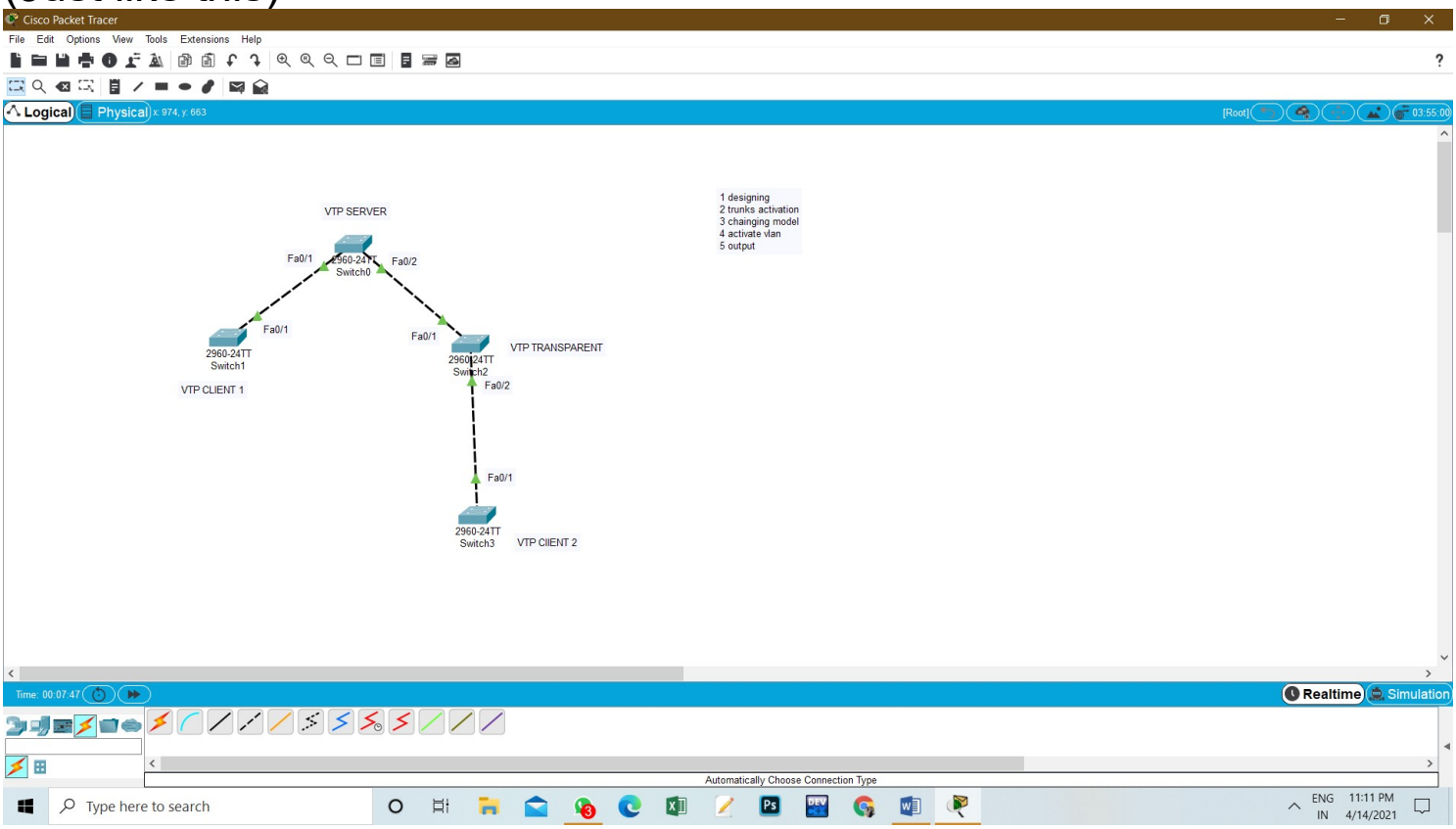
A virtual LAN (VLAN) is any broadcast domain that is partitioned and isolated in a computer network at the data link layer (OSI layer 2). LAN is the abbreviation for local area network and in this context virtual refers to a physical object recreated and altered by additional logic.

When users move their workstations, administrators don't need to reconfigure the network or change VLAN groups.

6. Steps for experiment/practical:

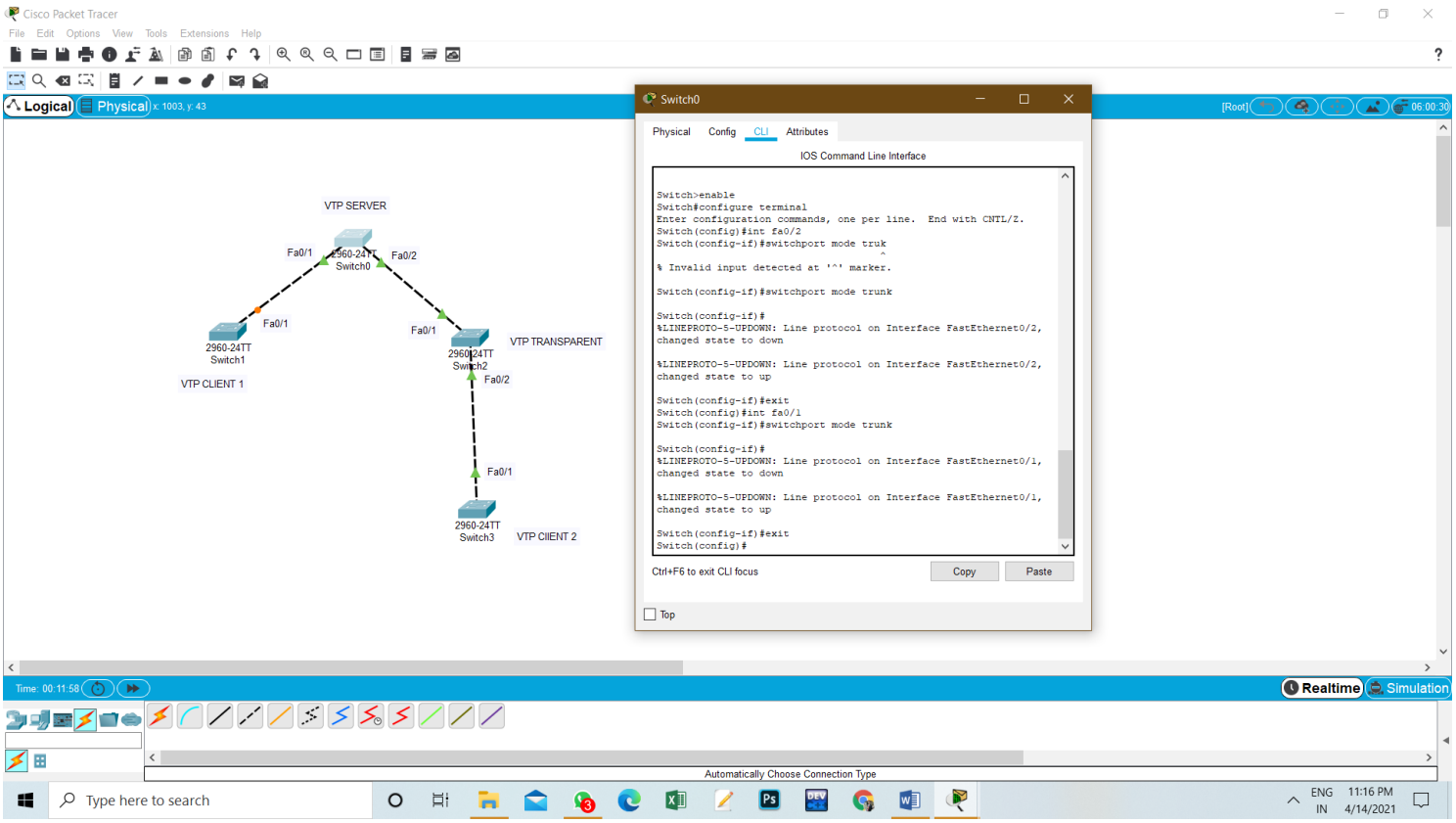
Step 1: Start
Step 2: Design a network with 4 Switches where one switch will act like server, 2 as Clients and remaining one as Transparent.

