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Department : BS(CS)

Semester : 4th

ID # : 15366

Sessional Assignment No : 1st

Subject : Data Communication
And Network (LAB)

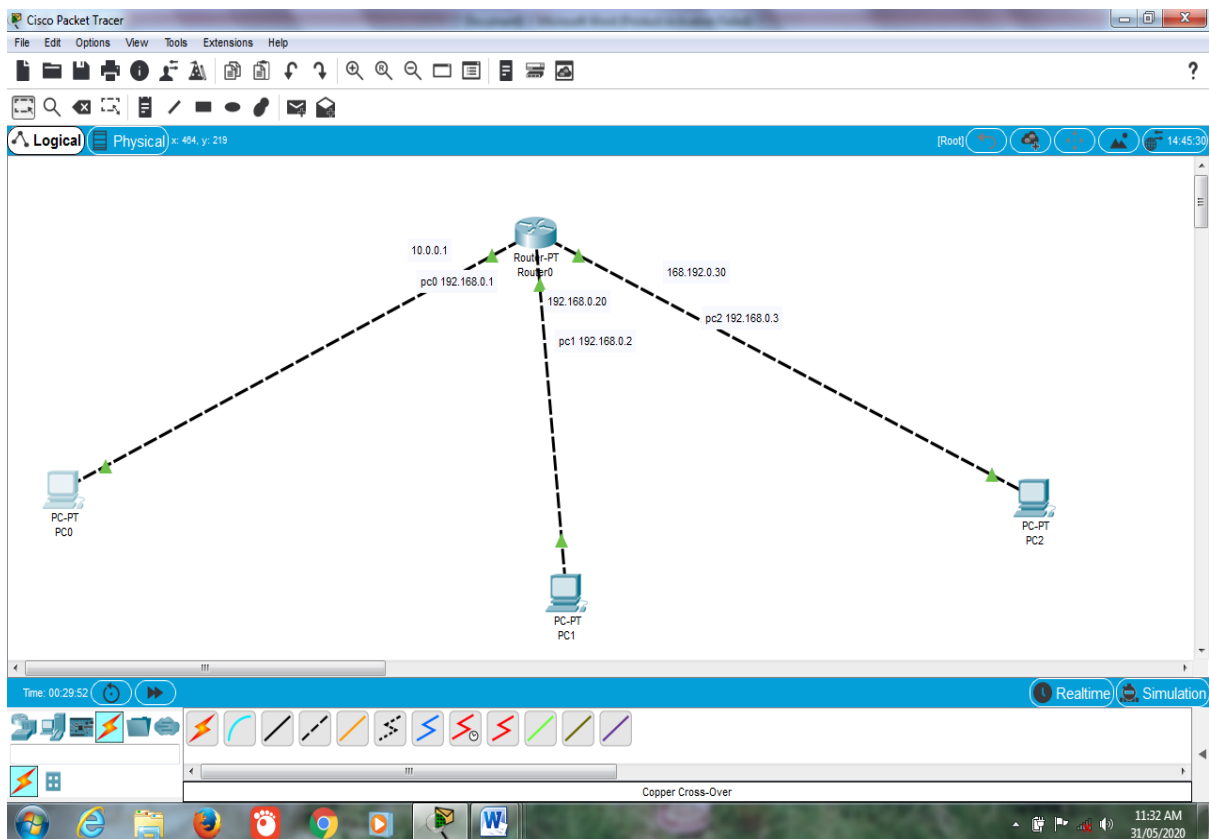
Submitted To : Engr. Ghassan Husnain Sir

Dated : 31th May 2020

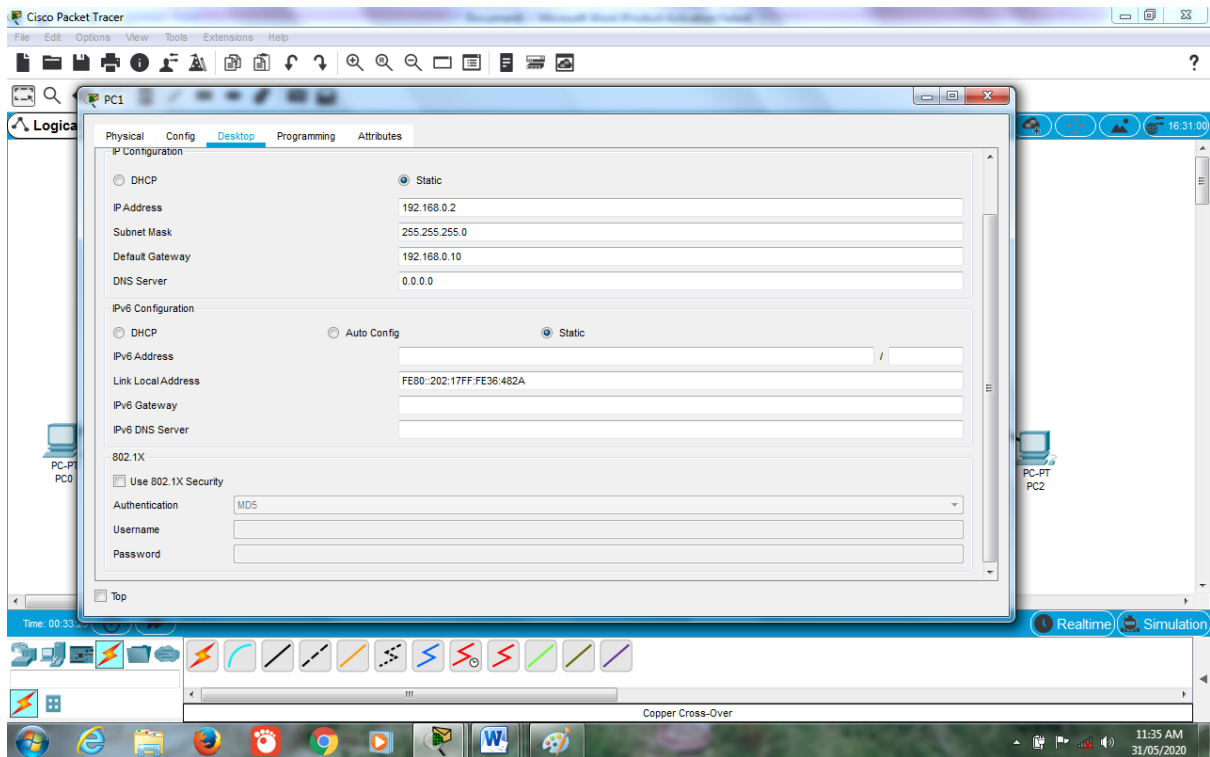
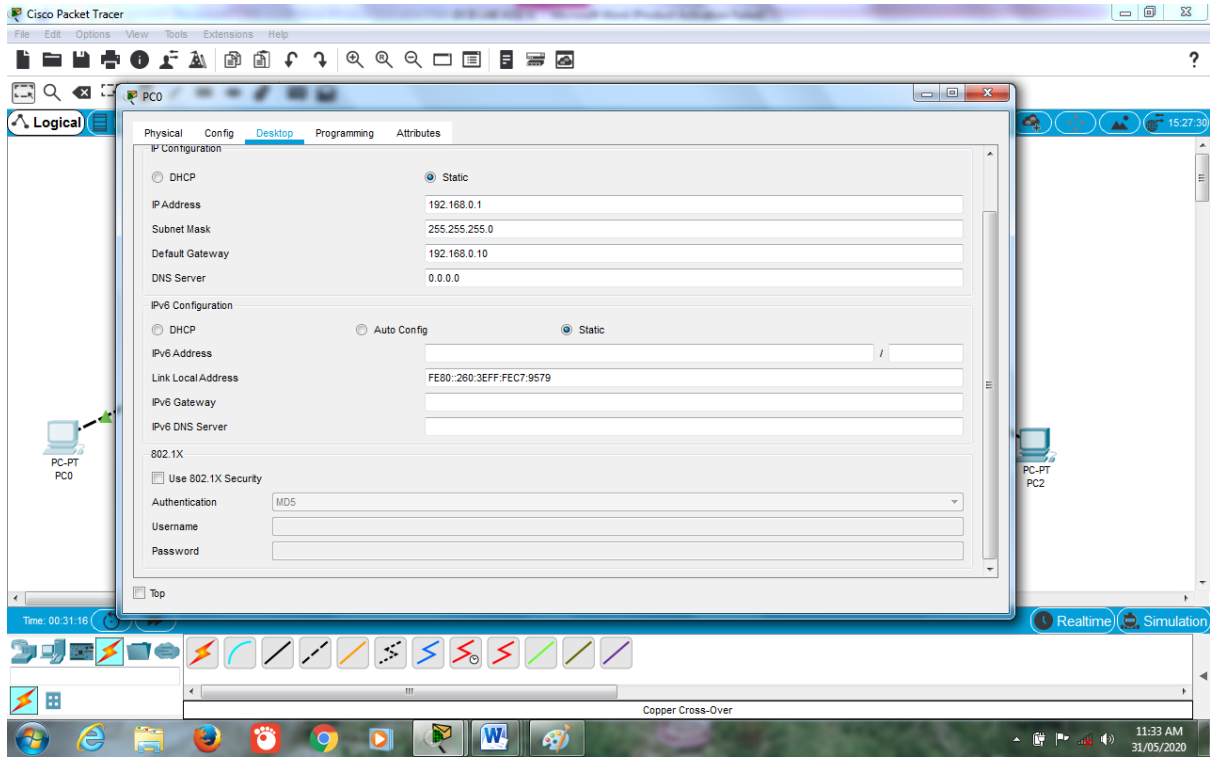
Task 1:

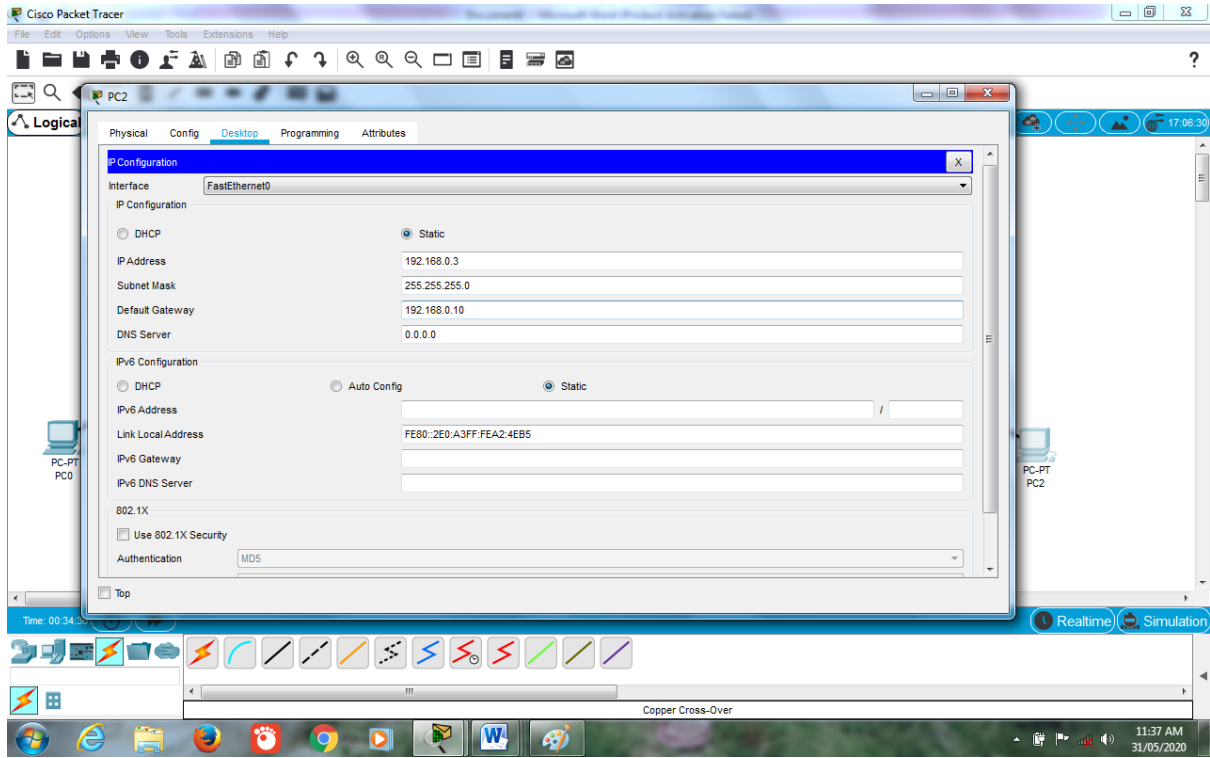
Construct a network topology which have one router connected with 3 computers and assign them proper IP addresses, subnet mask and default gateways, configure router using command line interface and ping one PC to other and show the results.

