

# Task-7

7a). Configure and implementation of a Router within a Network using Packet Tracer.

## Step 1: Set Up the Network Topology

1. **Open Packet Tracer:** Launch Cisco Packet Tracer.
2. **Add Devices:**
  - Drag and drop a router (e.g., 2911 or any suitable model) onto the workspace.
  - Add a couple of PCs (end devices) for testing connectivity.
  - Optionally, you can add switches if you need to connect multiple PCs.
  - Need to provide Default Gateway(i.e. Router interface IP address)

(The **default gateway** is the node that forwards the packet from the source to other **networks**)

PC0

Physical Config **Desktop** Programming Attributes

IP Configuration X

Interface FastEthernet0

IP Configuration

☐ DHCP ☒ Static

IPv4 Address 192.168.10.2

Subnet Mask 255.255.255.0

Default Gateway 192.168.10.1

DNS Server 0.0.0.0

IPv6 Configuration

☐ Automatic ☒ Static

IPv6 Address /

Link Local Address FE80::203:E4FF:FE12:BE8C

Default Gateway

DNS Server

802.1X

☐ Use 802.1X Security

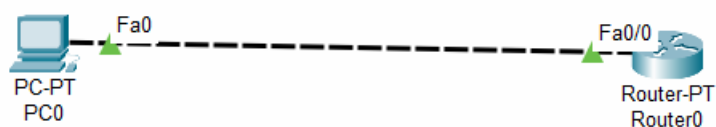
Authentication MD5

Username

Password

### 3. Connect Devices:

- Use the connection tool (cable icon) to connect the devices. For example, connect the PCs to a switch and the switch to the router.
- Use appropriate cables



## Step 2: Configure the Router

### 1. Access the Router CLI:

- Click on the router and go to the "CLI" tab.

## 2. Enter Configuration Mode:

Configure ip address of pc→192.168.10.2

```
Router>en
```

```
Router#conf t
```

Enter configuration commands, one per line. End with CNTL/Z.

```
Router(config)#int Fa0/0
```

```
Router(config-if)#ip address 192.168.10.1 255.255.255.0
```

```
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#en
```

```
Router#conf t
```

Enter configuration commands, one per line. End with CNTL/Z.

```
Router(config)#enable secret griet1234
```

```
Router(config)#login
```

```
Router(config)#no ip domain-lookup
```

```
Router(config)#exit
```

```
Router#
```

%SYS-5-CONFIG\_I: Configured from console by console

```
Router#conf t
```

Enter configuration commands, one per line. End with CNTL/Z.

```
Router(config)#line console 0
```

```
Router(config-line)#password 1234
```

```
Router(config-line)#login
```

```
Router(config-line)#exit
```

```
Router(config)#line vty 0 4
```

```
Router(config-line)#password g1234
```

```
Router(config-line)#login
```

```
Router(config-line)#exit
```

```
Router(config)#
```

```
Router(config)#exit
```

```
Router#
```

%SYS-5-CONFIG\_I: Configured from console by console

```
Router#exit
```

Router con0 is now available

Press RETURN to get started.

