

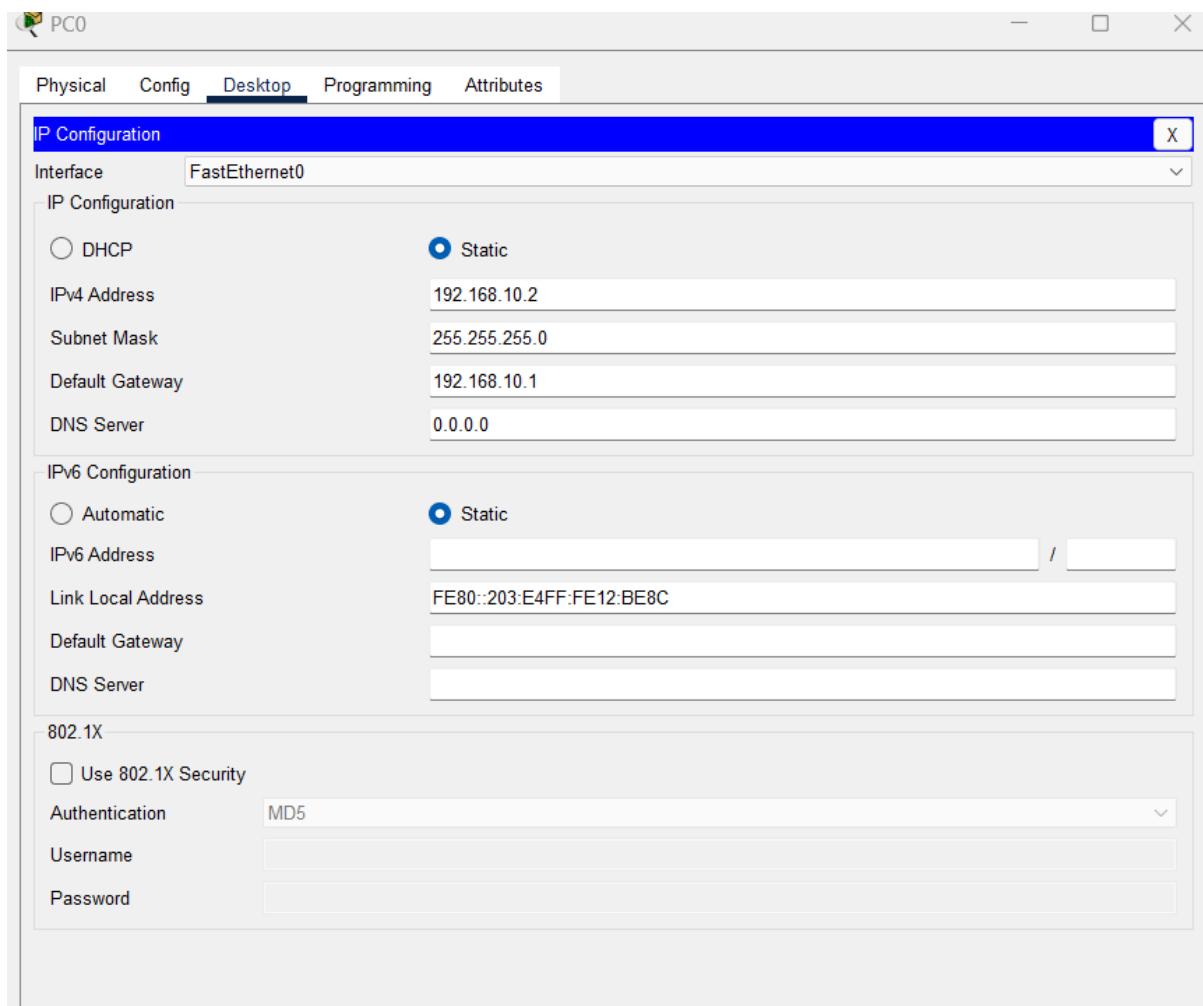
# Task-7

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

## Step 1: Set Up the Network Topology

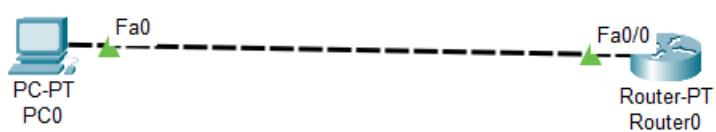
1. **Open Packet Tracer:** Launch Cisco Packet Tracer.
2. **Add Devices:**
  - Drag and drop a router (PT router) onto the workspace.
  - Add a couple of PCs (end devices) for testing connectivity.
  - Optionally, you can add switches if you need to connect multiple PCs.
  - Need to provide Default Gateway(i.e.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

