

COMPUTER NETWORK PRACTICUM PRACTICUM 2



Writed by :

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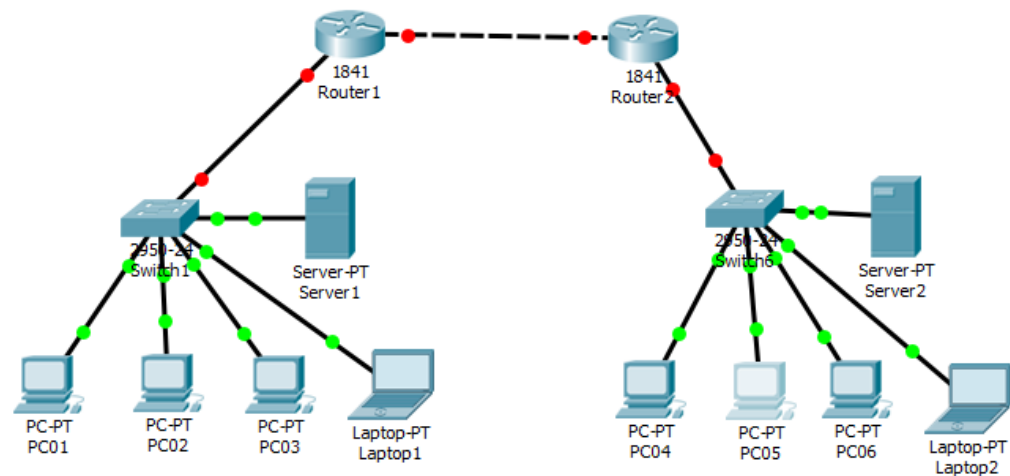
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Class : X

**INFORMATION TECHNOLOGY
FACULTY OF COMMUNICATION AND INFORMATICS
MUHAMMADIYAH UNIVERSITY OF SURAKARTA**

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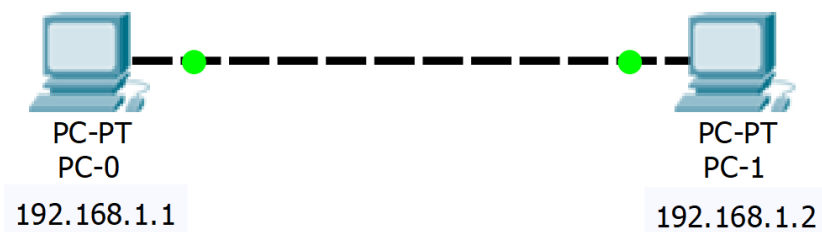
1. Activity 1



In the first activity there are router components, switches, and devices that are connected by connectors. Each connector has a lamp that symbolizes that the connector is connected. The red color represents the connector is not connected, the orange color represents the connector is being installed / the connection process, the green color represents the connector is connected.

2. Activity 2. Creating a Peer to Peer Network

- Creating a network design



- Set IP

The screenshot shows the 'IP Configuration' window in a network management tool. The window has tabs for 'Physical', 'Config', 'Desktop', 'Programming', and 'Attributes'. The 'Config' tab is selected. The window title is 'IP Configuration'. The 'IP Configuration' section is expanded, showing the 'Static' radio button selected. The 'IP Address' field is set to '192.168.1.1', the 'Subnet Mask' is '255.255.255.0', the 'Default Gateway' is '0.0.0.0', and the 'DNS Server' is '0.0.0.0'.