### Step 3: To test the console and enable secret passwords

User Access Verification

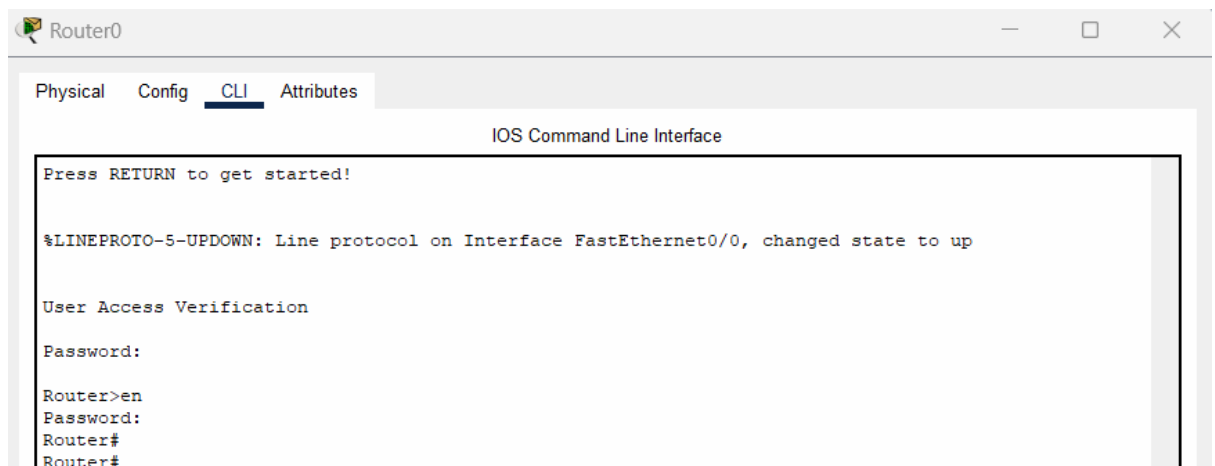
Password: 1234

Router>en

Password: griet1234

Router#exit

**Note:** To verify password, need to exit from all commands and enter into user mode

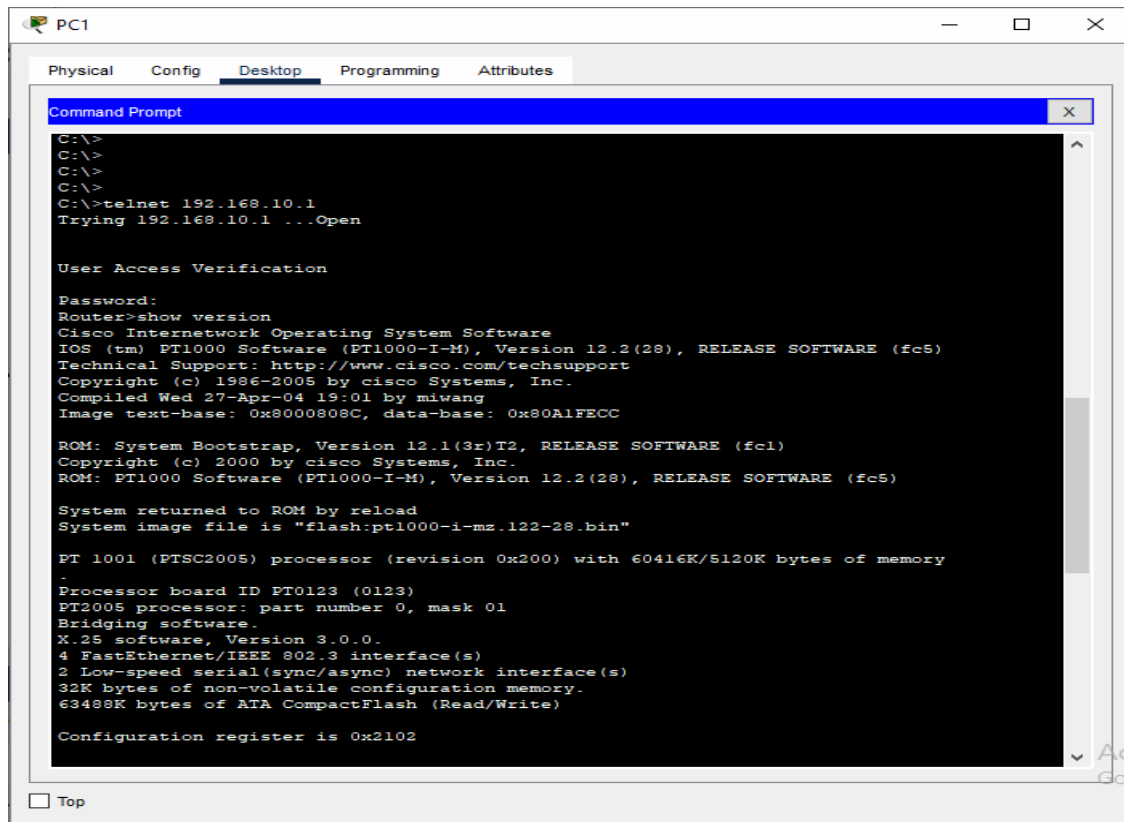


### Step 4: To test vty password

Goto pc ->command prompt

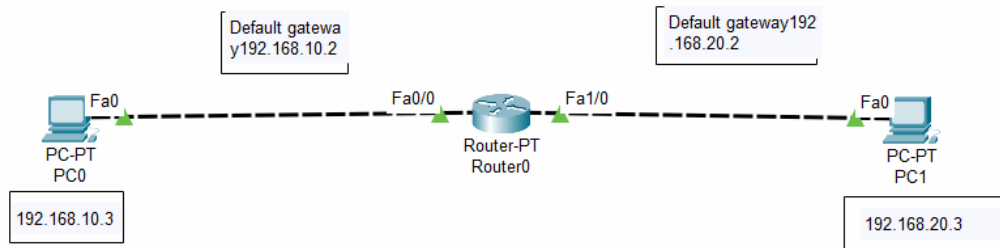
Need to give password of Vty

telnet 192.168.10.1(this is router ip)