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



### 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.
```

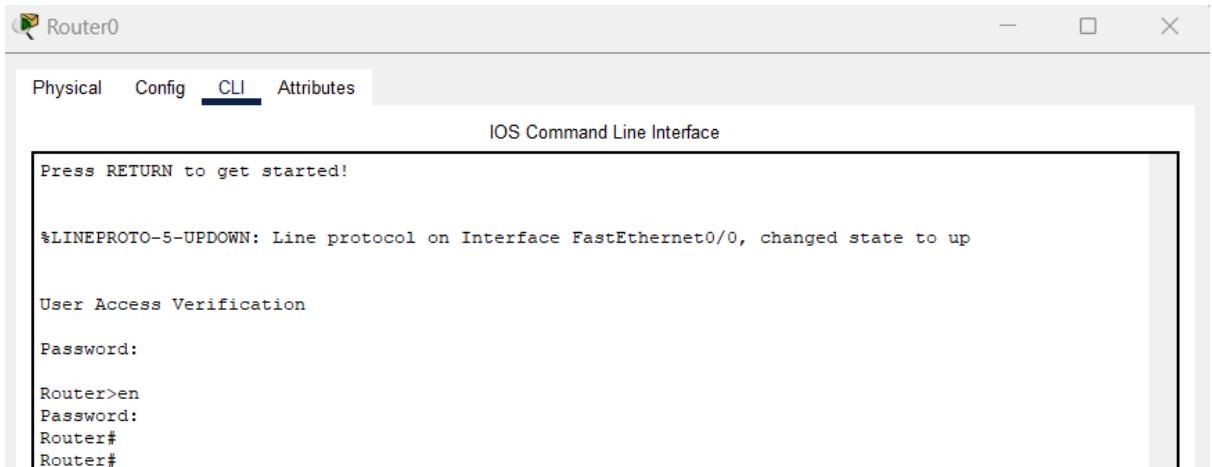
### **Step 3: To test the console and enable secret passwords**

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



Router0

Physical Config **CLI** Attributes

IOS Command Line Interface

```
Press RETURN to get started!  
  
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up  
  
User Access Verification  
Password:  
Router>en  
Password:  
Router#  
Router#
```

### **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)

PC1

Physical Config Desktop Programming Attributes

Command Prompt

```
C:\>
C:\>
C:\>
C:\>
C:\>telnet 192.168.10.1
Trying 192.168.10.1 ...Open

User Access Verification

Password:
Router>show version
Cisco Internetwork Operating System Software
IOS (tm) PT1000 Software (PT1000-I-M), Version 12.2(28), RELEASE SOFTWARE (fc5)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 1986-2005 by cisco Systems, Inc.
Compiled Wed 27-Apr-04 19:01 by miwang
Image text-base: 0x80000808C, data-base: 0x80A1FECC

ROM: System Bootstrap, Version 12.1(3r)T2, RELEASE SOFTWARE (fc1)
Copyright (c) 2000 by cisco Systems, Inc.
ROM: PT1000 Software (PT1000-I-M), Version 12.2(28), RELEASE SOFTWARE (fc5)

System returned to ROM by reload
System image file is "flash:pt1000-i-mz.122-28.bin"