Physical Config Desktop Programming Attributes

IP Configuration

IP Configuration

☐ DHCP ☒ Static

IP Address: 192.168.1.2

Subnet Mask: 255.255.255.0

Default Gateway: 0.0.0.0

DNS Server: 0.0.0.0

- Check the connection by pinging from one PC and entering another PC's IP

PC-1

Physical Config Desktop Programming Attributes

Command Prompt

```

Packet Tracer PC Command Line 1.0
C:\>ping 192.168.1.1

Pinging 192.168.1.1 with 32 bytes of data:

Reply from 192.168.1.1: bytes=32 time=131ms TTL=128
Reply from 192.168.1.1: bytes=32 time<1ms TTL=128
Reply from 192.168.1.1: bytes=32 time<1ms TTL=128
Reply from 192.168.1.1: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.1.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 131ms, Average = 32ms

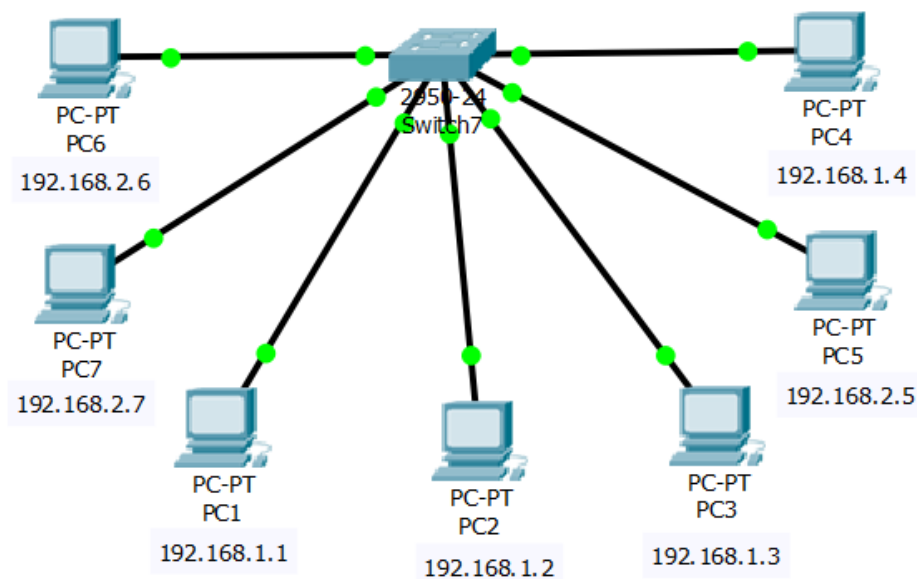
C:\>

```

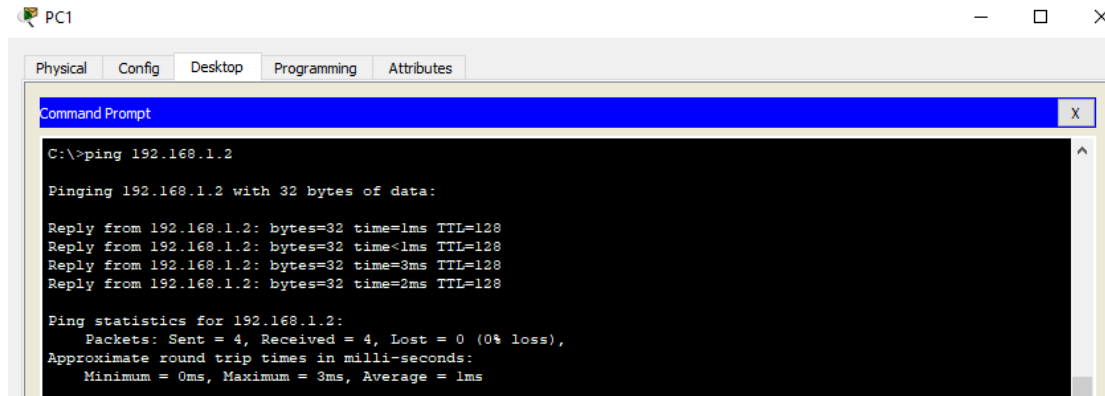
Peer to peer two workstations there are no obstacles. Each connection can be proven by pinging each other successfully and there is no RTO as shown in the message column.