Ans:

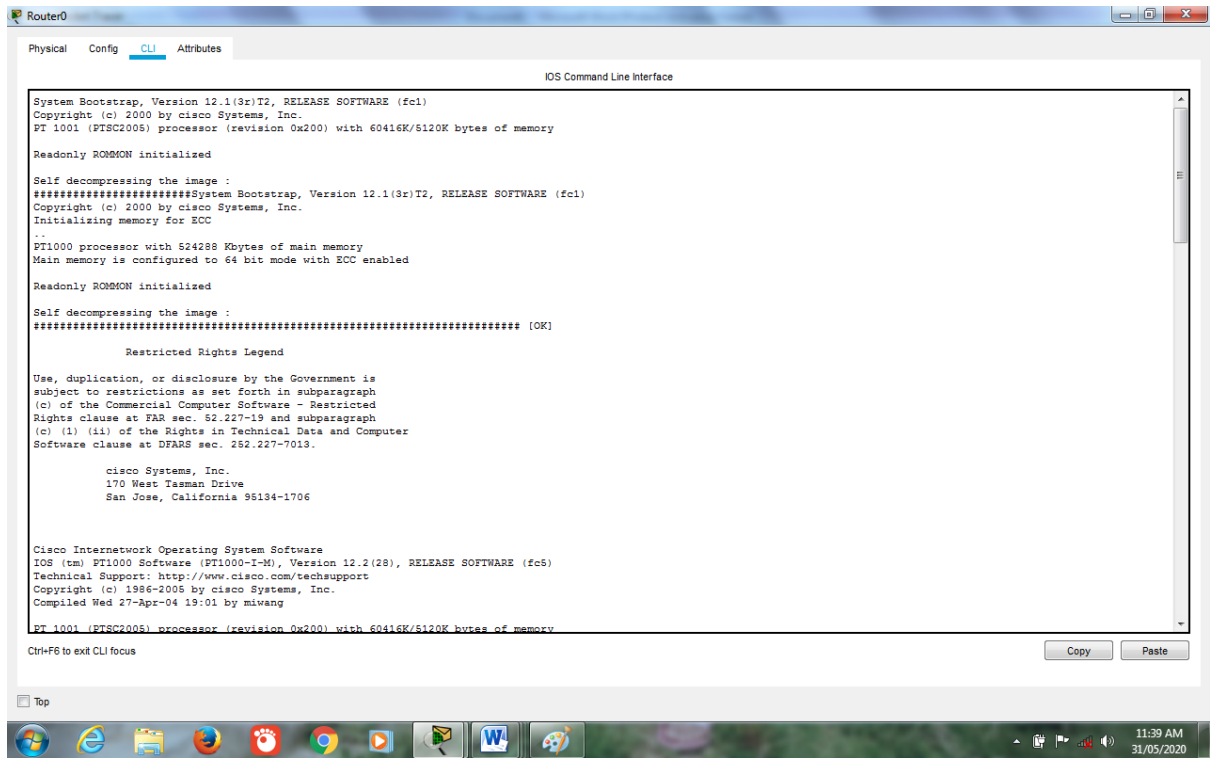


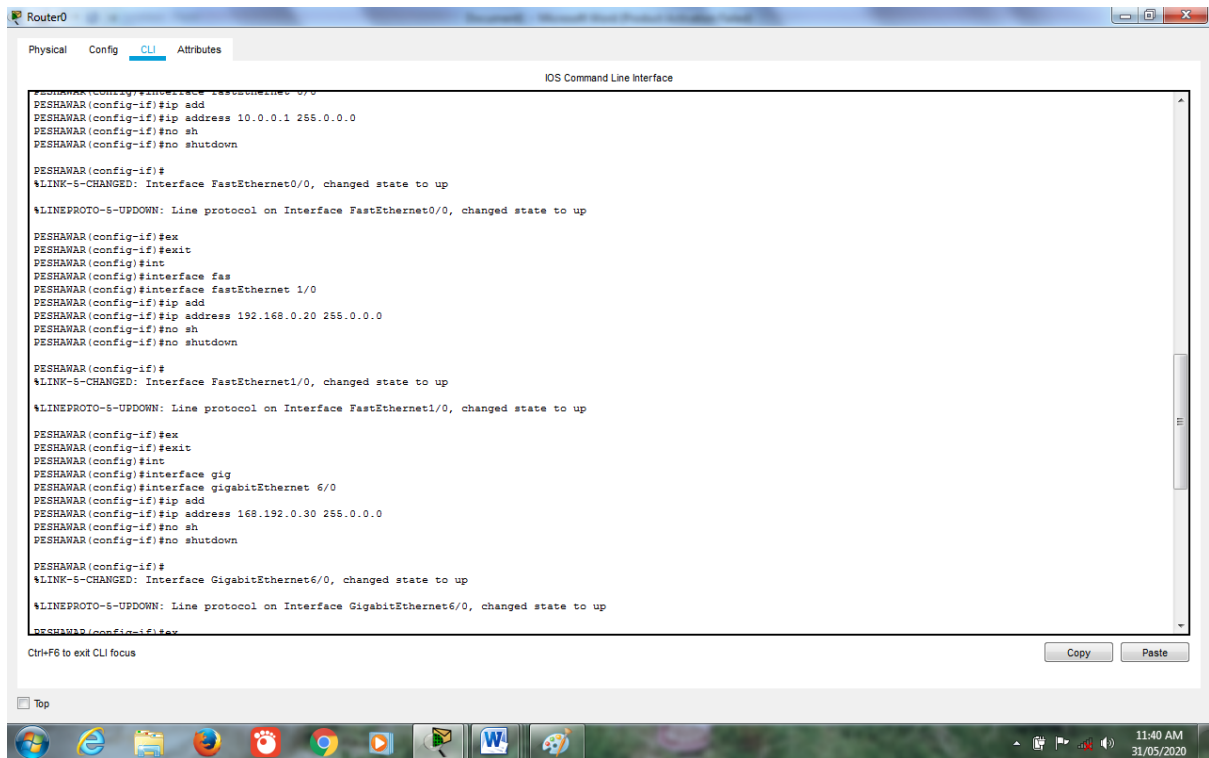
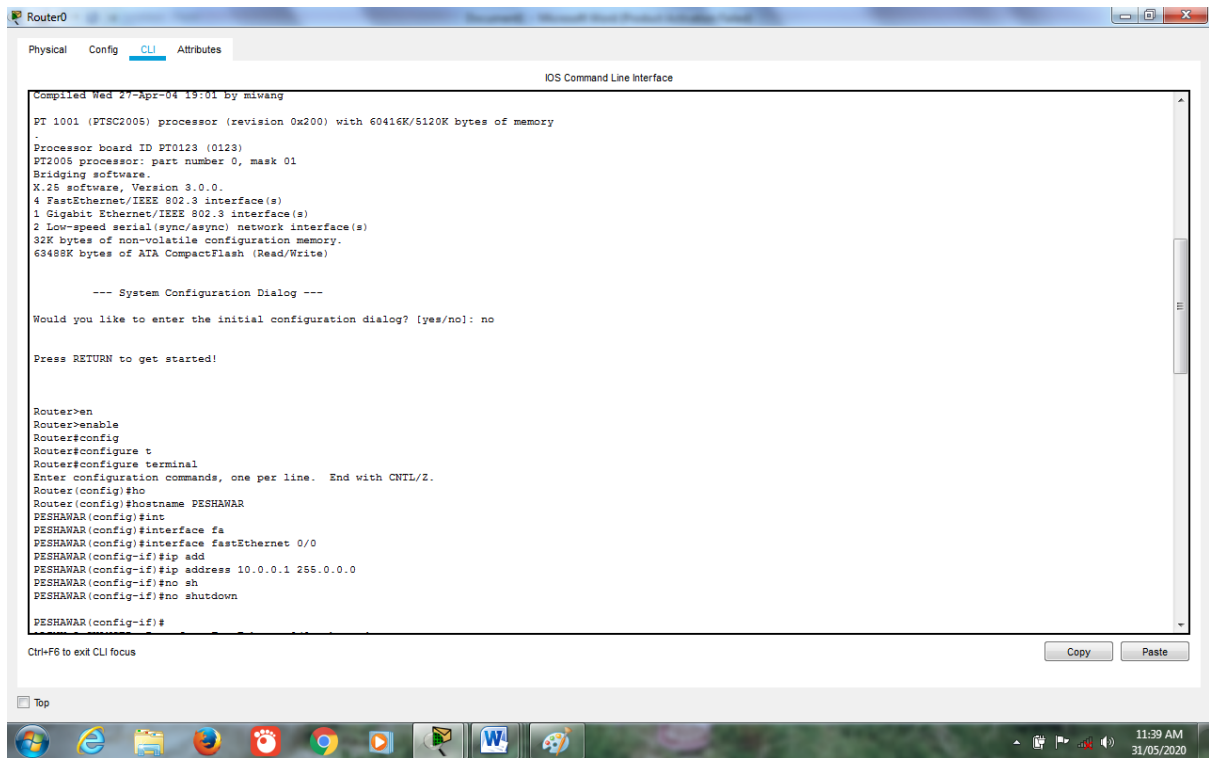
IP Addresses, Subnet Masks and Default Gateway of PCs:



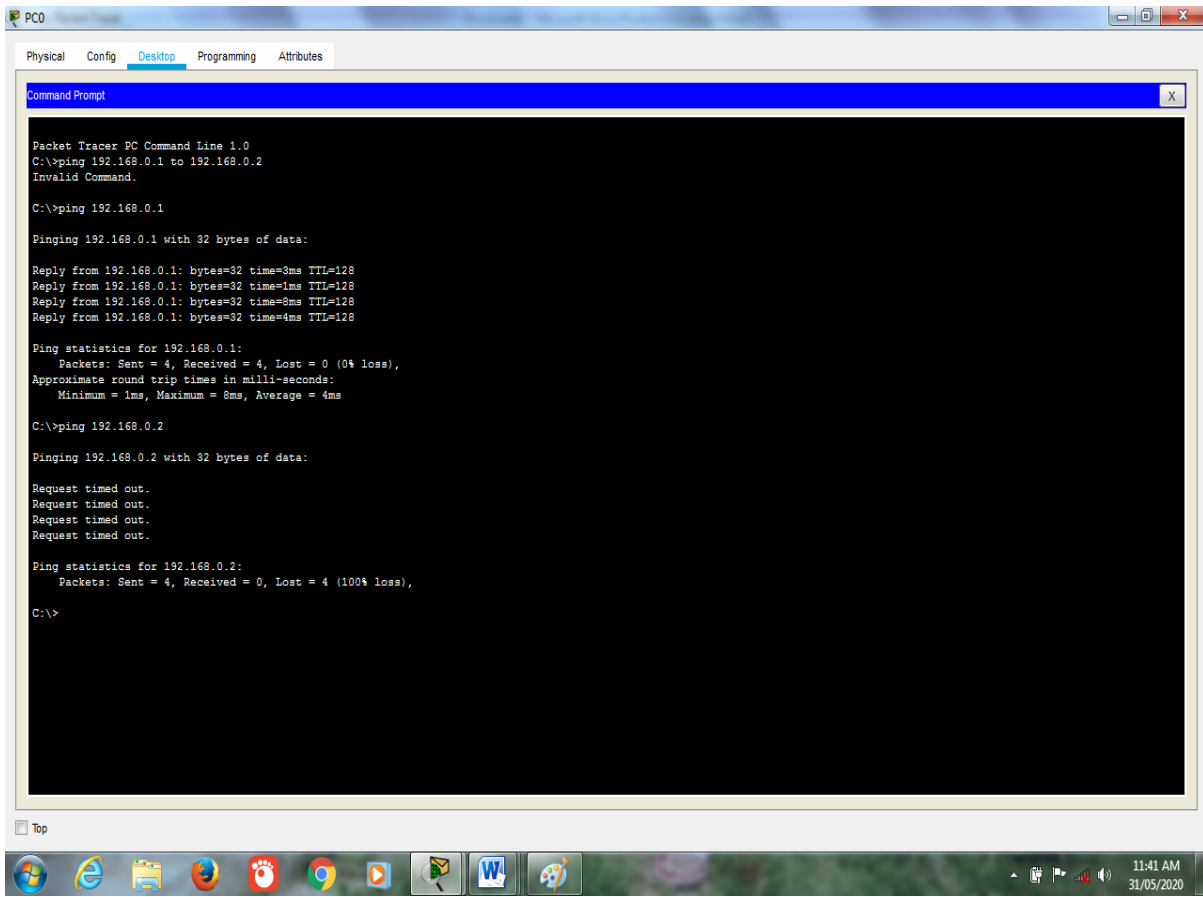


Configuring Router using Command Line Interface:





Ping One PC to Other:



The screenshot shows a Packet Tracer PC window for PC0. The Command Prompt is open and displays the following text:

```
Packet Tracer PC Command Line 1.0
C:\>ping 192.168.0.1 to 192.168.0.2
Invalid Command.

C:\>ping 192.168.0.1

Pinging 192.168.0.1 with 32 bytes of data:

Reply from 192.168.0.1: bytes=32 time=3ms TTL=128
Reply from 192.168.0.1: bytes=32 time=1ms TTL=128
Reply from 192.168.0.1: bytes=32 time=8ms TTL=128
Reply from 192.168.0.1: bytes=32 time=4ms TTL=128

Ping statistics for 192.168.0.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 1ms, Maximum = 8ms, Average = 4ms

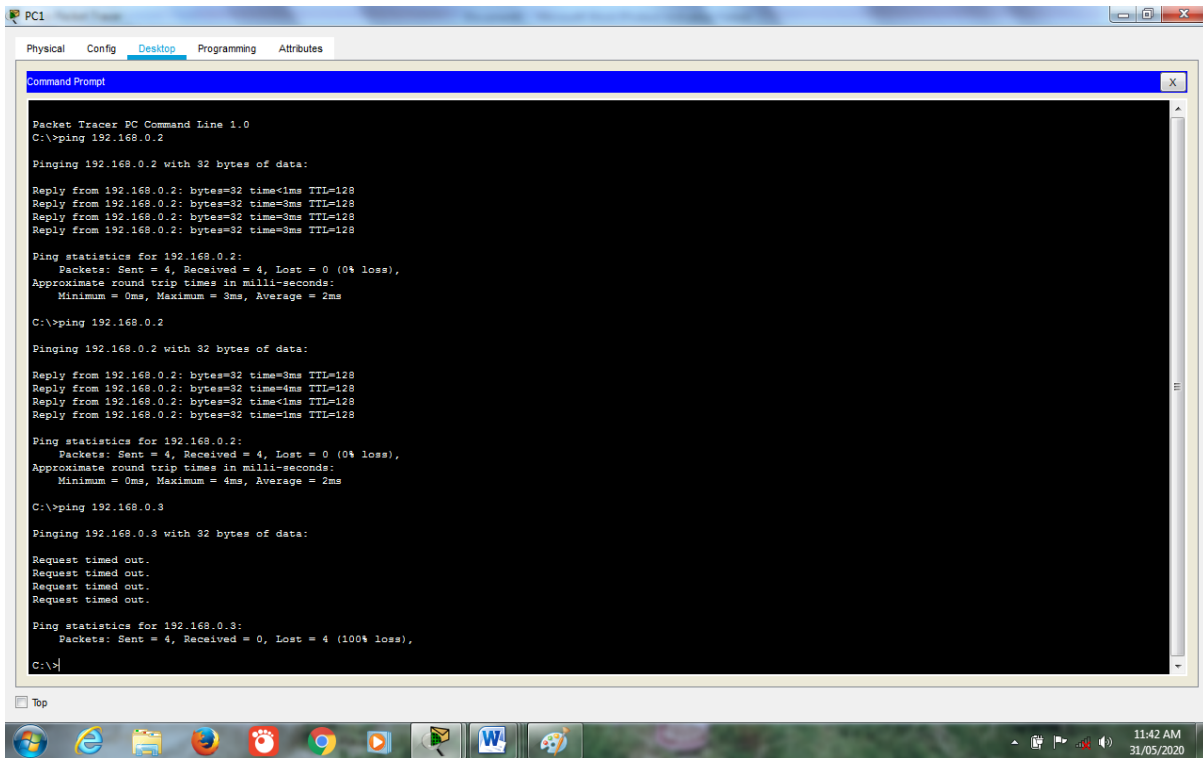
C:\>ping 192.168.0.2

Pinging 192.168.0.2 with 32 bytes of data:

Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 192.168.0.2:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\>
```



The screenshot shows a Packet Tracer PC window for PC1. The Command Prompt is open and displays the following text:

```
Packet Tracer PC Command Line 1.0
C:\>ping 192.168.0.2

Pinging 192.168.0.2 with 32 bytes of data:

Reply from 192.168.0.2: bytes=32 time=1ms TTL=128
Reply from 192.168.0.2: bytes=32 time=3ms TTL=128
Reply from 192.168.0.2: bytes=32 time=3ms TTL=128
Reply from 192.168.0.2: bytes=32 time=3ms TTL=128

Ping statistics for 192.168.0.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 3ms, Average = 2ms

C:\>ping 192.168.0.2

Pinging 192.168.0.2 with 32 bytes of data:

Reply from 192.168.0.2: bytes=32 time=3ms TTL=128
Reply from 192.168.0.2: bytes=32 time=4ms TTL=128
Reply from 192.168.0.2: bytes=32 time=1ms TTL=128
Reply from 192.168.0.2: bytes=32 time=1ms TTL=128

Ping statistics for 192.168.0.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 4ms, Average = 2ms

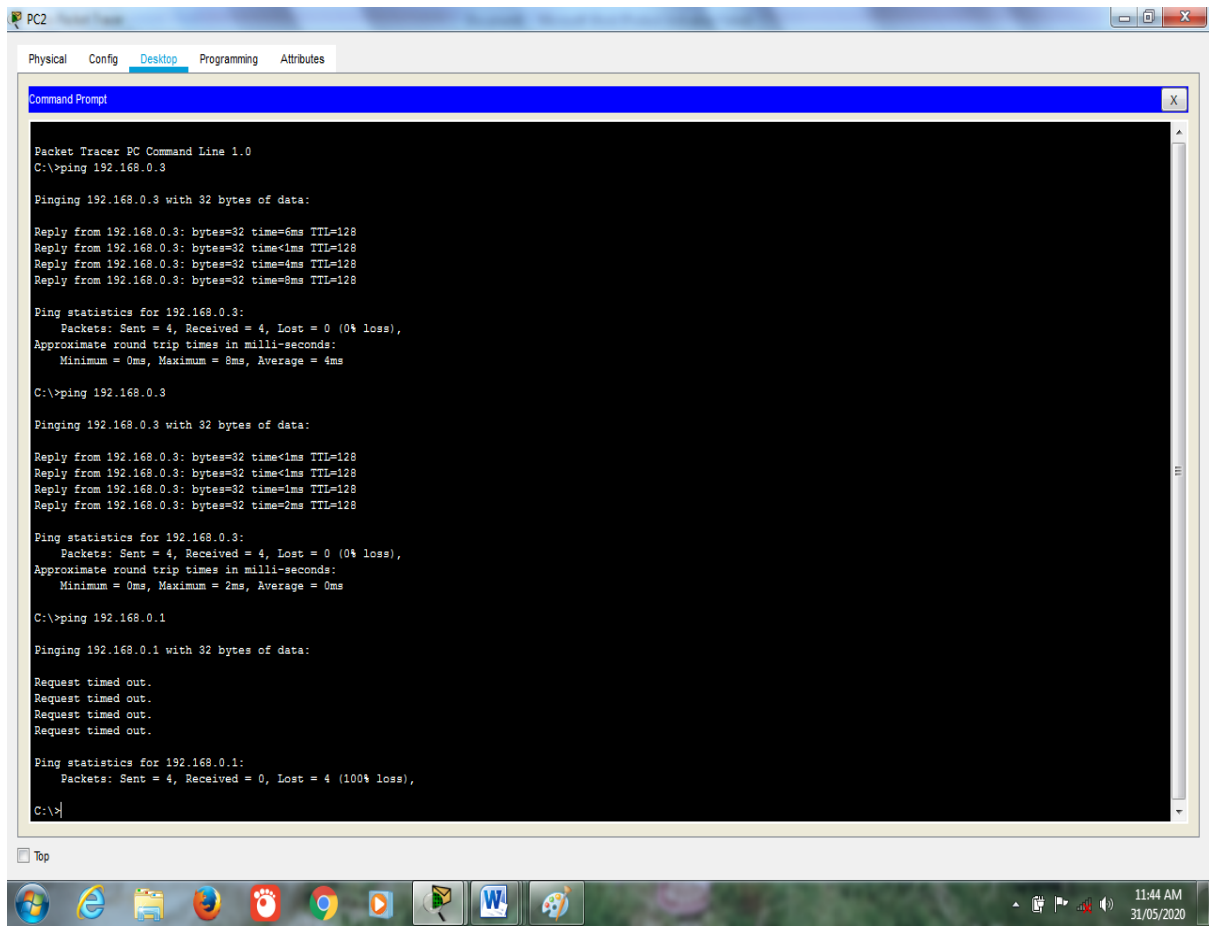
C:\>ping 192.168.0.3

Pinging 192.168.0.3 with 32 bytes of data:

Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 192.168.0.3:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\>
```



Task 2:

Give hostname to the router with your name like “Muhammad ALI”, apply login password on the router and also enable secret password to it, show banner of “NO ACCESS” before login on the router, after doing this show the results.