### Sub-task:

Same as above to implement PC to PC communication using Router



**Configure ip address of pc → 192.168.10.2**

**Configure router below steps**

Router>en

Router#conf t

Enter configuration commands, one per line. End with CNTL/Z.

Router(config)#int Fa0/0

Router(config-if)#ip address 192.168.10.1 255.255.255.0

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

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**[optional to add]**

The screenshot shows a configuration window for a PC1. The 'Desktop' tab is selected. The 'IP Configuration' section is active, showing settings for the 'FastEthernet0' interface. The 'Static' radio button is selected for both IPv4 and IPv6 configurations. The IPv4 address is 192.168.20.5, subnet mask is 255.255.255.0, and default gateway is 192.168.20.4. The IPv6 address is empty, but the link local address is FE80::20A:41FF:FE65:C47E. The 802.1X section is also visible, with 'Use 802.1X Security' unchecked and 'Authentication' set to MD5.

IP Configuration	
Interface	FastEthernet0
IP Configuration	
<input type="radio"/> DHCP	<input checked="" type="radio"/> Static
IPv4 Address	192.168.20.5
Subnet Mask	255.255.255.0
Default Gateway	192.168.20.4
DNS Server	0.0.0.0
IPv6 Configuration	
<input type="radio"/> Automatic	<input checked="" type="radio"/> Static
IPv6 Address	
Link Local Address	FE80::20A:41FF:FE65:C47E
Default Gateway	
DNS Server	
802.1X	
<input type="checkbox"/> Use 802.1X Security	
Authentication	MD5
Username	
Password	

**Router(config-if)#exit**

**Router(config)#int Fa1/0**

**Router(config-if)#ip address 192.168.20.2 255.255.255.0**

**Router(config-if)#no shutdown**

**Router(config-if)#**

**%LINK-5-CHANGED: Interface FastEthernet1/0, changed state to up**

**Router(config-if)#exit**

**Router(config)#exit**

**Router#**

**%SYS-5-CONFIG\_I: Configured from console by console**

**Router#**

**%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet1/0, changed state to up**

**|**

**Router#en**

**Router#conf t**

Enter configuration commands, one per line. End with CNTL/Z.

**Router(config)#enable secret griet1234**

**Router(config)#login**

**Router(config)#no ip domain-lookup**

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

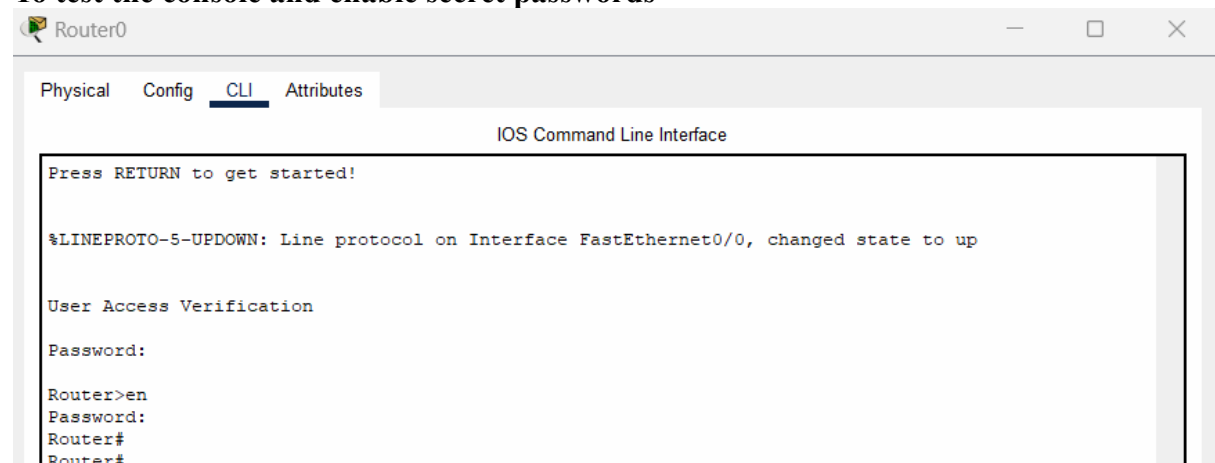
```
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#line console 0
Router(config-line)#password 1234
Router(config-line)#login
Router(config-line)#exit
Router(config)#line vty 0 4
Router(config-line)#password g1234
Router(config-line)#login
Router(config-line)#exit
Router(config)#
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console
```

```
Router#exit
```