3. Activity 3. Make a network with a switch

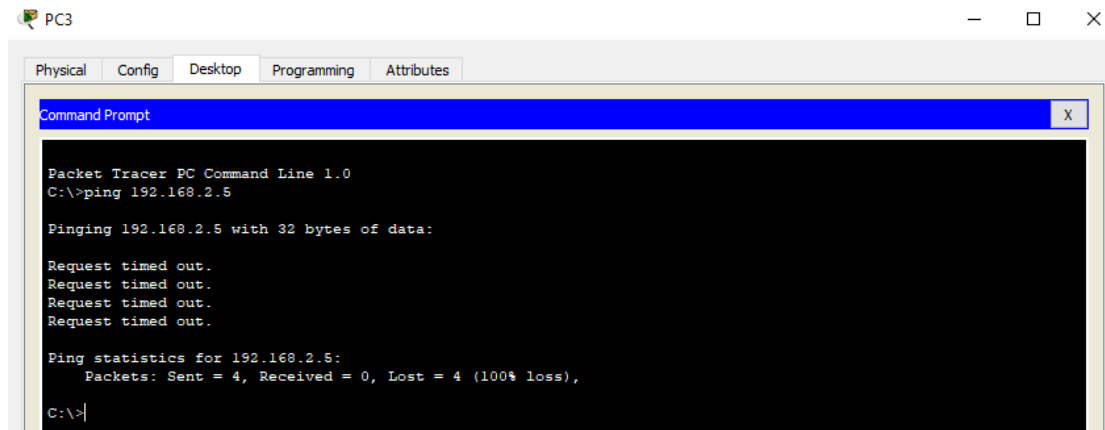
- Picture of network design by division of IP



- Check the ping connection from PC 1 to PC 2. And the connection can be connected



- Check ping connections from PC 3 to PC 3. And RTO connections due to differences in different networks.

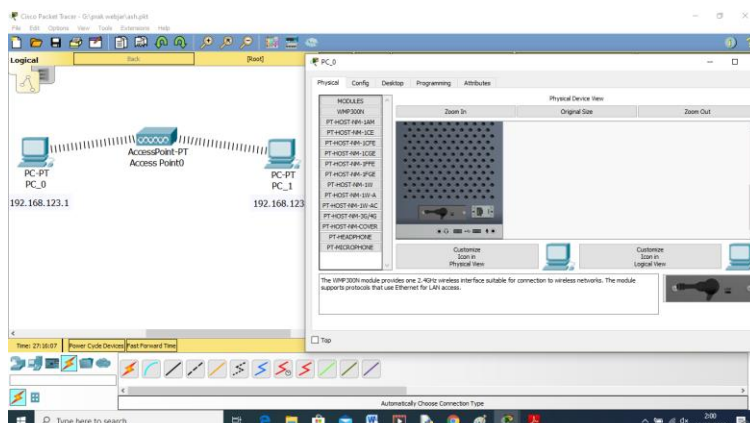


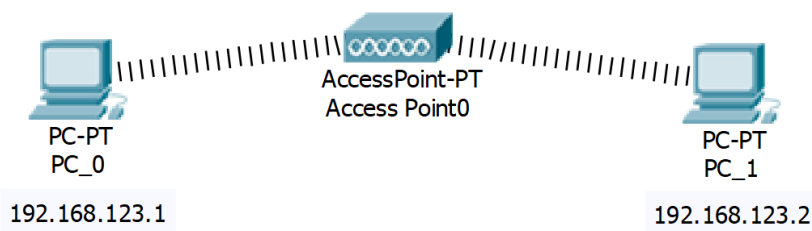
After the circuit is complete, ping between:

- PC1 to PC2 : is clear without any constraints.
- PC3 to PC5 : experiences RTO due to differences in network ID.

4. Activity 4. Wireless Network

- Network design using Access points with IP divisions.