Ans:

Apply Login Password on Router:

```
Router0
Physical Config CLI Attributes
IOS Command Line Interface

Press RETURN to get started!

Router>en
Router>enable
Router#confi
Router#config
Router#conf
Router#configure t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#hostname Musa
Musa(config)#int
Musa(config)#interface fa
Musa(config)#interface fastEthernet 0/0
Musa(config-if)#ip add
Musa(config-if)#ip address 10.0.0.1 255.0.0.0
Musa(config-if)#no sh
Musa(config-if)#no shutdown

Musa(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

Musa(config-if)#ex
Musa(config-if)#exit
Musa(config)#int
Musa(config)#interface fa
Musa(config)#interface fastEthernet 1/0
Musa(config-if)#ip add
Musa(config-if)#ip address 192.168.0.20 255.0.0.0
Musa(config-if)#no sh
Musa(config-if)#no shutdown

Musa(config-if)#
%LINK-5-CHANGED: Interface FastEthernet1/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet1/0, changed state to up

Ctrl+F6 to exit CLI focus
```

```
Router0
Physical Config CLI Attributes
IOS Command Line Interface

Musa(config-if)#no shutdown

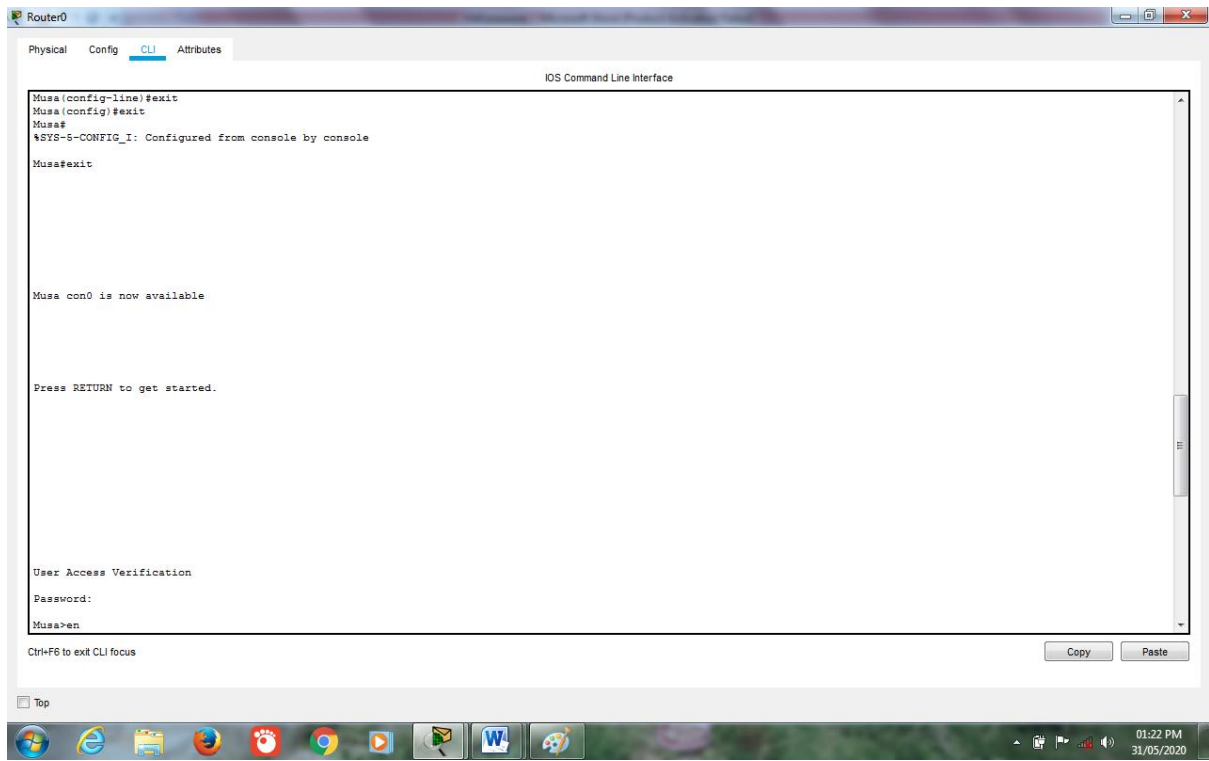
Musa(config-if)#
%LINK-5-CHANGED: Interface FastEthernet1/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet1/0, changed state to up

Musa(config-if)#ex
Musa(config-if)#exit
Musa(config)#int
Musa(config)#interface gig
Musa(config)#interface gigabitEthernet 6/0
Musa(config-if)#ip add
Musa(config-if)#ip address 168.192.0.30 255.0.0.0
Musa(config-if)#no sh
Musa(config-if)#no shutdown

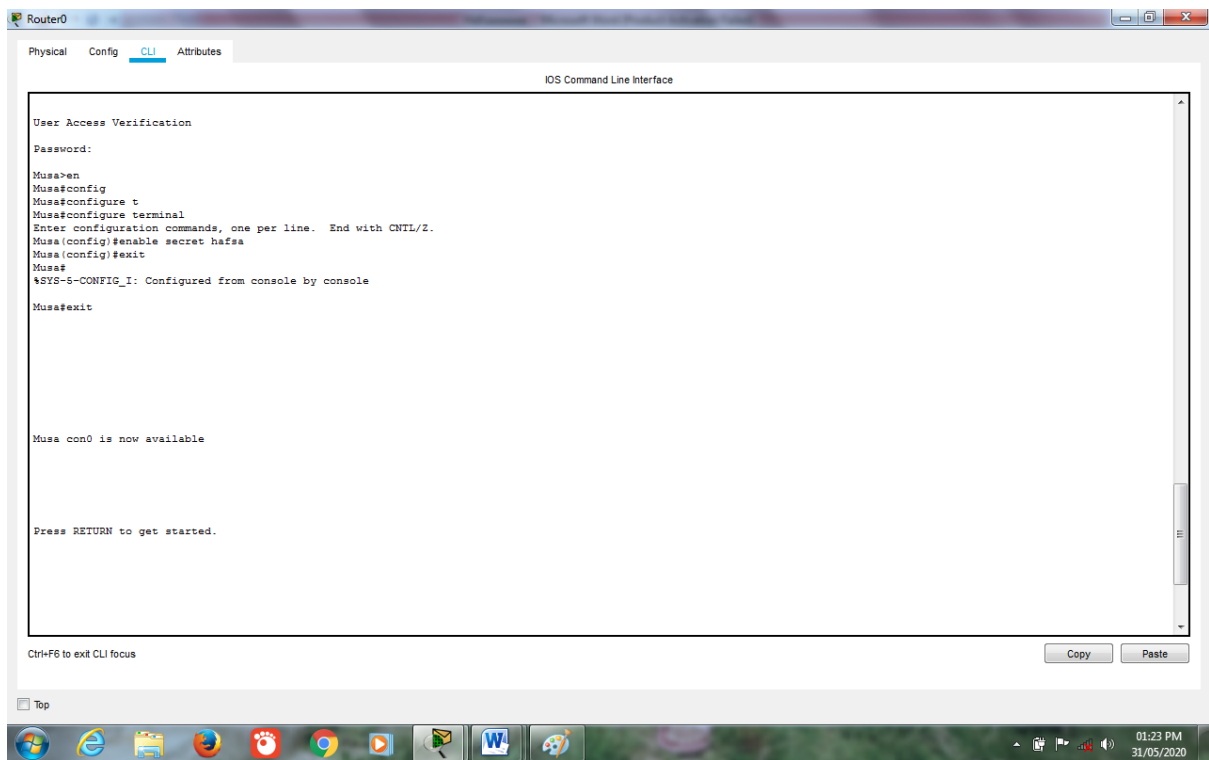
Musa(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet6/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet6/0, changed state to up

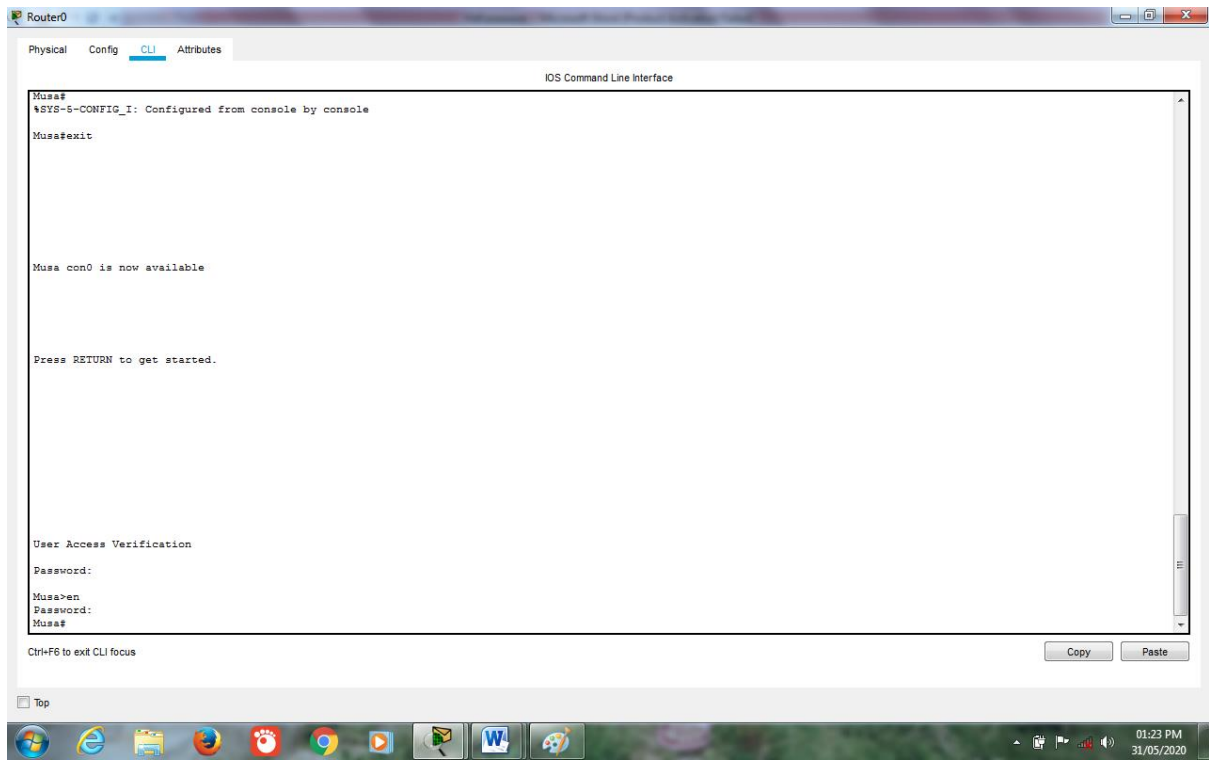
Musa(config-if)#exit
Musa(config)#lin
Musa(config)#line con
Musa(config)#line console 0
Musa(config-line)#password peshawar
Musa(config-line)#login
Musa(config-line)#ex
Musa(config-line)#exit
Musa(config-line)#exit
Musa(config)#exit
Musa#
%SYS-5-CONFIG_I: Configured from console by console

Musa#exit
```