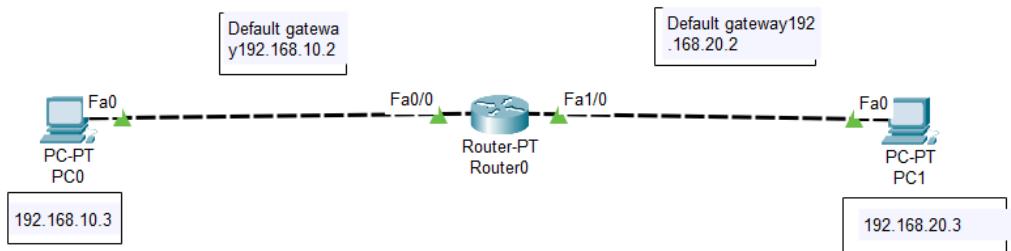
PT 1001 (PTSC2005) processor (revision 0x200) with 60416K/5120K bytes of memory
.
Processor board ID PT0123 (0123)
PT2005 processor: part number 0, mask 01
Bridging software.
X.25 software, Version 3.0.0.
4 FastEthernet/IEEE 802.3 interface(s)
2 Low-speed serial(sync/async) network interface(s)
32K bytes of non-volatile configuration memory.
63488K bytes of ATA CompactFlash (Read/Write)

Configuration register is 0x2102

 Top
```

### **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

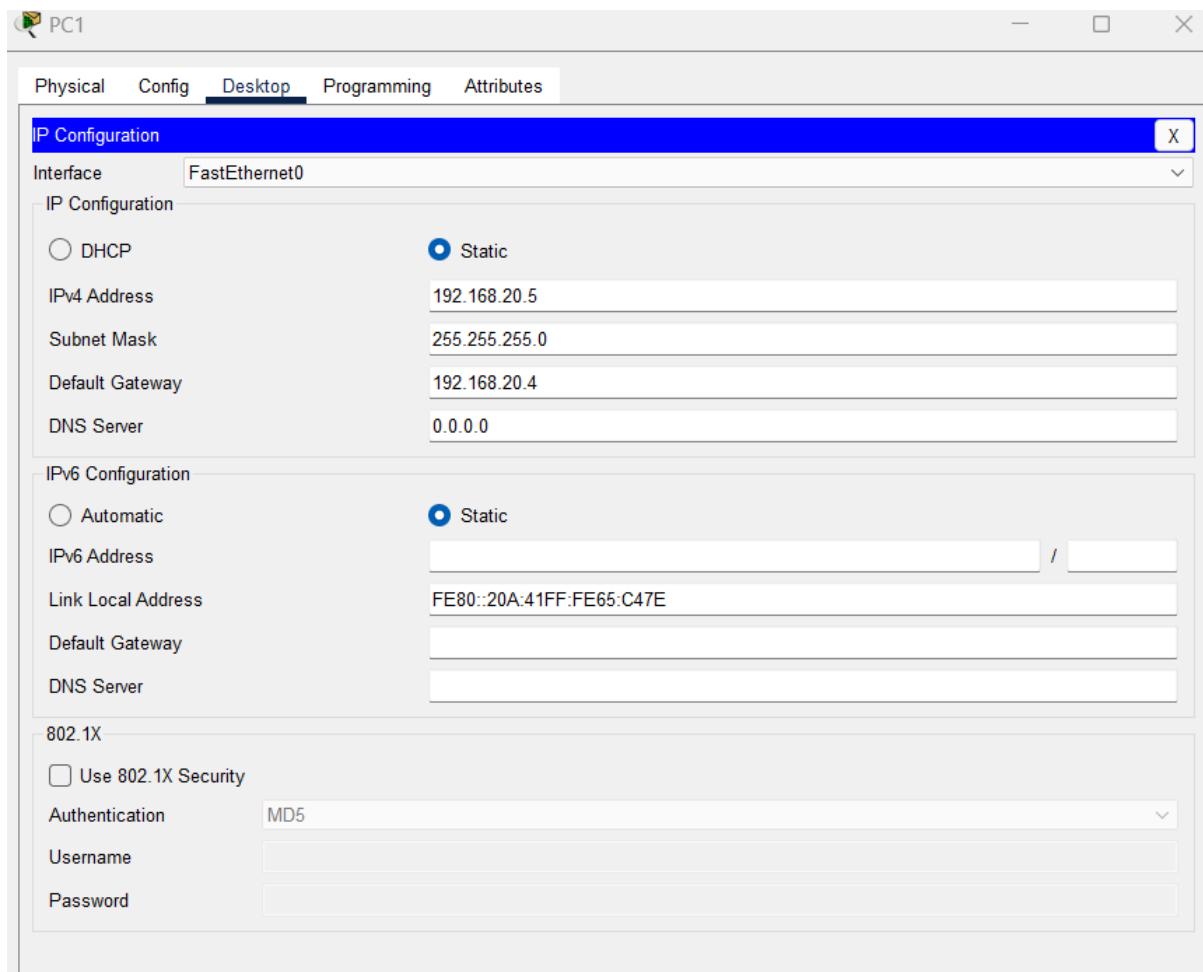
Router(config-if)#

%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up

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

---

**[optional to add**



**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
```