(Just like this)

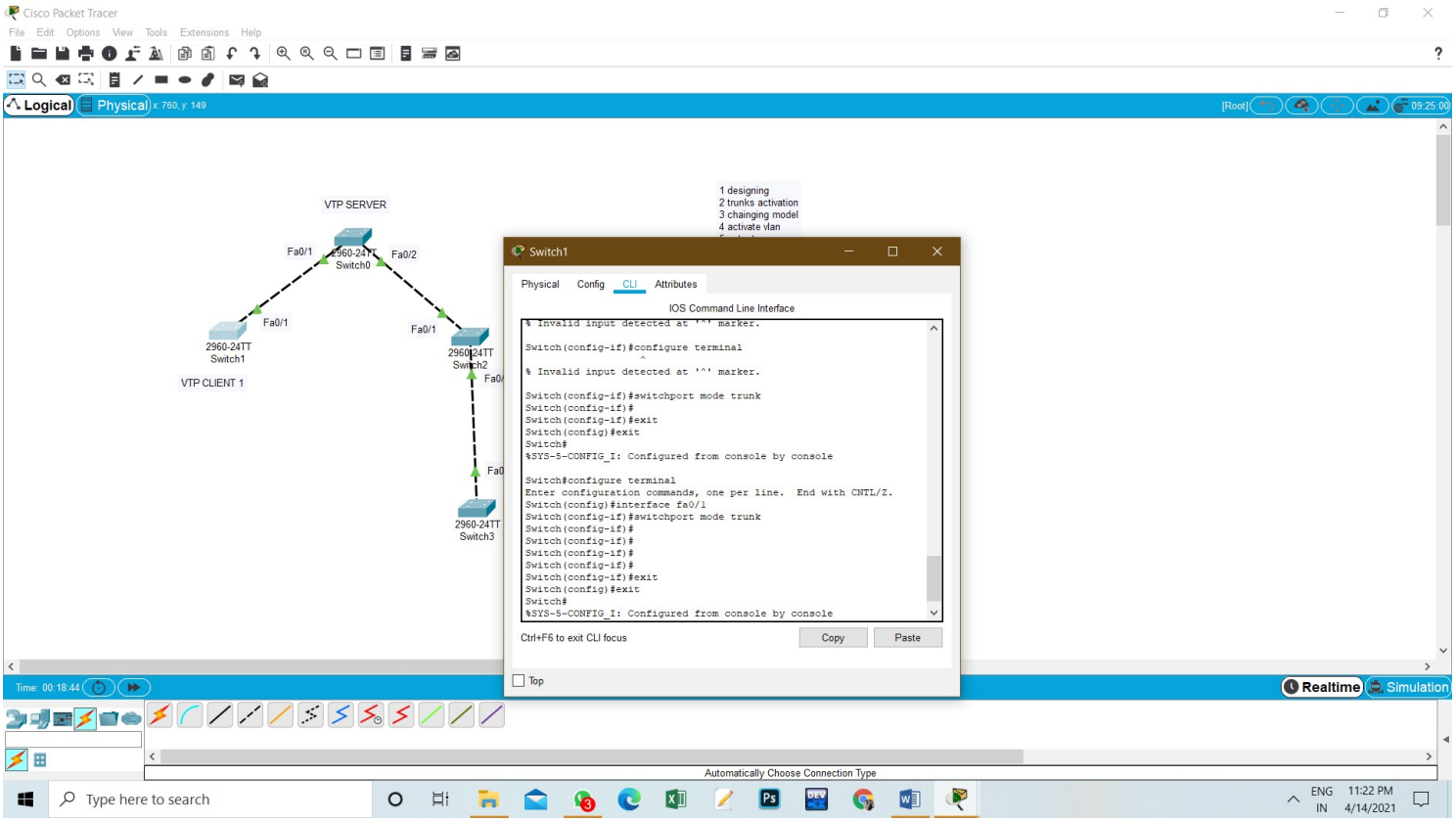


Step 3: Then activate all the trunks one by one as shown below.

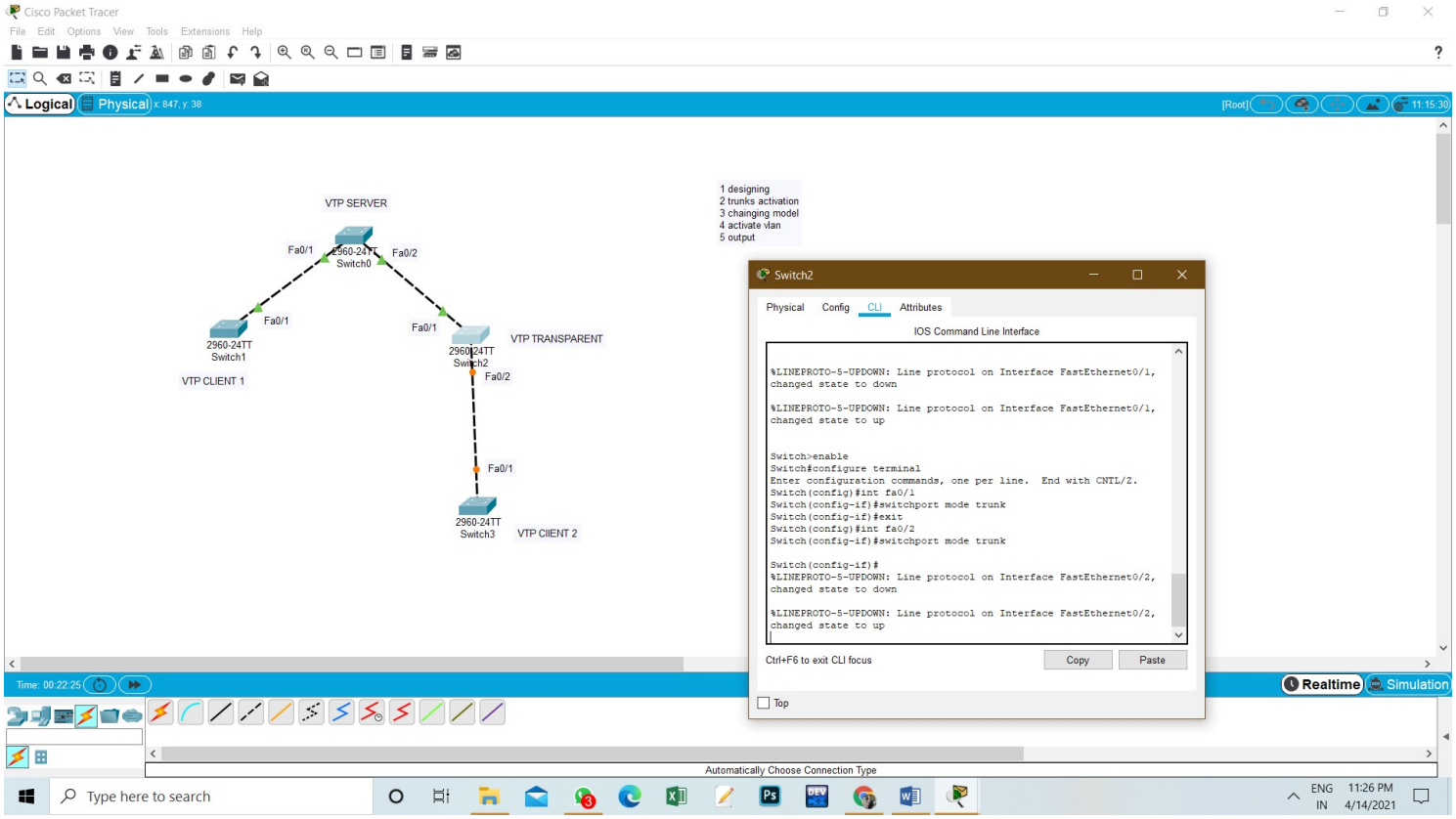
Switch0 (Server):