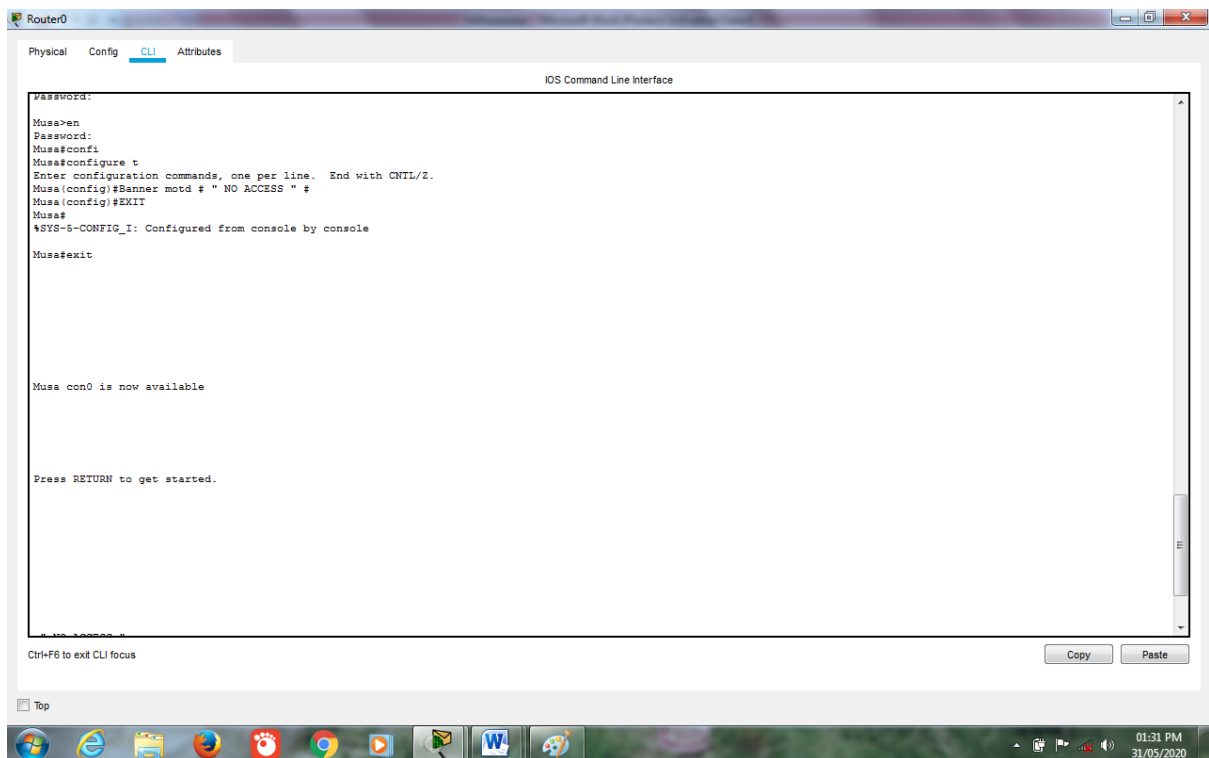



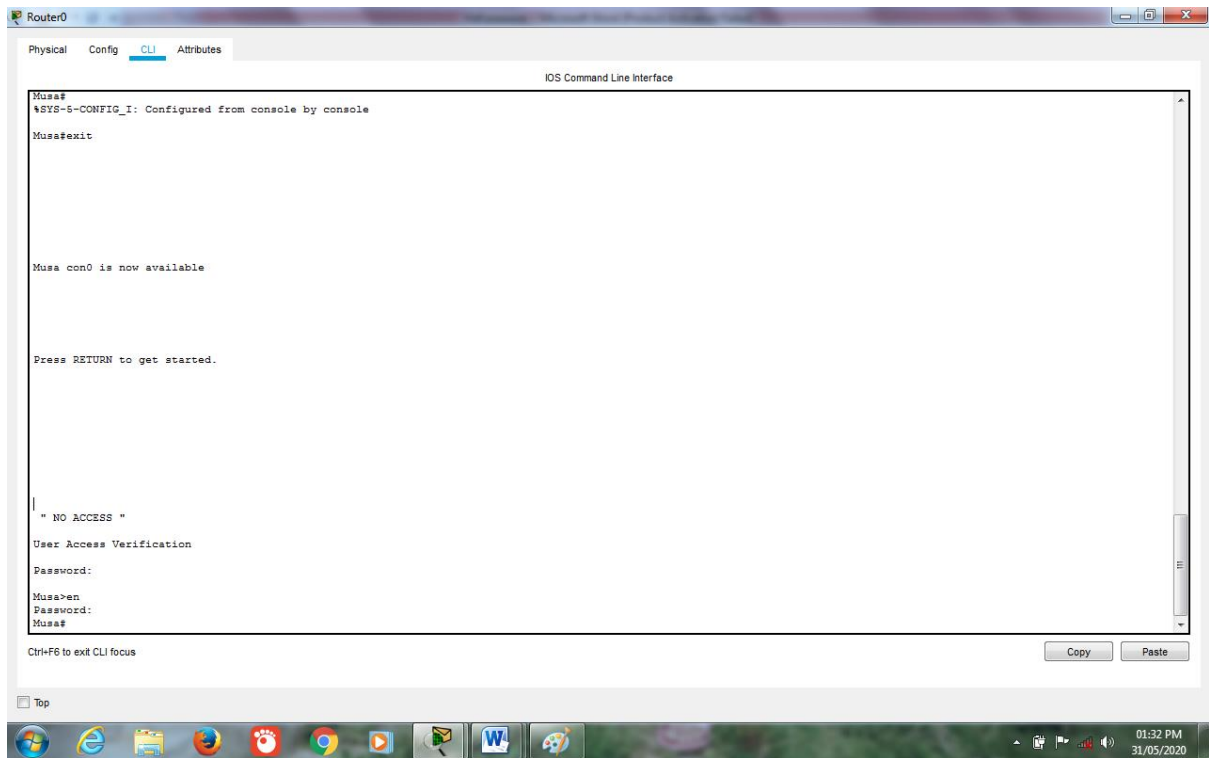
Enable Secret Password:





Show Banner:



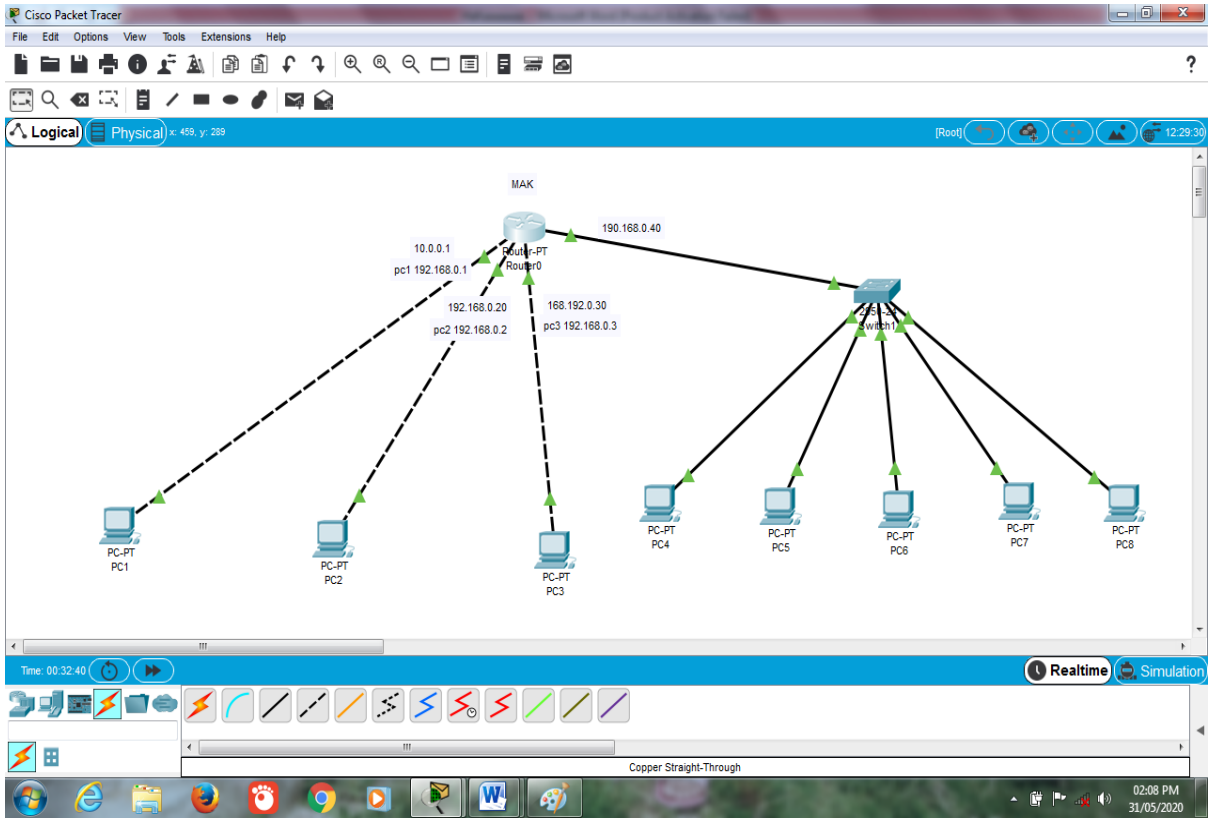


Task 3:

Construct a network topology which have one router connected with 3 computers and assign them proper IP addresses, subnet mask and default gateways, and also connect one switch, which is further connected to 5 PC's, enable password on router as well as switch, also implement some kind of banner on it and show the results.

Ans:

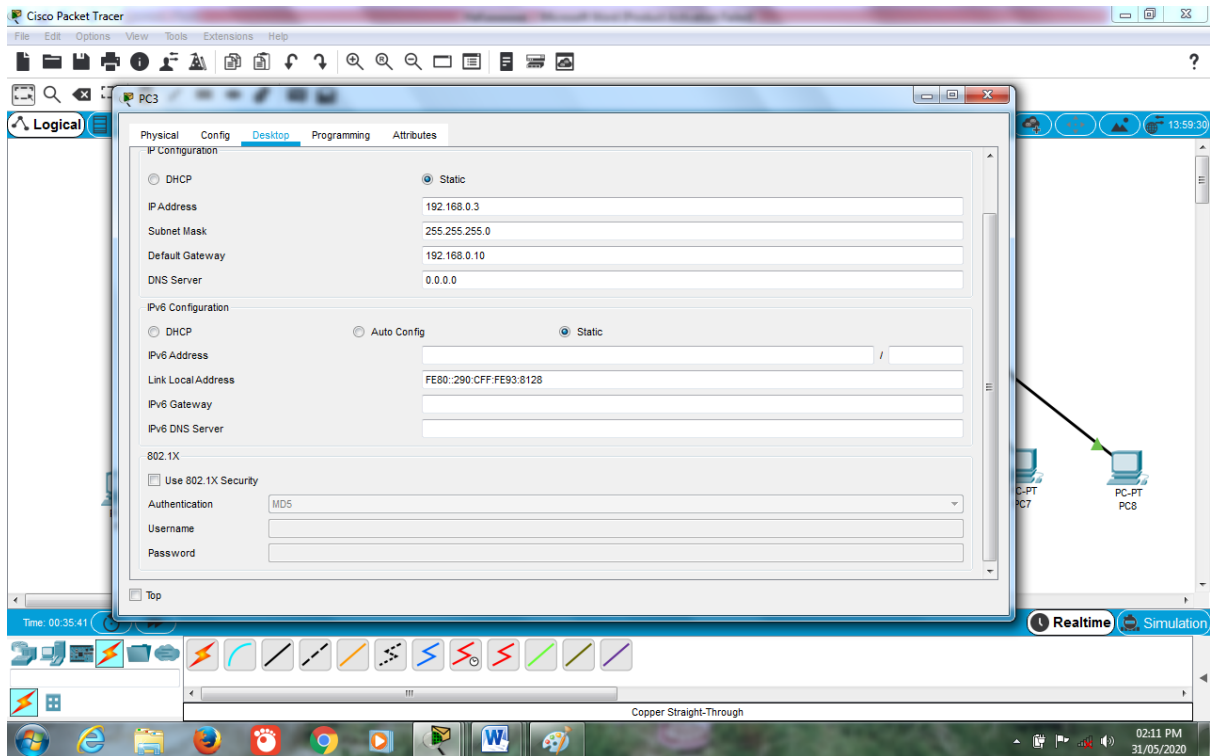
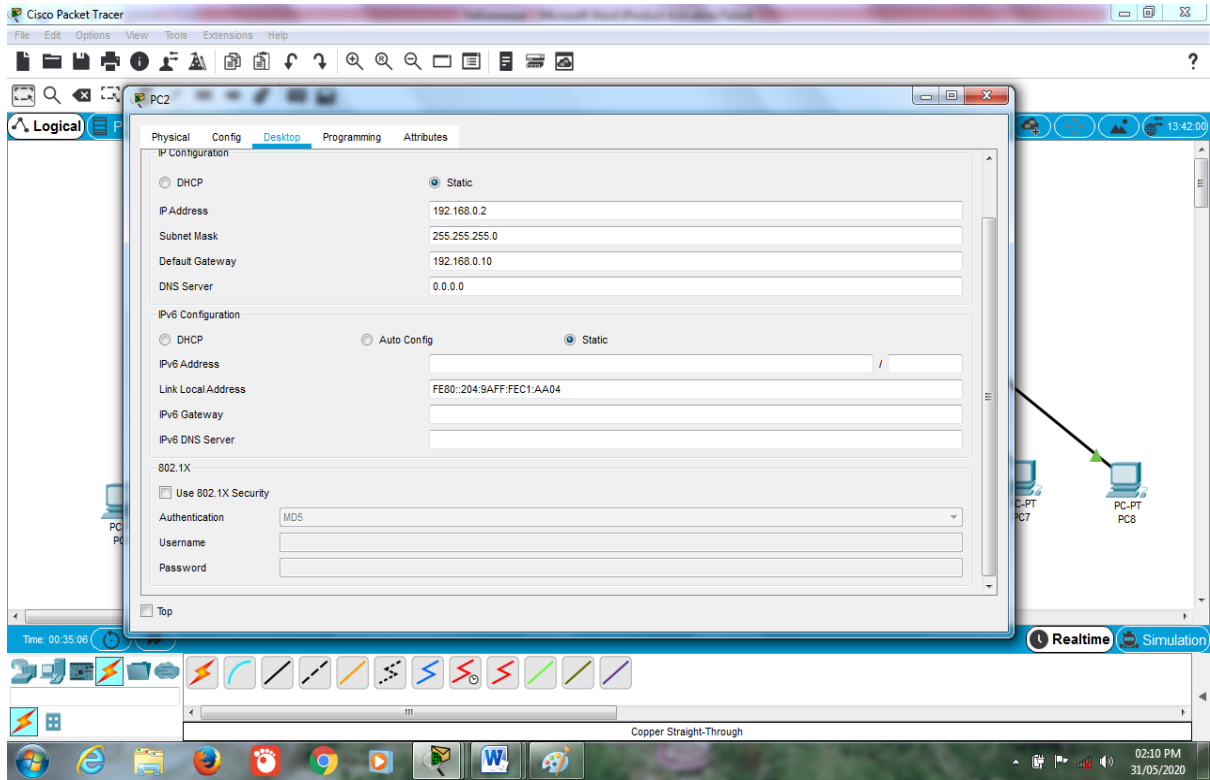
Network Topology:



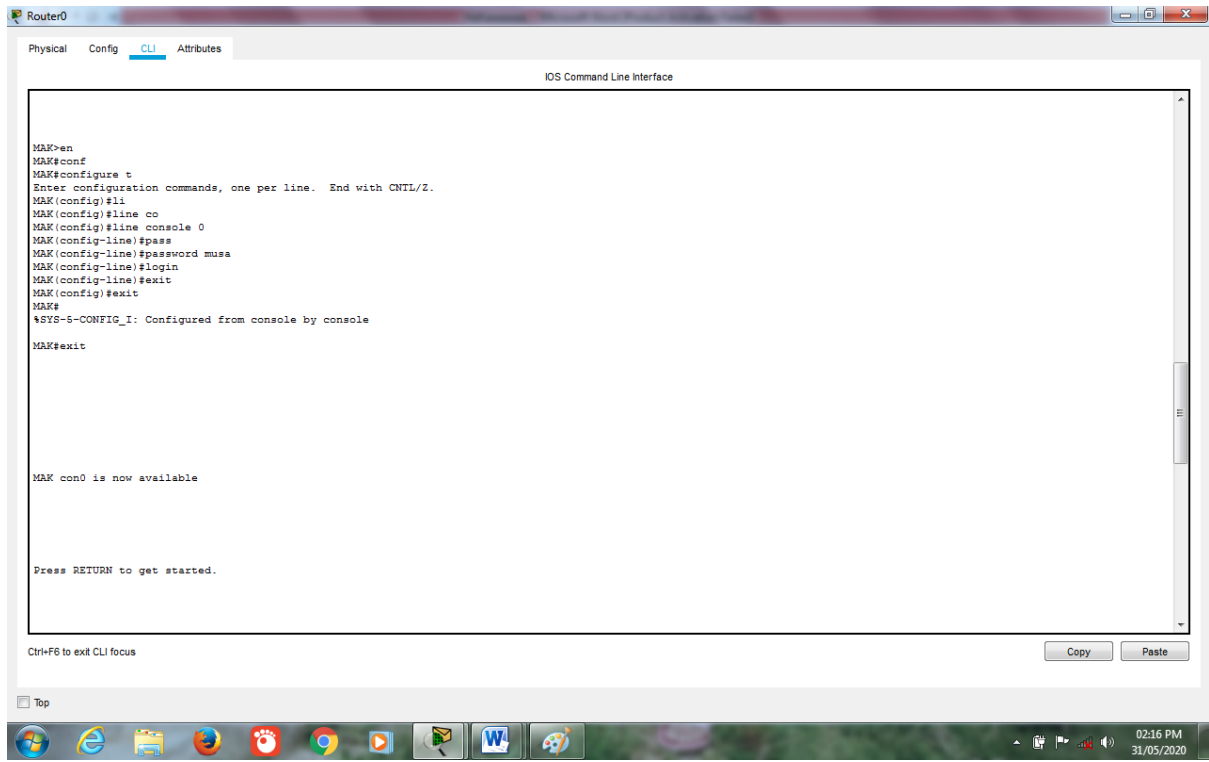
IP Addresses, Subnet Masks and Default Gateways of 3 PCs:

The screenshot shows the configuration window for PC1 in Cisco Packet Tracer. The window is titled "PC1" and has tabs for Physical, Config, Desktop, Programming, and Attributes. The "Config" tab is selected, and the "IP Configuration" section is expanded. The configuration is as follows:

Section	Option	Value
IP Configuration	Static	<input checked="" type="radio"/>
	IP Address	192.168.0.1
	Subnet Mask	255.255.255.0
	Default Gateway	192.168.0.10
	DNS Server	0.0.0.0
IPv6 Configuration	Static	<input checked="" type="radio"/>
	IPv6 Address	
	Link Local Address	FE80::260:2FFF:FEA8:7CA6
	IPv6 Gateway	
	IPv6 DNS Server	
802.1X	Use 802.1X Security	<input type="checkbox"/>
	Authentication	MDS
	Username	
	Password	



Enable Password on Router:



```
Router0
Physical Config CLI Attributes
IOS Command Line Interface

MAK>en
MAK#conf
MAK#configure t
Enter configuration commands, one per line. End with CNTL/Z.
MAK(config)#li
MAK(config)#line co
MAK(config)#line console 0
MAK(config-line)#pass
MAK(config-line)#password musa
MAK(config-line)#login
MAK(config-line)#exit
MAK(config)#exit
MAK#
!SYS-5-CONFIG_I: Configured from console by console
MAK#exit

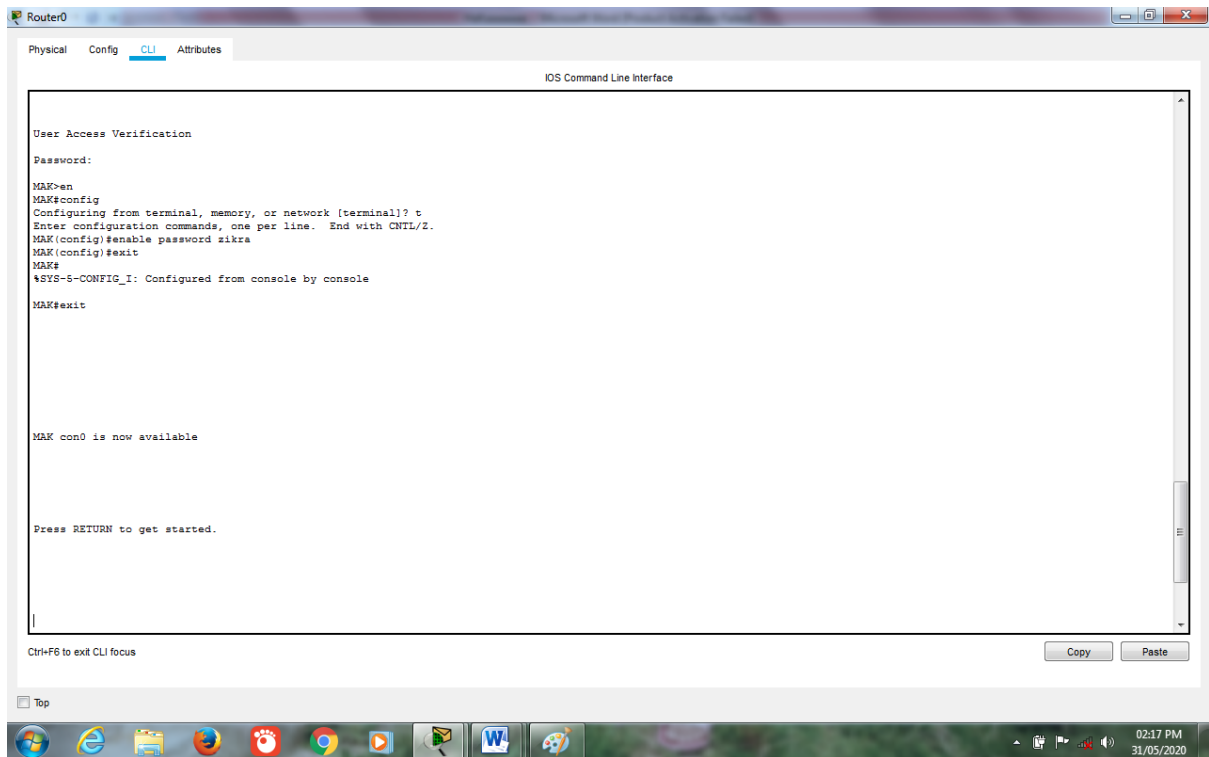
MAK con0 is now available

Press RETURN to get started.

Ctrl+F6 to exit CLI focus
Copy Paste
```