- Ping to check and the connection results are connected

```

Packet Tracer PC Command Line 1.0
C:\>PING 192.168.123.2

Pinging 192.168.123.2 with 32 bytes of data:

Reply from 192.168.123.2: bytes=32 time=42ms TTL=128
Reply from 192.168.123.2: bytes=32 time=14ms TTL=128
Reply from 192.168.123.2: bytes=32 time=10ms TTL=128
Reply from 192.168.123.2: bytes=32 time=26ms TTL=128

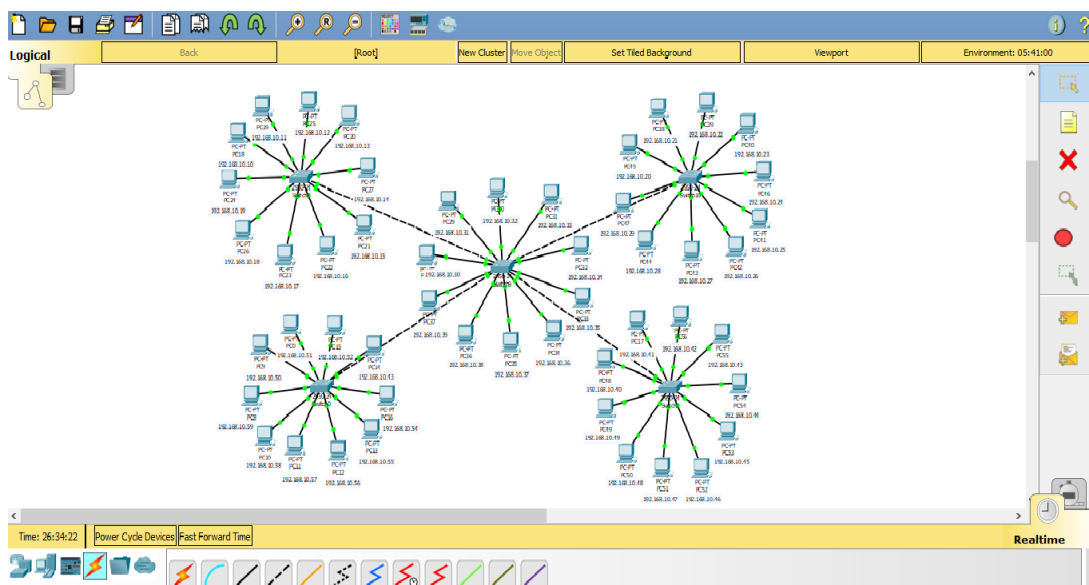
Ping statistics for 192.168.123.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 10ms, Maximum = 42ms, Average = 23ms

C:\>
  
```

Replacing computer components into wireless components and connecting 2 computers with wireless components. There are 1 access point and 2 workstations. Ping clearly without any problems.

ASSIGNMENT

- Network Design



- Check the connection by pinging from IP computer 192.168.10.10 to another computer that has a different connection switch

The screenshot shows a Cisco Packet Tracer network diagram with a central switch (S1) connected to multiple PCs. The network is divided into three main sections, each with its own switch (S1, S2, S3). The PCs are connected to these switches. The PC18 window is open, showing the Command Prompt with the following output:

```

Cisco Packet Tracer - G:\prak webjar\ash.pkt
File Edit Options View Tools Extensions Help

Logical [Root]

PC18
Physical Config Desktop Programming Attributes

Command Prompt
Packet Tracer PC Command Line 1.0
C:\>ping 192.168.10.33

Pinging 192.168.10.33 with 32 bytes of data:

Reply from 192.168.10.33: bytes=32 time=1ms TTL=128
Reply from 192.168.10.33: bytes=32 time=1ms TTL=128
Reply from 192.168.10.33: bytes=32 time=1ms TTL=128
Reply from 192.168.10.33: bytes=32 time=1ms TTL=128

Ping statistics for 192.168.10.33:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms

C:\>ping 192.168.10.43

Pinging 192.168.10.43 with 32 bytes of data:

Reply from 192.168.10.43: bytes=32 time=1ms TTL=128
Reply from 192.168.10.43: bytes=32 time=1ms TTL=128
Reply from 192.168.10.43: bytes=32 time=1ms TTL=128
Reply from 192.168.10.43: bytes=32 time=1ms TTL=128

Ping statistics for 192.168.10.43:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms
  