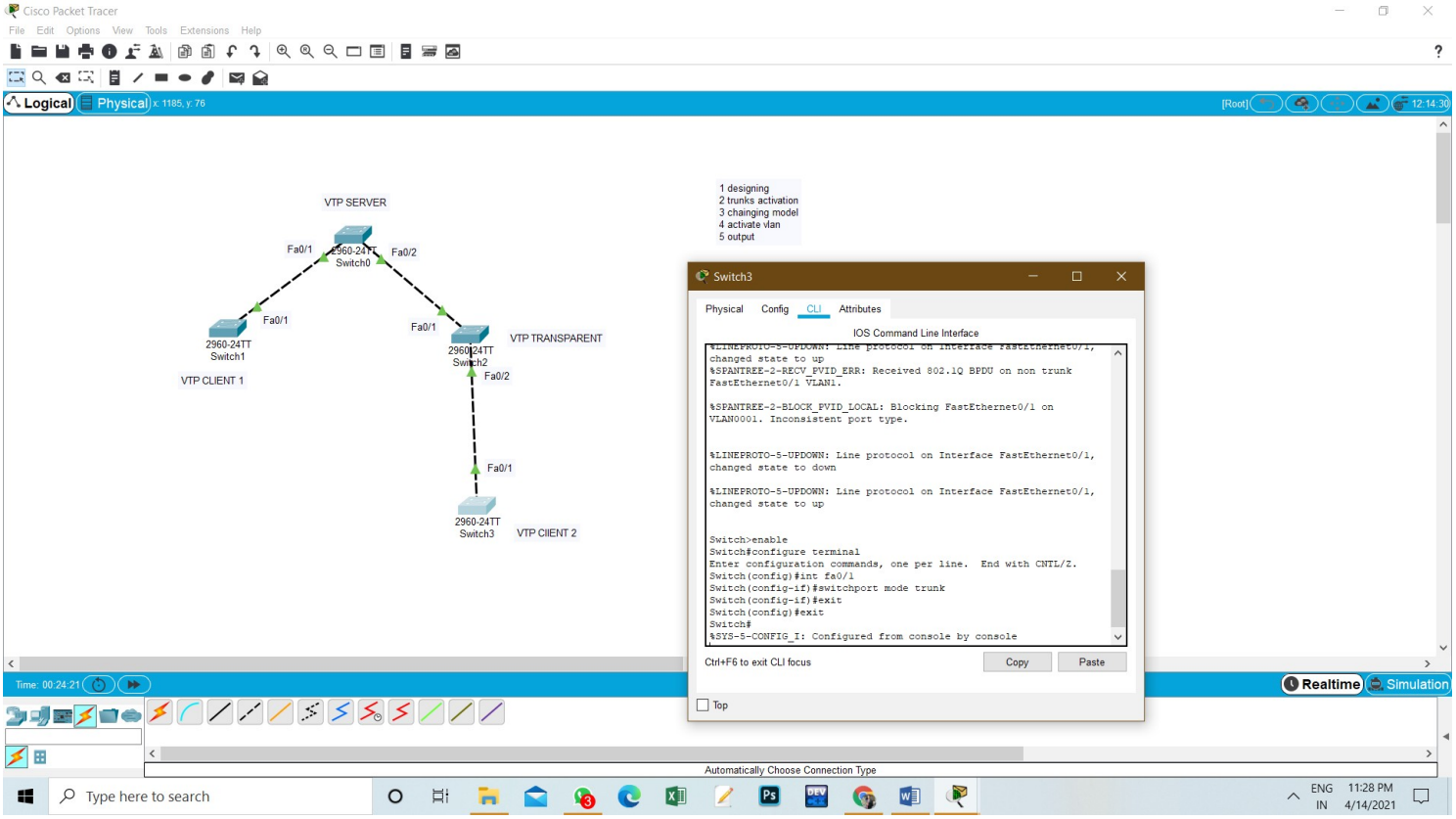
Switch 1(Client 1):



Switch 2 (Transparent):

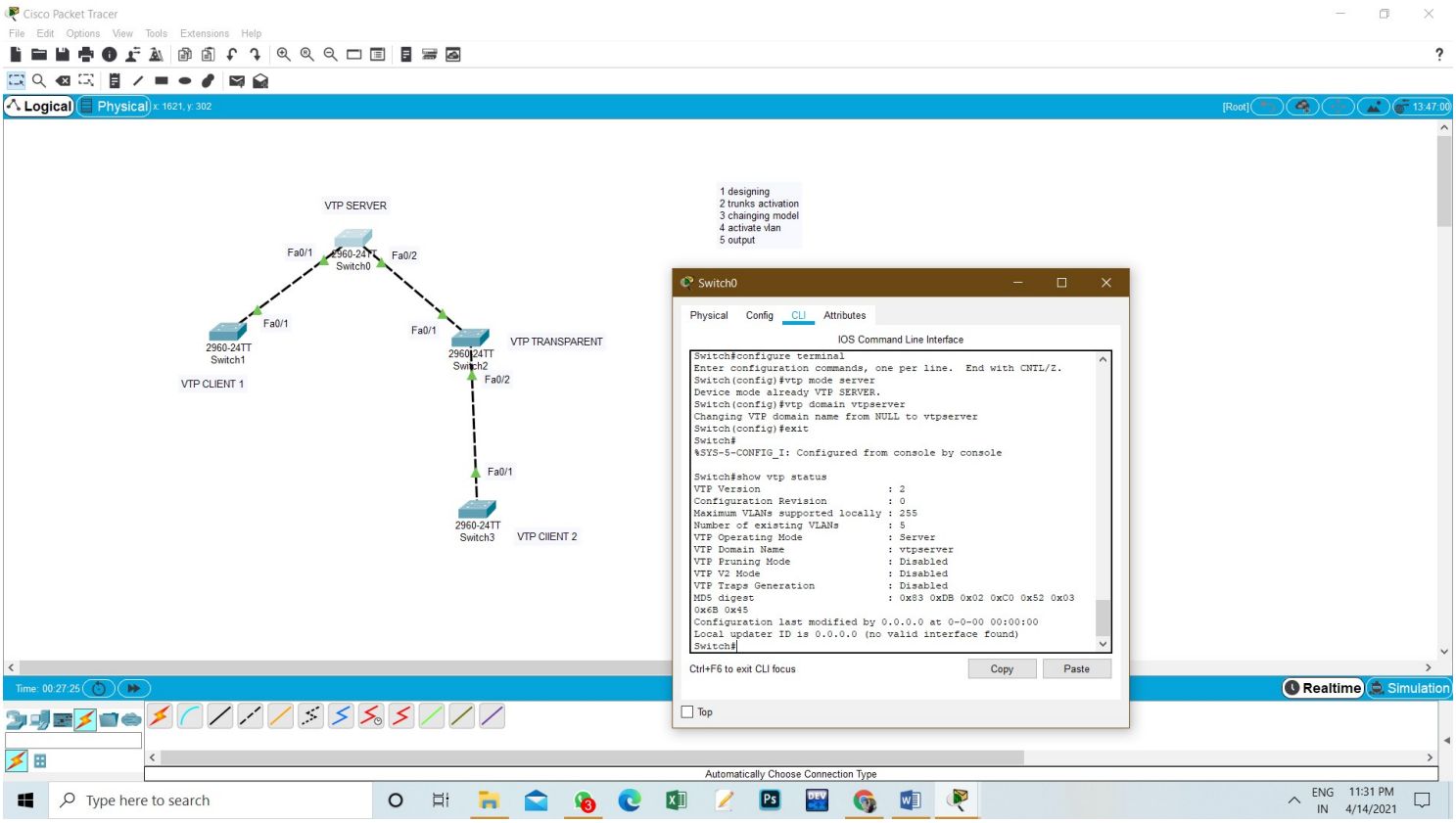


Switch 3 (Client 2):