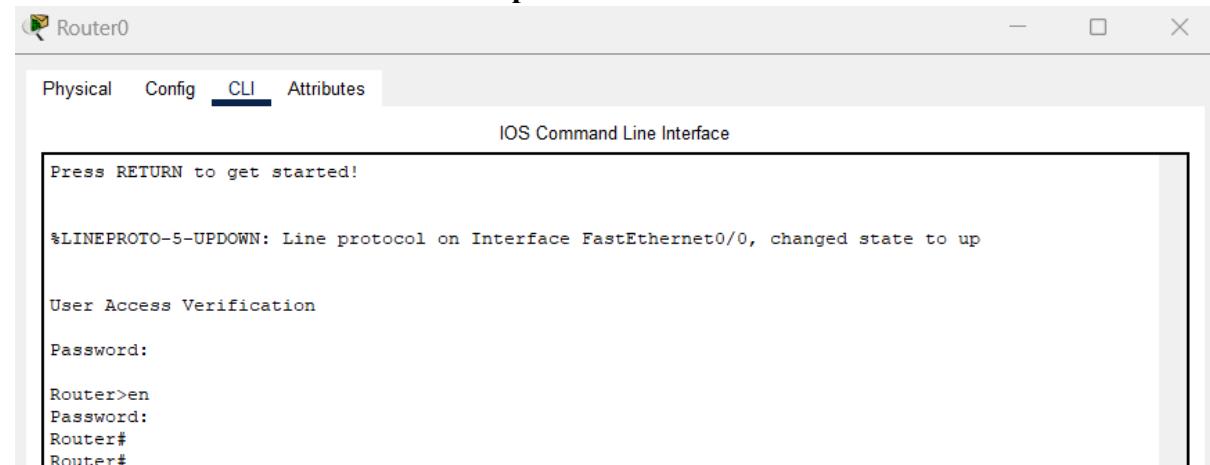
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Enter configuration commands, one per line. End with CNTL/Z.  
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Router(config-line)#exit  
Router(config)#line vty 0 4  
Router(config-line)#password g1234  
Router(config-line)#login  
Router(config-line)#exit  
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



```
Router0  
Physical Config CLI Attributes  
IOS Command Line Interface  
Press RETURN to get started!  
  
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up  
  
User Access Verification  
Password:  
Router>en  
Password:  
Router#  
Router#
```

User Access Verification

Password: 1234

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

### To test vty password

The screenshot shows a Windows desktop window titled "PC1". Inside, there is a tab bar with "Physical", "Config", **Desktop**, "Programming", and "Attributes". A "Command Prompt" window is open, showing the following text:

```
C:\>
C:\>
C:\>
C:\>
C:\>telnet 192.168.10.1
Trying 192.168.10.1 ...Open

User Access Verification

Password:
Router>show version
Cisco Internetwork Operating System Software
IOS (tm) PT1000 Software (PT1000-I-M), Version 12.2(28), RELEASE SOFTWARE (fc5)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 1986-2005 by cisco Systems, Inc.
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4 FastEthernet/IEEE 802.3 interface(s)
2 Low-speed serial(sync/async) network interface(s)
32K bytes of non-volatile configuration memory.
63488K bytes of ATA CompactFlash (Read/Write)

Configuration register is 0x2102
```

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.

PC0

Physical Config Desktop Programming Attributes

Command Prompt X

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.20.3

Pinging 192.168.20.3 with 32 bytes of data:

Request timed out.
Reply from 192.168.20.3: bytes=32 time<1ms TTL=127
Reply from 192.168.20.3: bytes=32 time<1ms TTL=127
Reply from 192.168.20.3: bytes=32 time<1ms TTL=127

Ping statistics for 192.168.20.3:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>
```