Top

02:16 PM 31/05/2020



```
Router0
Physical Config CLI Attributes
IOS Command Line Interface

User Access Verification
Password:
MAK>en
MAK#conf
Configuring from terminal, memory, or network [terminal]? t
Enter configuration commands, one per line. End with CNTL/Z.
MAK(config)#enable password zikra
MAK(config)#exit
MAK#
!SYS-5-CONFIG_I: Configured from console by console
MAK#exit

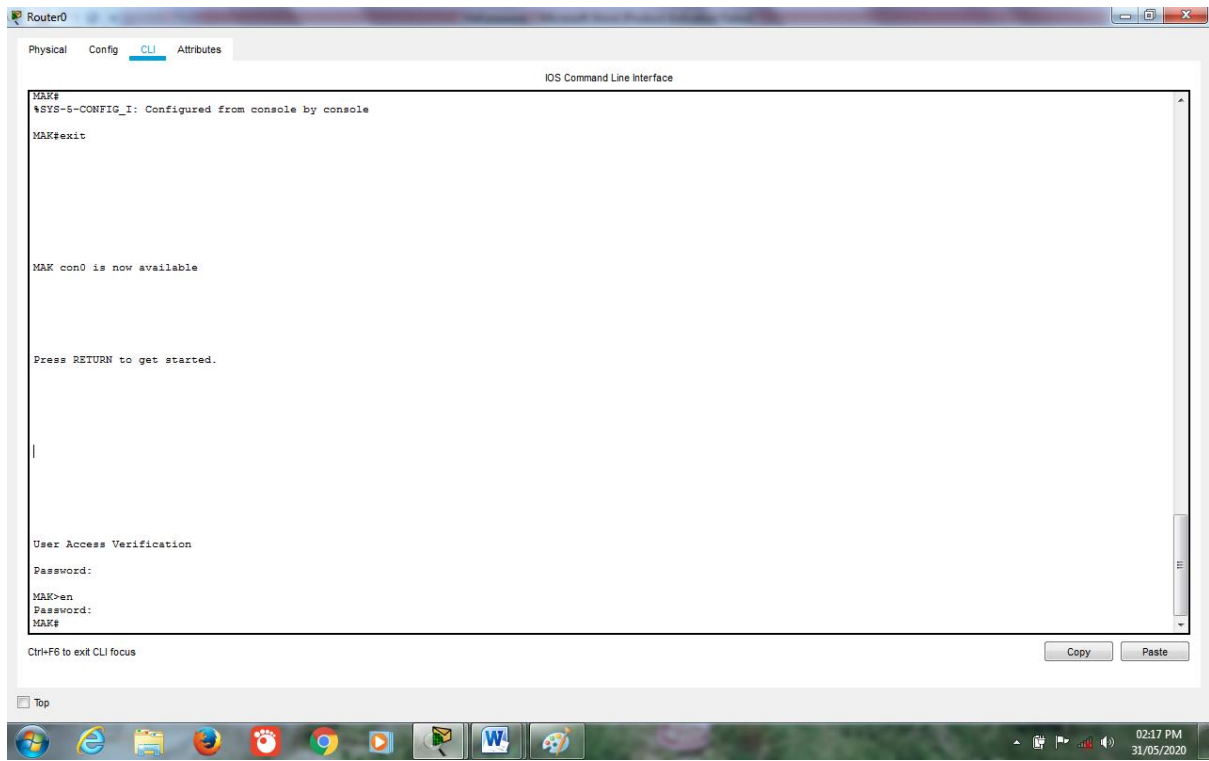
MAK con0 is now available

Press RETURN to get started.

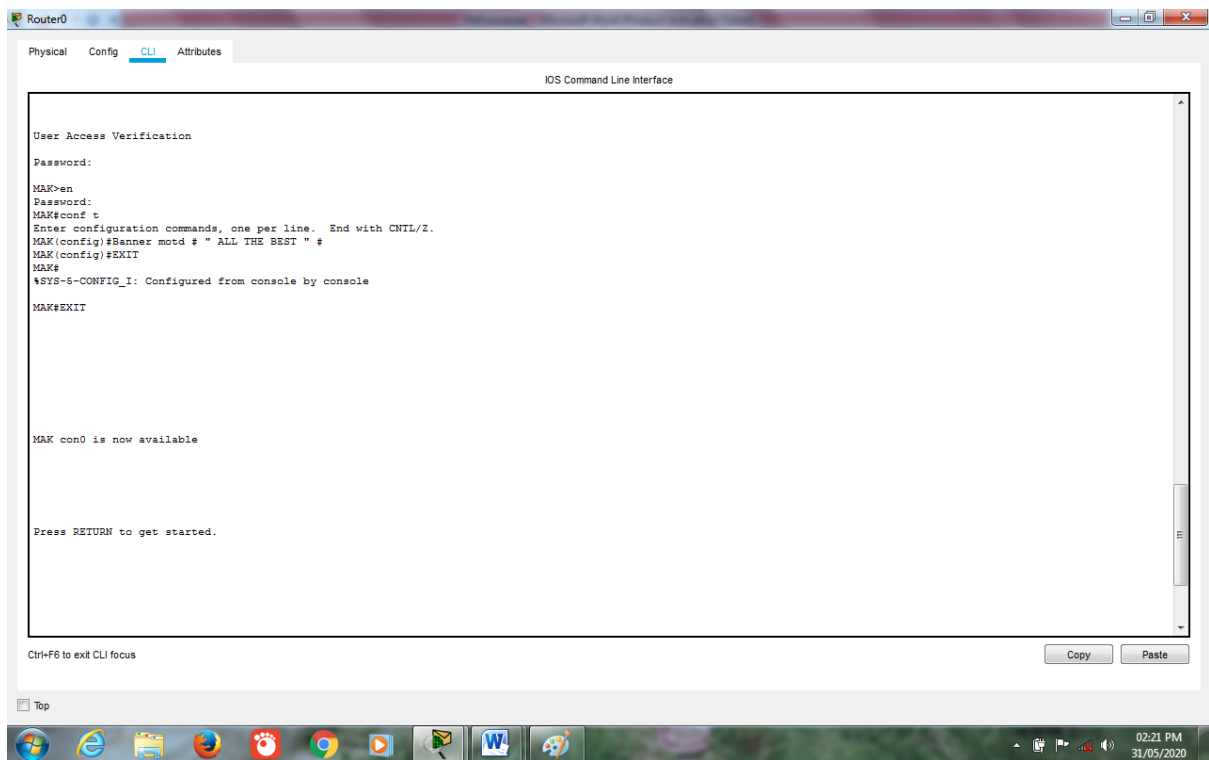
Ctrl+F6 to exit CLI focus
Copy Paste
```