Step 4: Now Change the VTP modes of all the switches. Switch0 to Server(as default), Switch 1 and Switch 3 as Clients, and Switch 2 as Transparent.

Switch 0:


Cisco Packet Tracer
Logical
Physical
VTP SERVER
Fa0/1
2960-24TT
Switch0
Fa0/2
Fa0/1
2960-24TT
Switch1
VTP CLIENT 1
Fa0/1
2960-24TT
Switch2
VTP TRANSPARENT
Fa0/2
Fa0/1
2960-24TT
Switch3
VTP CliENT 2
1 designing
2 trunks activation
3 chainging model
4 activate vlan
5 output
Switch0
Physical
Config
CLI
Attributes
IOS Command Line Interface
Switch#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#vtp mode server
Device mode already VTP SERVER.
Switch(config)#vtp domain vtpserver
Changing VTP domain name from NULL to vtpserver
Switch(config)#exit
Switch#
%SYS-5-CONFIG_I: Configured from console by console
Switch#show vtp status
VTP Version : 2
Configuration Revision : 0
Maximum VLANs supported locally : 255
Number of existing VLANs : 5
VTP Operating Mode : Server
VTP Domain Name : vtpserver
VTP Pruning Mode : Disabled
VTP V2 Mode : Disabled
VTP Traps Generation : Disabled
MD5 digest : 0x83 0xDB 0x02 0xC0 0x52 0x03
0x6B 0x45
Configuration last modified by 0.0.0.0 at 0-0-00 00:00:00
Local updater ID is 0.0.0.0 (no valid interface found)
Switch#
Ctrl+F6 to exit CLI focus
Copy
Paste
Top
Realtime
Simulation
Automatically Choose Connection Type
Type here to search
ENG
IN
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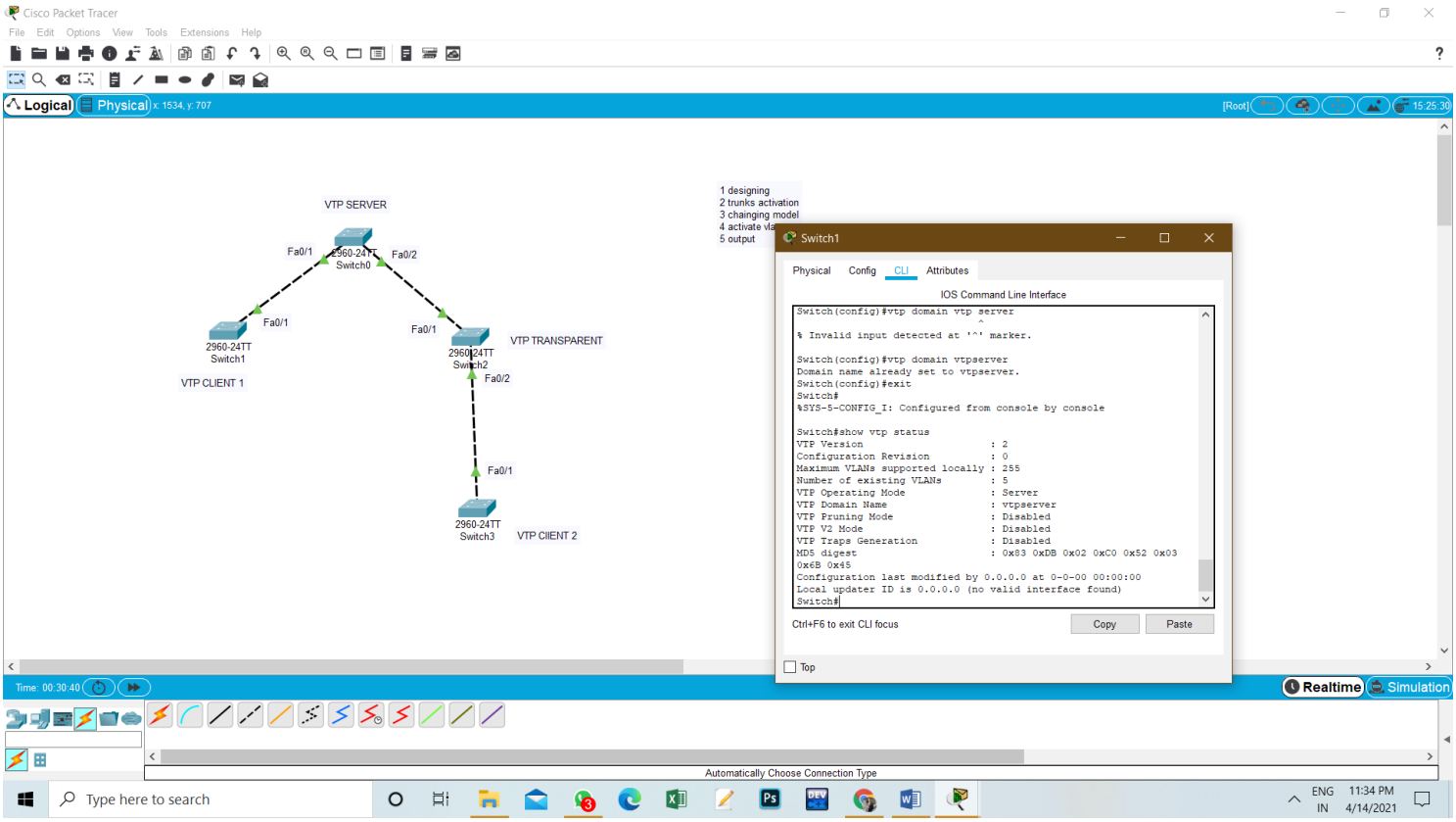
4/14/2021

Switch 1:


Cisco Packet Tracer
File Edit Options View Tools Extensions Help
Logical Physical
VTP SERVER
2960-24TT Switch0
Fa0/1
Fa0/2
Fa0/1
2960-24TT Switch1
VTP CLIENT 1
Fa0/1
2960-24TT Switch2
VTP TRANSPARENT
Fa0/2
Fa0/1
2960-24TT Switch3
VTP CllENT 2
1 designing
2 trunks activation
3 chainging model
Switch1
Physical Config CLI Attributes
IOS Command Line Interface
Switch(config)#vtp domain vtp server
% Invalid input detected at '^' marker.
Switch(config)#vtp domain vtpserver
Domain name already set to vtpserver.
Switch(config)#exit
Switch#
%SYS-5-CONFIG_I: Configured from console by console
Switch#show vtp status
VTP Version : 2
Configuration Revision : 0
Maximum VLANs supported locally : 255
Number of existing VLANs : 5
VTP Operating Mode : Server
VTP Domain Name : vtpserver
VTP Pruning Mode : Disabled
VTP V2 Mode : Disabled
VTP Traps Generation : Disabled
MD5 digest : 0x83 0xDB 0x02 0xC0 0x52 0x03
0x6B 0x45
Configuration last modified by 0.0.0.0 at 0-0-00 00:00:00
Local updater ID is 0.0.0.0 (no valid interface found)
Switch#
Ctrl+F6 to exit CLI focus
Copy
Paste
Top
Realtime
Simulation
Automatically Choose Connection Type
Type here to search
ENG IN
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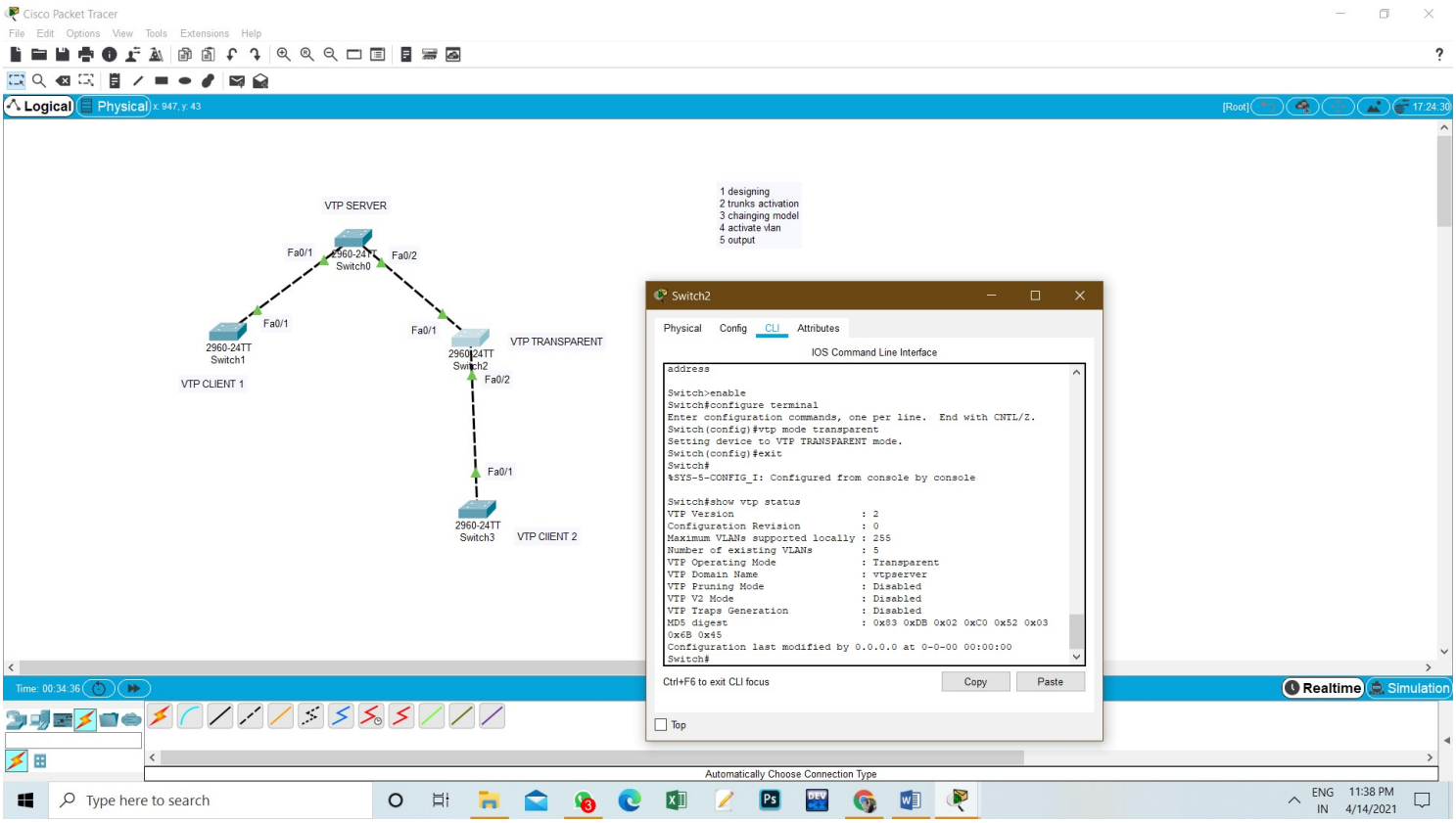
Switch 2:


Cisco Packet Tracer
Logical
Physical
VTP SERVER
Fa0/1
2960-24TT
Switch0
Fa0/2
Fa0/1
2960-24TT
Switch1
VTP CLIENT 1
Fa0/1
2960-24TT
Switch2
VTP TRANSPARENT
Fa0/2
Fa0/1
2960-24TT
Switch3
VTP CliENT 2
1 designing
2 trunks activation
3 chainging model
4 activate vlan
5 output
Switch2
Physical
Config
CLI
Attributes
IOS Command Line Interface
address
Switch>enable
Switch#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#vtp mode transparent
Setting device to VTP TRANSPARENT mode.
Switch(config)#exit
Switch#
%SYS-5-CONFIG_I: Configured from console by console
Switch#show vtp status
VTP Version : 2
Configuration Revision : 0
Maximum VLANs supported locally : 255
Number of existing VLANs : 5
VTP Operating Mode : Transparent
VTP Domain Name : vtpserver
VTP Pruning Mode : Disabled
VTP V2 Mode : Disabled
VTP Traps Generation : Disabled
MD5 digest : 0x83 0xDB 0x02 0xC0 0x52 0x03
0x6B 0x45
Configuration last modified by 0.0.0.0 at 0-0-00 00:00:00
Switch#
Ctrl+F6 to exit CLI focus
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Top
Realtime
Simulation
Automatically Choose Connection Type
Type here to search
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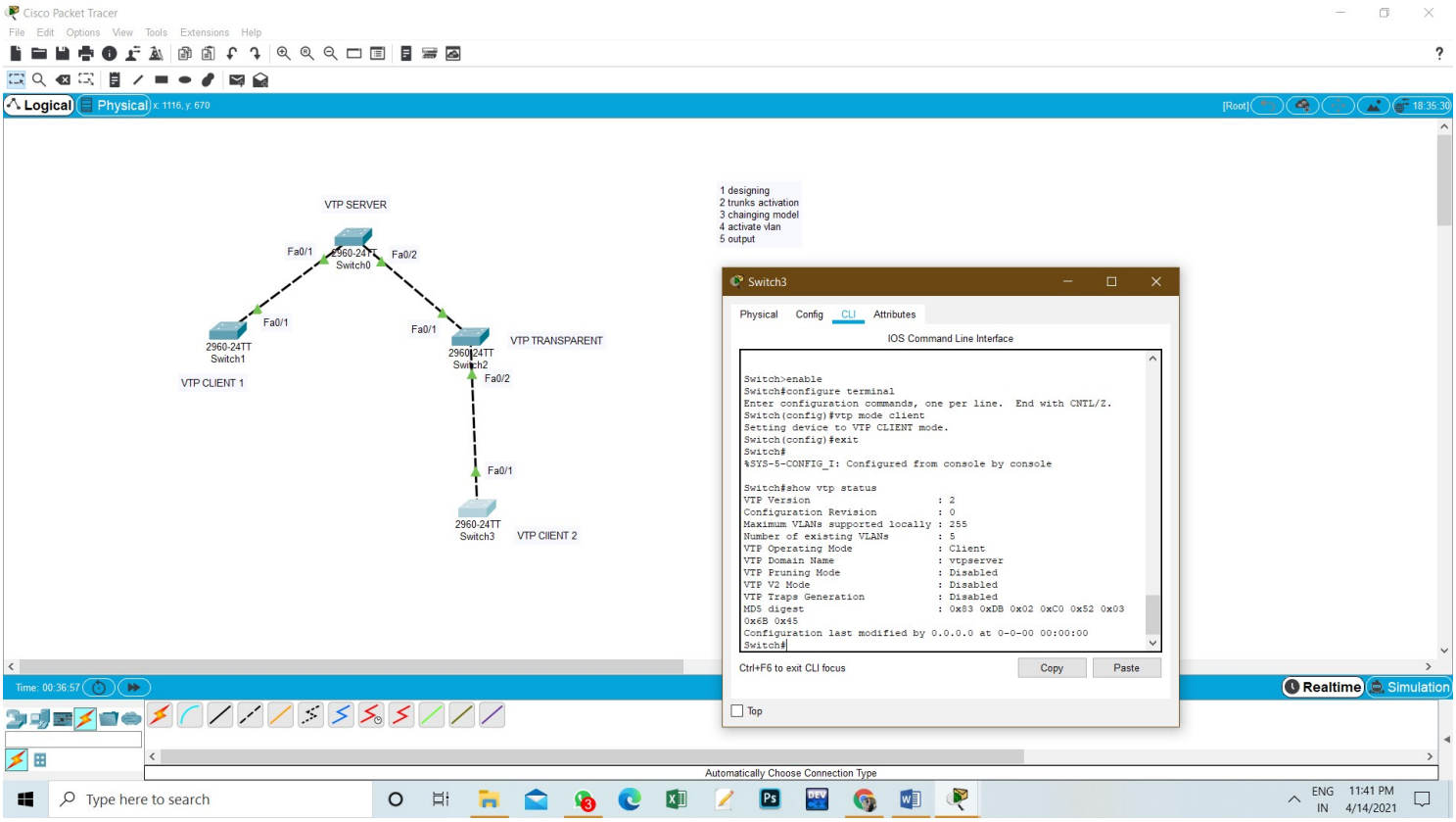
Switch 3:


Cisco Packet Tracer
Logical
Physical
VTP SERVER
Fa0/1
2960-24TT
Switch0
Fa0/2
Fa0/1
2960-24TT
Switch1
VTP CLIENT 1
Fa0/1
2960-24TT
Switch2
VTP TRANSPARENT
Fa0/2
Fa0/1
2960-24TT
Switch3
VTP CliENT 2
1 designing
2 trunks activation
3 chainging model
4 activate vlan
5 output
Switch3
Physical
Config
CLI
Attributes
IOS Command Line Interface
Switch>enable
Switch#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#vtp mode client
Setting device to VTP CLIENT mode.
Switch(config)#exit
Switch#
%SYS-5-CONFIG_I: Configured from console by console
Switch#show vtp status
VTP Version : 2
Configuration Revision : 0
Maximum VLANs supported locally : 255
Number of existing VLANs : 5
VTP Operating Mode : Client
VTP Domain Name : vtpserver
VTP Pruning Mode : Disabled
VTP V2 Mode : Disabled
VTP Traps Generation : Disabled
MD5 digest : 0x83 0xDB 0x02 0xC0 0x52 0x03
0x6B 0x45
Configuration last modified by 0.0.0.0 at 0-0-00 00:00:00
Switch#
Ctrl+F6 to exit CLI focus
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Realtime
Simulation
Automatically Choose Connection Type
Type here to search
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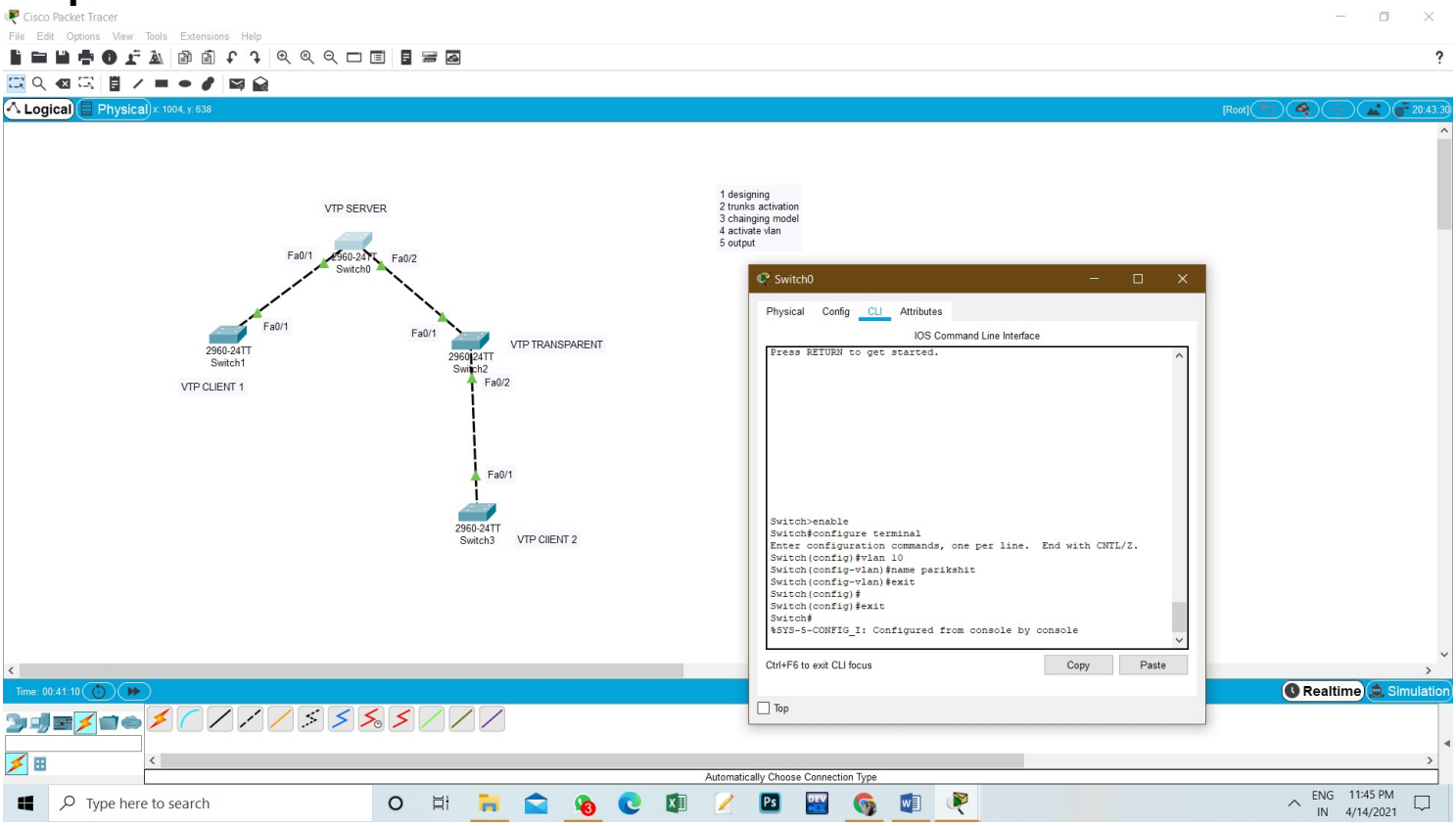
Step 5: Now Activate the VLANS on Server mode.