Router con0 is now available

Press RETURN to get started.

### To test the console and enable secret passwords



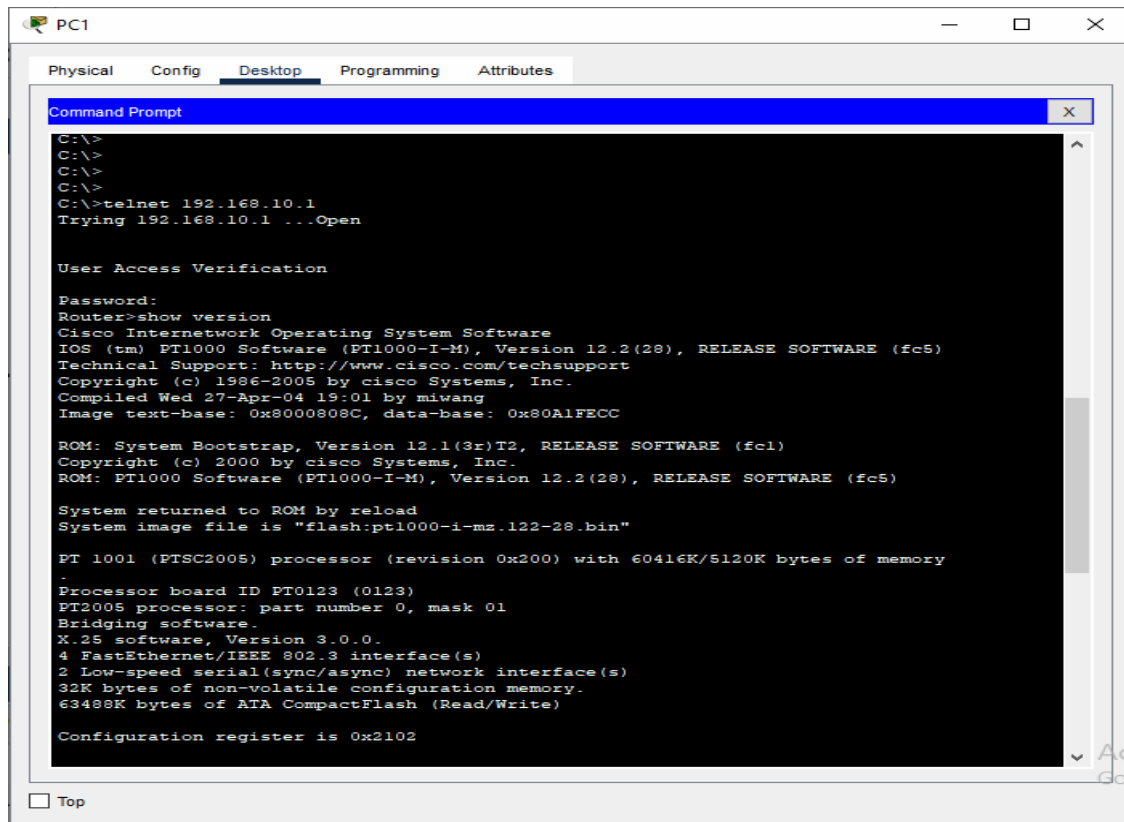
User Access Verification

Password: 1234

```
Router>en
Password: griet1234
Router#exit
```

### To test vty password





Goto pc ->command prompt

telnet 192.168.10.1(this is router ip)

## Test Connectivity

- **Ping** from one PC to another (e.g., from **PC0** to **PC1**) to ensure static routing is functioning properly.