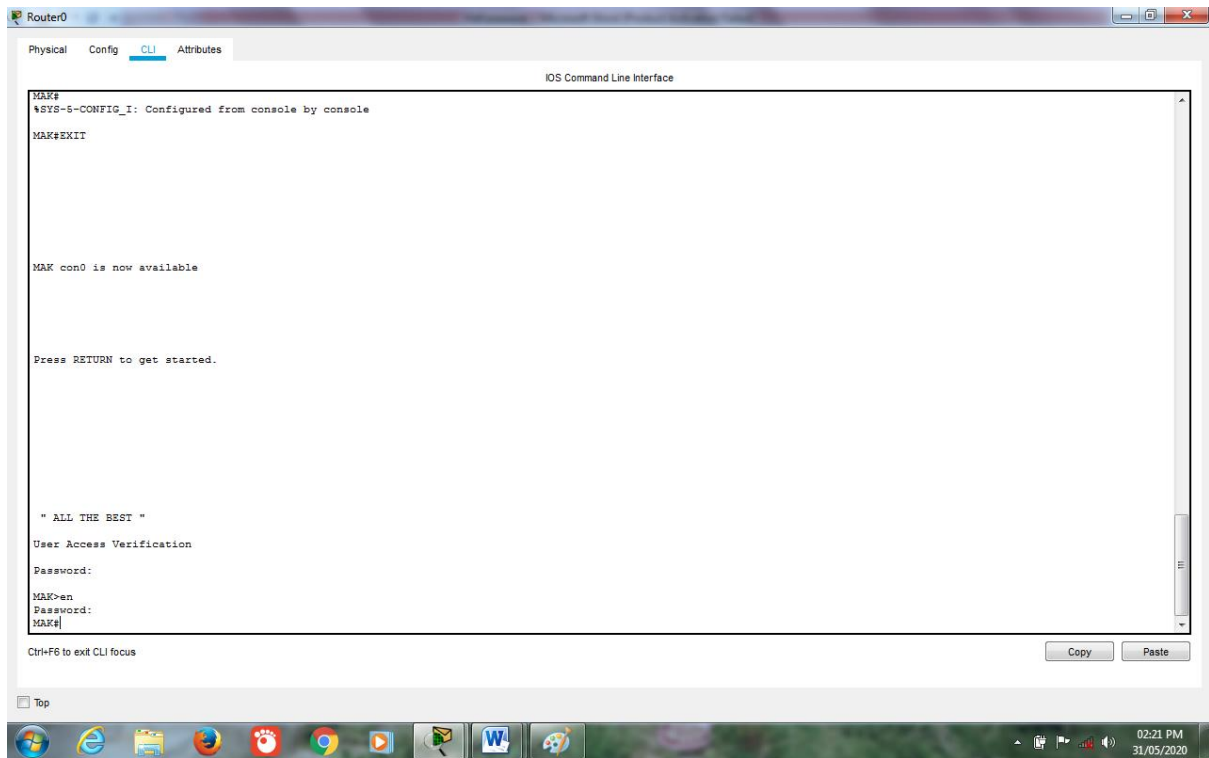
Top

02:17 PM 31/05/2020

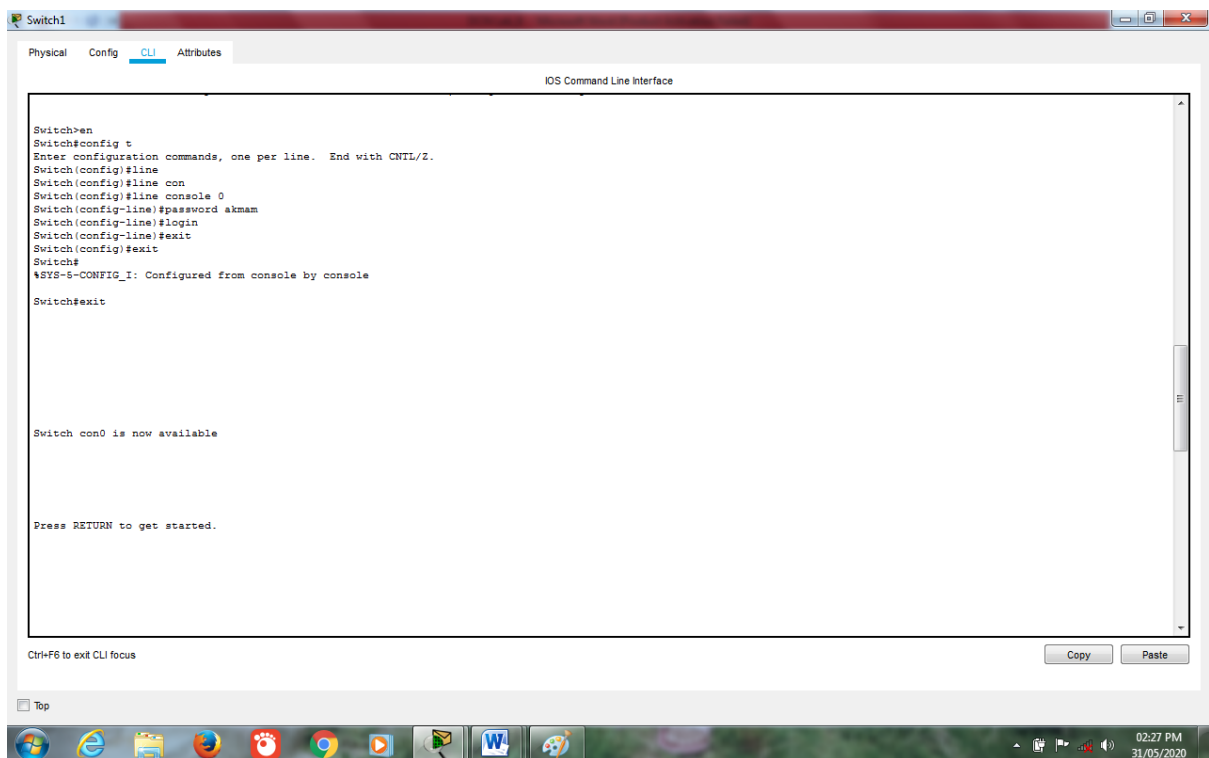


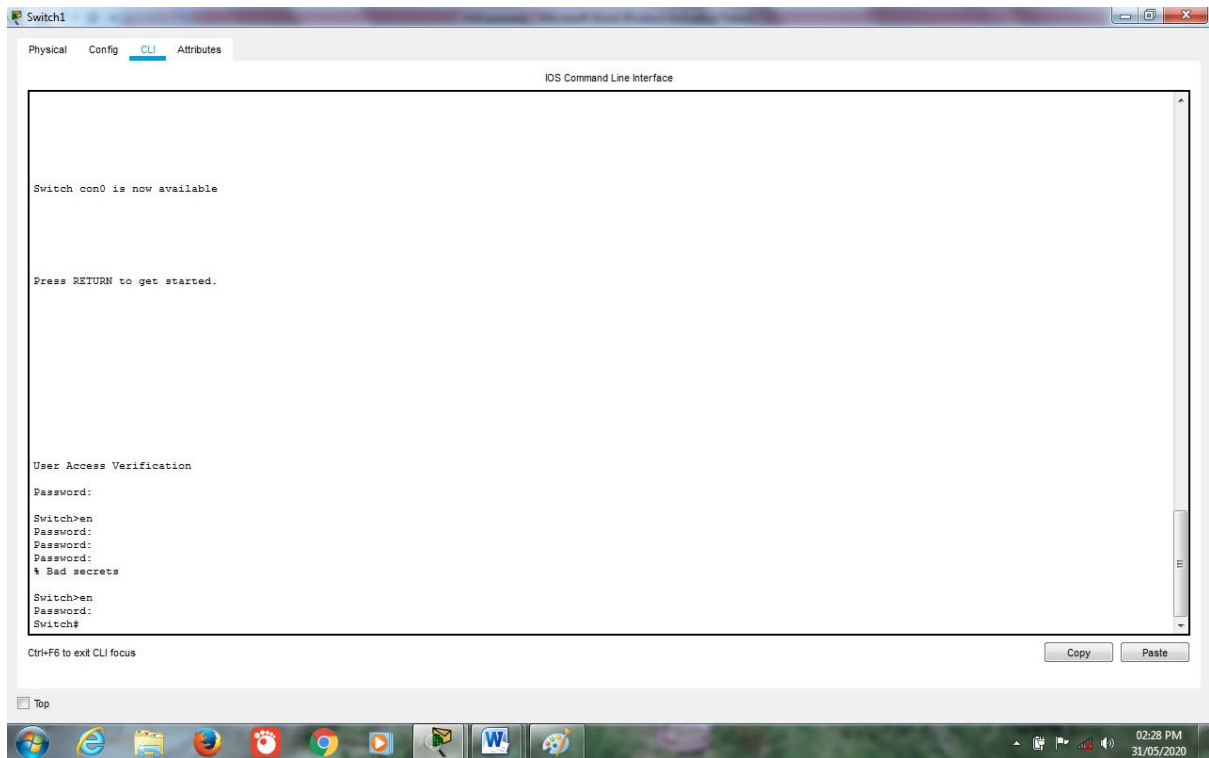
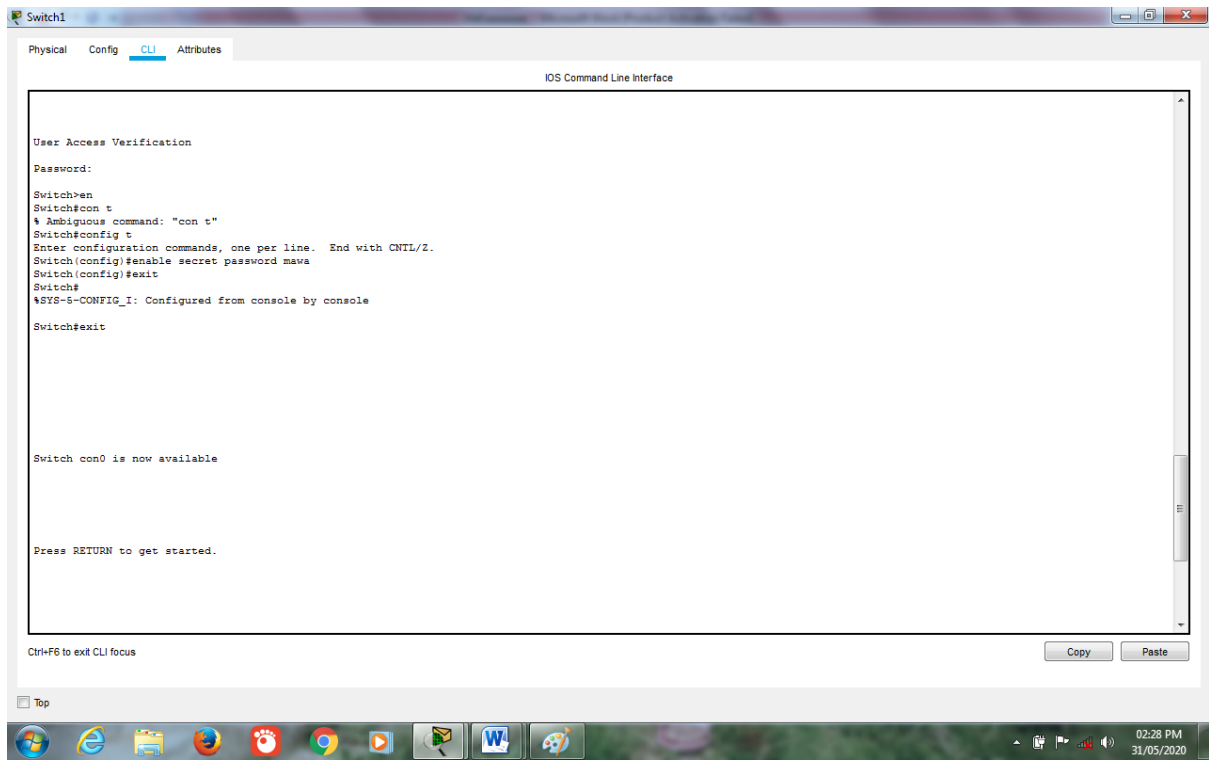
Banner on Router:



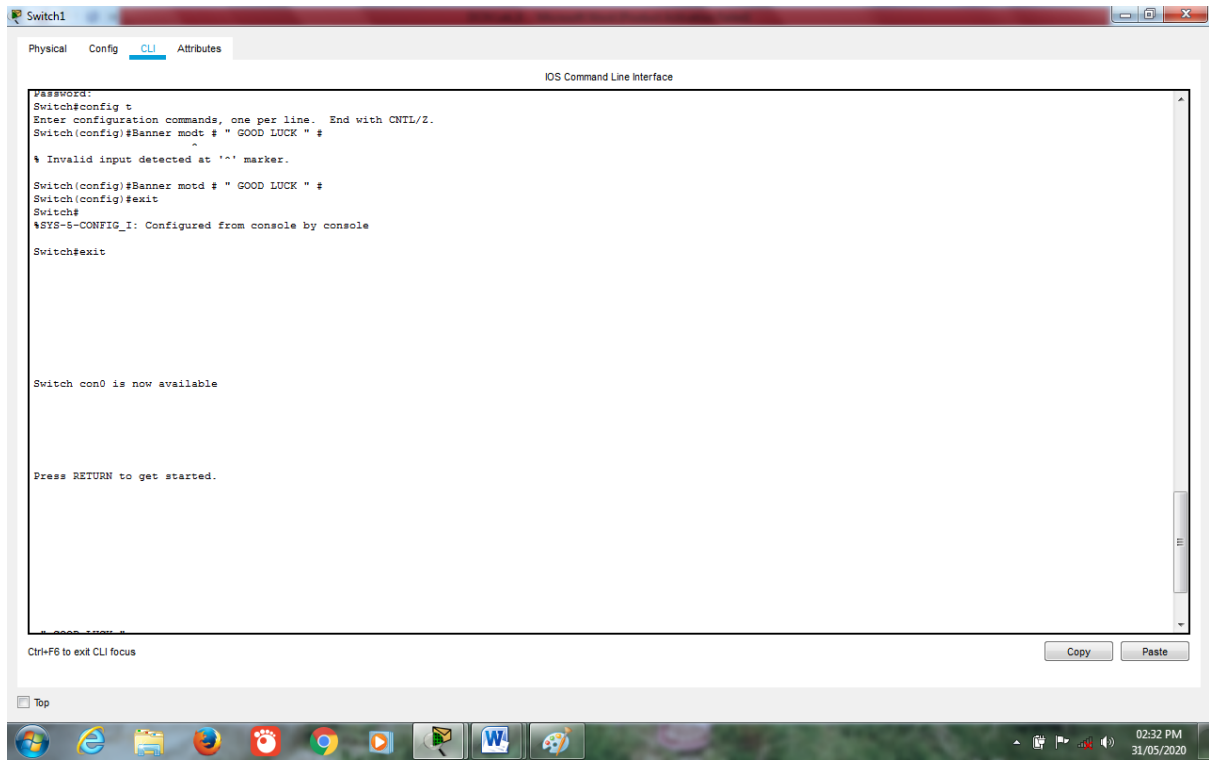


Enable Password on Switch:





Banner on Switch:



The screenshot shows a Windows desktop with a terminal window titled "Switch1" running the IOS Command Line Interface. The terminal output is as follows:

```
Switch1
Physical Config CLI Attributes
IOS Command Line Interface

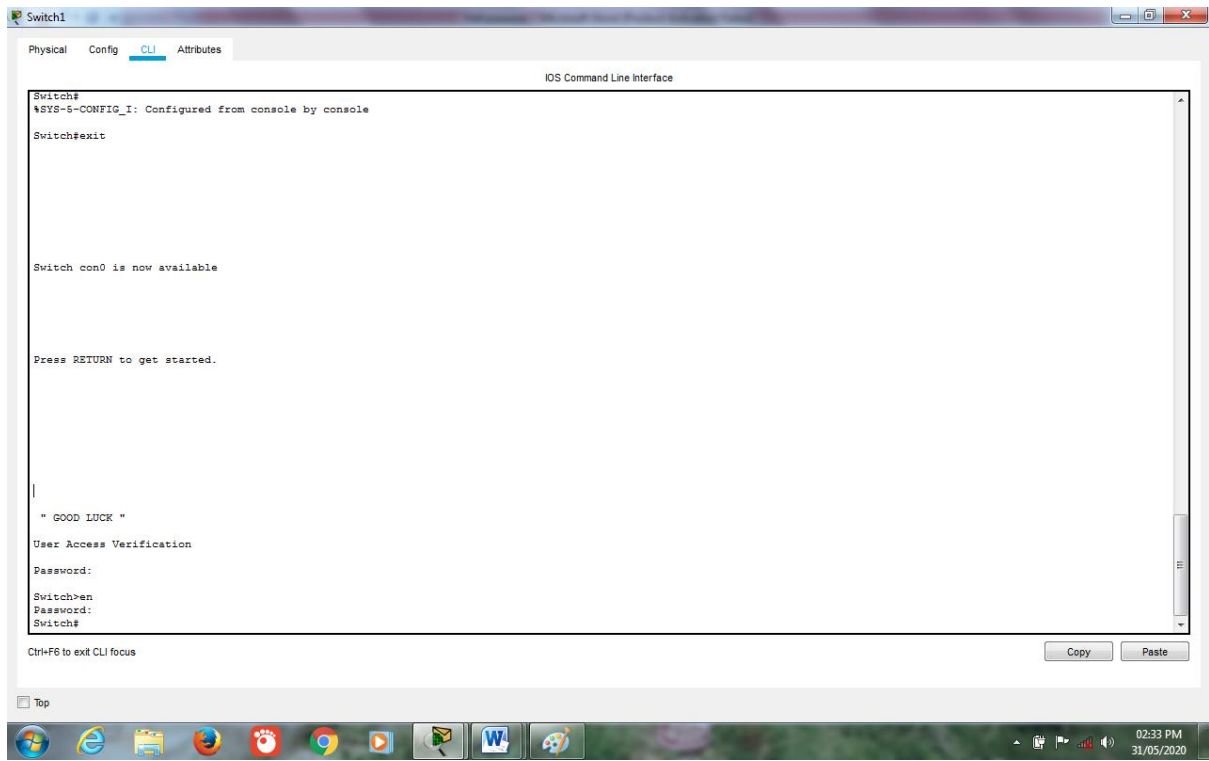
Password:
Switch#config t
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#Banner motd # " GOOD LUCK " #
% Invalid input detected at '^' marker.

Switch(config)#Banner motd # " GOOD LUCK " #
Switch(config)#exit
Switch#
%SYS-5-CONFIG_I: Configured from console by console
Switch#exit

Switch con0 is now available

Press RETURN to get started.
```

At the bottom of the terminal window, there are "Copy" and "Paste" buttons. The Windows taskbar at the bottom shows the time as 02:32 PM on 31/05/2020.



The screenshot shows the same "Switch1" terminal window. The terminal output is as follows:

```
Switch#
%SYS-5-CONFIG_I: Configured from console by console
Switch#exit

Switch con0 is now available

Press RETURN to get started.

" GOOD LUCK "
User Access Verification
Password:
Switch#en
Password:
Switch#
```

At the bottom of the terminal window, there are "Copy" and "Paste" buttons. The Windows taskbar at the bottom shows the time as 02:33 PM on 31/05/2020.

<<THE END>>