```

Time: 26:52:59 Power Cycle Devices Fast Forward Time Realtime

The screenshot shows the same Cisco Packet Tracer network diagram. The PC23 window is open, showing the Command Prompt with the following output:

```

Cisco Packet Tracer - G:\prak webjar\ash.pkt
File Edit Options View Tools Extensions Help

Logical [Root]

PC23
Physical Config Desktop Programming Attributes

Command Prompt
Packet Tracer PC Command Line 1.0
C:\>ping 192.168.10.37

Pinging 192.168.10.37 with 32 bytes of data:

Reply from 192.168.10.37: bytes=32 time=2ms TTL=128
Reply from 192.168.10.37: bytes=32 time=1ms TTL=128
Reply from 192.168.10.37: bytes=32 time=1ms TTL=128
Reply from 192.168.10.37: bytes=32 time=1ms TTL=128

Ping statistics for 192.168.10.37:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 2ms, Average = 7ms

C:\>ping 192.168.10.58

Pinging 192.168.10.58 with 32 bytes of data:

Reply from 192.168.10.58: bytes=32 time=1ms TTL=128
Reply from 192.168.10.58: bytes=32 time=1ms TTL=128
Reply from 192.168.10.58: bytes=32 time=1ms TTL=128
Reply from 192.168.10.58: bytes=32 time=1ms TTL=128

Ping statistics for 192.168.10.58:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms
  
```

Time: 27:01:11 Power Cycle Devices Fast Forward Time

The screenshot shows the same Cisco Packet Tracer network diagram. The PC14 window is open, showing the Command Prompt with the following output:

```

Cisco Packet Tracer - G:\prak webjar\ash.pkt
File Edit Options View Tools Extensions Help

Logical [Root]

PC14
Physical Config Desktop Programming Attributes

Command Prompt

Pinging 192.168.10.16 with 32 bytes of data:

Reply from 192.168.10.16: bytes=32 time=1ms TTL=128
Reply from 192.168.10.16: bytes=32 time=1ms TTL=128
Reply from 192.168.10.16: bytes=32 time=1ms TTL=128
Reply from 192.168.10.16: bytes=32 time=1ms TTL=128

Ping statistics for 192.168.10.16:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 3ms

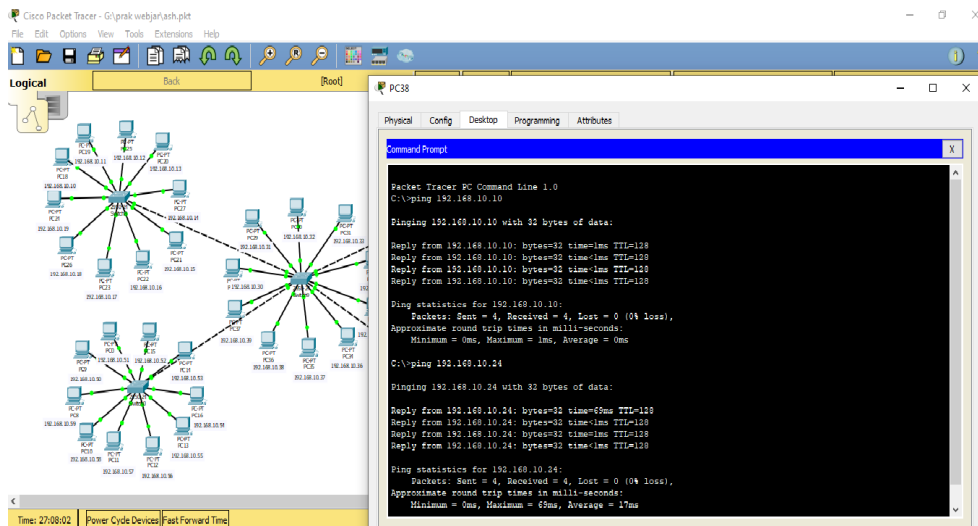
C:\>ping 192.168.10.33

Pinging 192.168.10.33 with 32 bytes of data:

Reply from 192.168.10.33: bytes=32 time=1ms TTL=128
Reply from 192.168.10.33: bytes=32 time=1ms TTL=128
Reply from 192.168.10.33: bytes=32 time=1ms TTL=128
Reply from 192.168.10.33: bytes=32 time=1ms TTL=128

Ping statistics for 192.168.10.33:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms
  
```

Time: 27:05:50 Power Cycle Devices Fast Forward Time Realtime



Information :

5 switches. Each switch consists of 10 workstations. Each of which has an IP 192.168.10.10-192.168.10.60

Can be seen all workstations connected succesfull (ping).

It would be more effective if there is a router device, so that IP can be configured via DHCP.