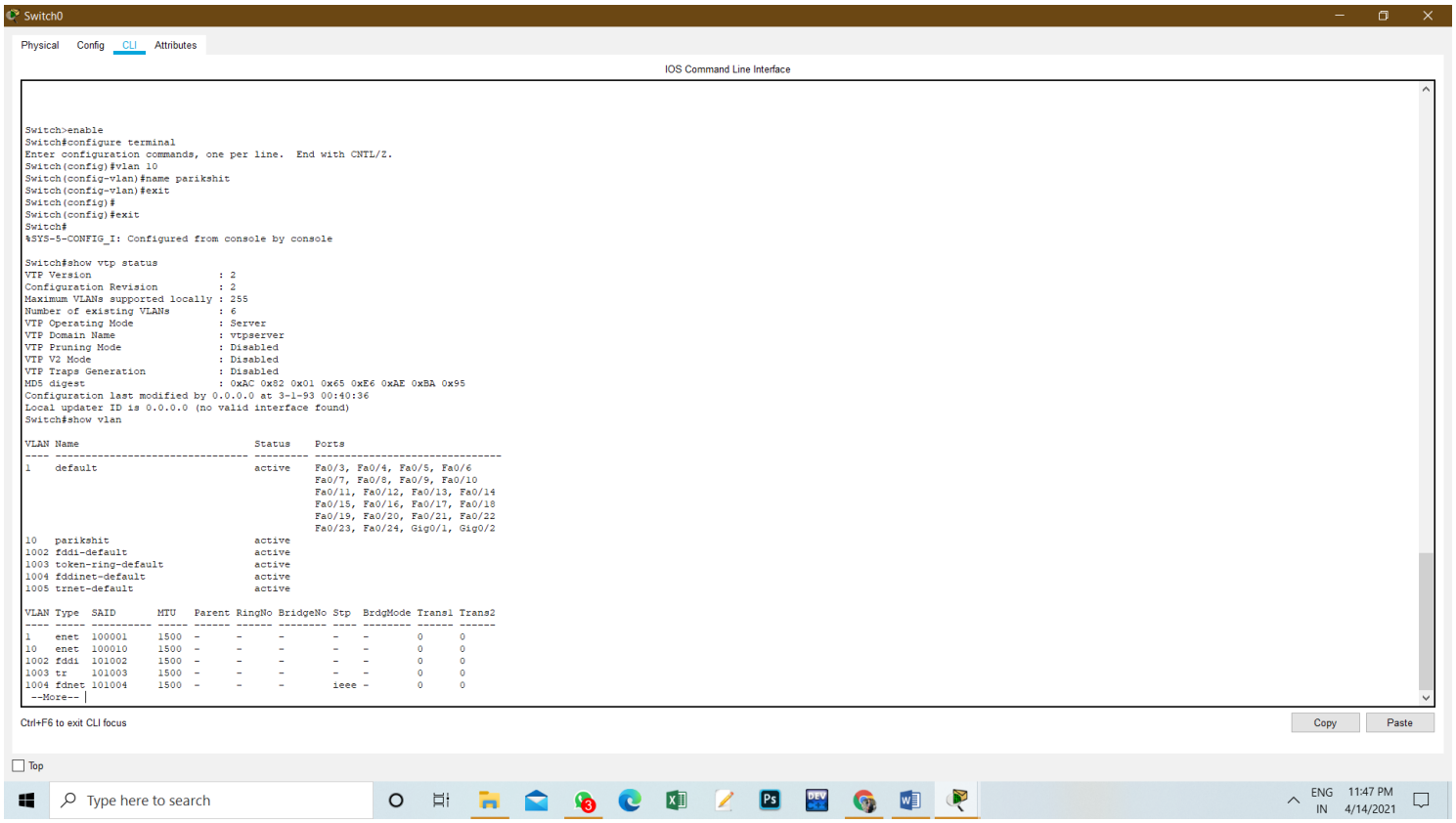
Step 6: Now enter the Show VTP Command to Check the output. **Step 7:** End.

8. **Percentage error (if any or applicable):** Nil

9. **Calculations/ Chemical Reactions / Theorems /Formulas used etc** : Nil

10. **Result/Output/Writing Summary:**

Server :


Switch0
Physical
Config
CLI
Attributes
IOS Command Line Interface
Switch>enable
Switch#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#vlan 10
Switch(config-vlan)#name parikshit
Switch(config-vlan)#exit
Switch(config)#
Switch(config)#exit
Switch#
%SYS-5-CONFIG_I: Configured from console by console
Switch#show vtp status
VTP Version : 2
Configuration Revision : 2
Maximum VLANs supported locally : 255
Number of existing VLANs : 6
VTP Operating Mode : Server
VTP Domain Name : vtpserver
VTP Pruning Mode : Disabled
VTP V2 Mode : Disabled
VTP Traps Generation : Disabled
MD5 digest : 0xAC 0x82 0x01 0x65 0xE6 0xAE 0xBA 0x95
Configuration last modified by 0.0.0.0 at 3-1-93 00:40:36
Local updater ID is 0.0.0.0 (no valid interface found)
Switch#show vlan
VLAN Name Status Ports
1 default active Fa0/3, Fa0/4, Fa0/5, 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
10 parikshit active
1002 fddi-default active
1003 token-ring-default active
1004 fddinet-default active
1005 trnet-default active
VLAN Type SAID MTU Parent RingNo BridgeNo Stp BrdgMode Trans1 Trans2
1 enet 100001 1500 - - - - - 0 0
10 enet 100010 1500 - - - - - 0 0
1002 fddi 101002 1500 - - - - - 0 0
1003 tr 101003 1500 - - - - - 0 0
1004 fdnet 101004 1500 - - - ieee - 0 0
--More--
Ctrl+F6 to exit CLI focus
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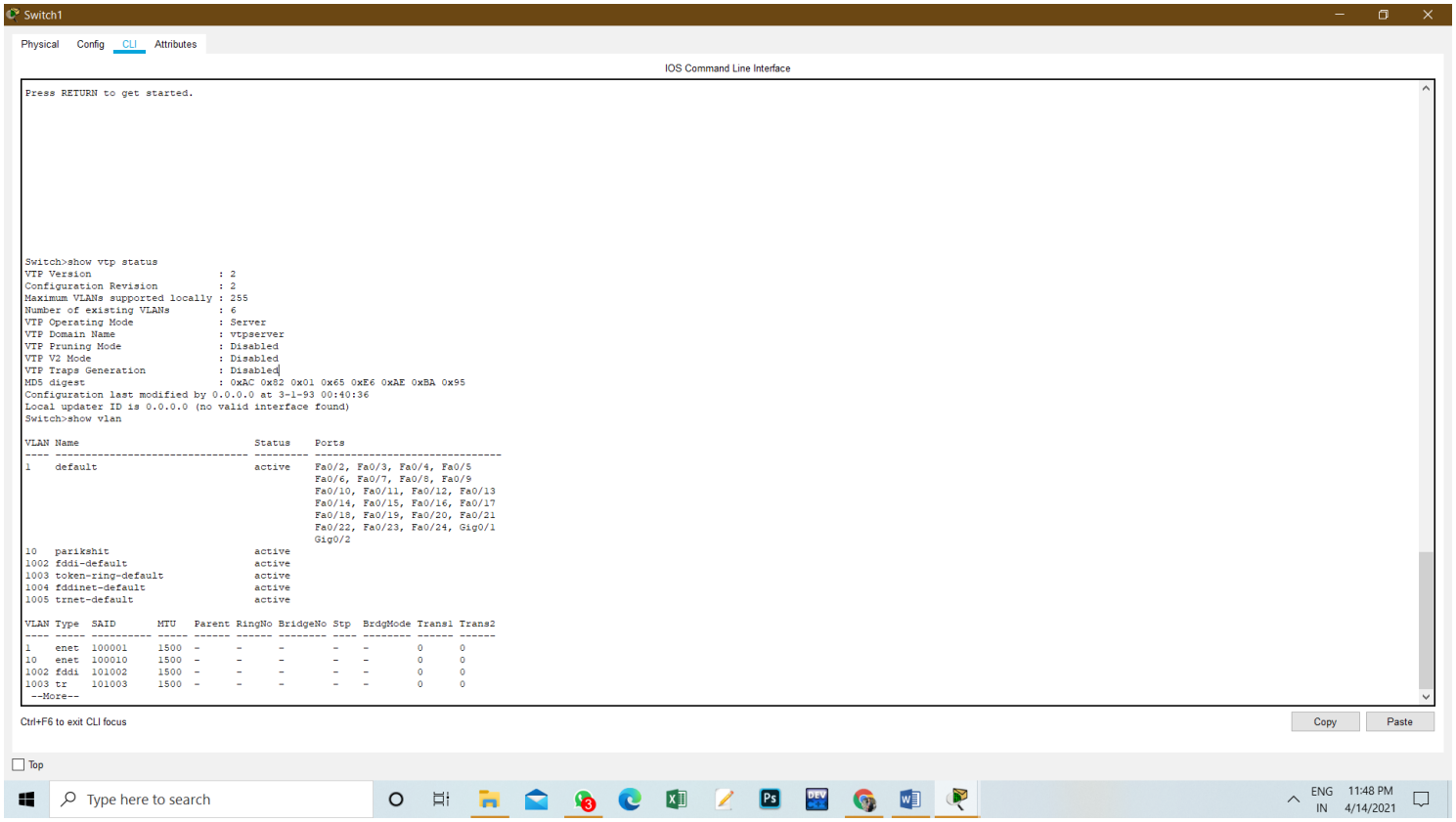
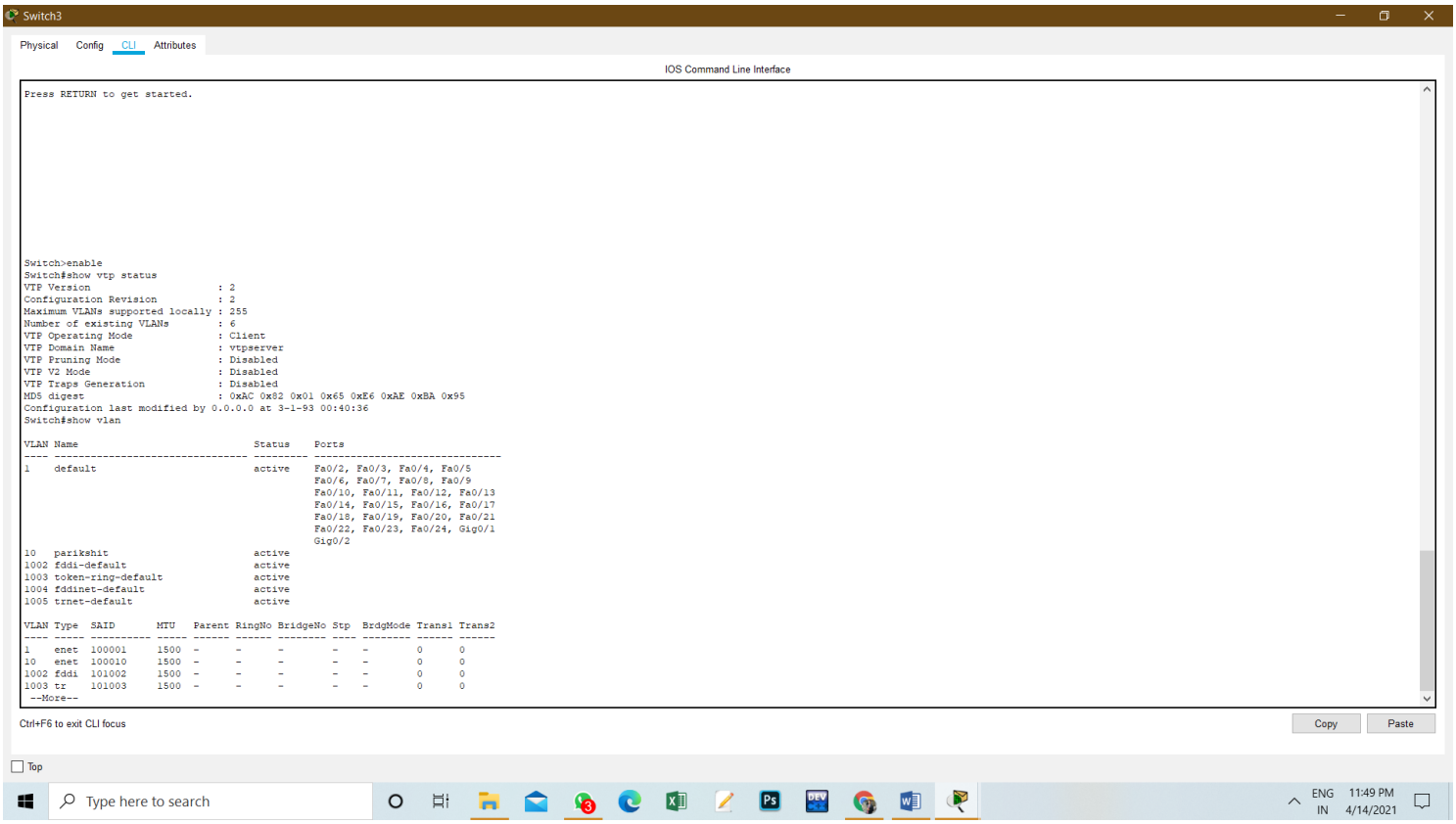
Client 1:



Client 2:


Switch3
Physical
Config
CLI
Attributes
IOS Command Line Interface
Press RETURN to get started.
Switch>enable
Switch#show vtp status
VTP Version : 2
Configuration Revision : 2
Maximum VLANs supported locally : 255
Number of existing VLANs : 6
VTP Operating Mode : Client
VTP Domain Name : vtpserver
VTP Pruning Mode : Disabled
VTP V2 Mode : Disabled
VTP Traps Generation : Disabled
MD5 digest : 0xAC 0x82 0x01 0x65 0xE6 0xAE 0xBA 0x95
Configuration last modified by 0.0.0.0 at 3-1-93 00:40:36
Switch#show vlan
VLAN Name Status Ports
1 default active Fa0/2, Fa0/3, Fa0/4, Fa0/5
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
10 parikshit active
1002 fddi-default active
1003 token-ring-default active
1004 fddinet-default active
1005 trnet-default active
VLAN Type SAID MTU Parent RingNo BridgeNo Stp BrdgMode Trans1 Trans2
1 enet 100001 1500 - - - - - 0 0
10 enet 100010 1500 - - - - - 0 0
1002 fddi 101002 1500 - - - - - 0 0
1003 tr 101003 1500 - - - - - 0 0
--More--
Ctrl+F6 to exit CLI focus
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Type here to search
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4/14/2021

11. **Graphs (If Any): Image /Soft copy of graph paper to be attached here:**
Nil

Learning outcomes (What I have learnt):

1. Learned how to activate the Trunks .
2. Learned how to change the VTP modes.
3. Learned how to activate the VLANS.
4. Got to know about the working of Switches.
5. Learned How to connect different networks.

Evaluation Grid (To be created as per the SOP and Assessment guidelines by the faculty):

Sr. No.	Parameters	Marks Obtained	Maximum Marks
1.			
2.			
3.			