

# **COMPUTER NETWORKS PRACTICUM**

**2**



By :

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**Class : X**

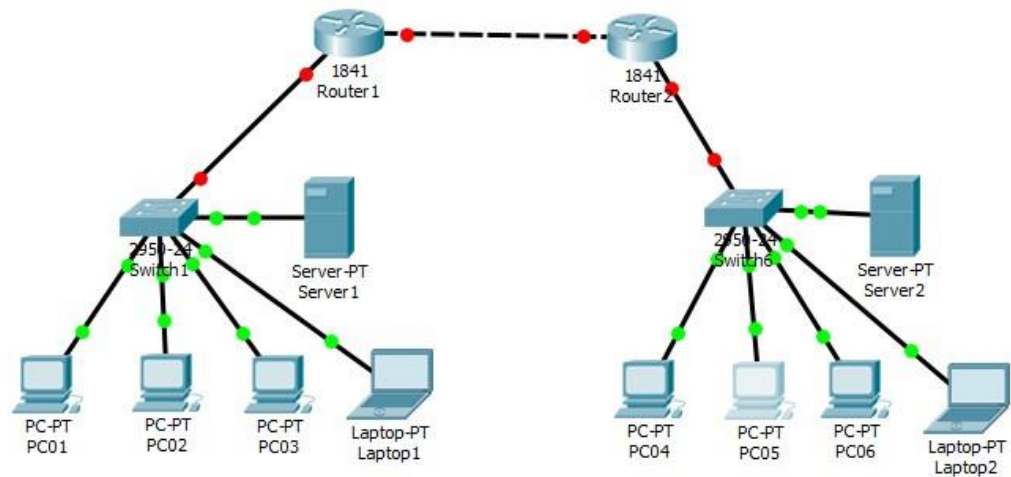
**INFORMATION TECHNOLOGY**

**FACULTY OF COMMUNICATION AND INFORMATICS MUHAMMADIYAH**

**UNIVERSITY OF SURAKARTA**

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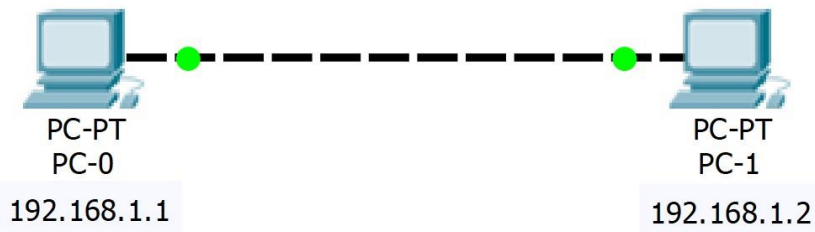
## 1. Activity 1



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 configuration tool. The window has tabs for 'Physical', 'Config', 'Desktop', 'Programming', and 'Attributes'. The 'Config' tab is selected. The window title is 'IP Configuration'. Below the title bar, there is a section for 'IP Configuration' with two radio buttons: 'DHCP' and 'Static'. The 'Static' radio button is selected. Below the radio buttons, there are four text input fields: 'IP Address' (containing '192.168.1.1'), 'Subnet Mask' (containing '255.255.255.0'), 'Default Gateway' (containing '0.0.0.0'), and 'DNS Server' (containing '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

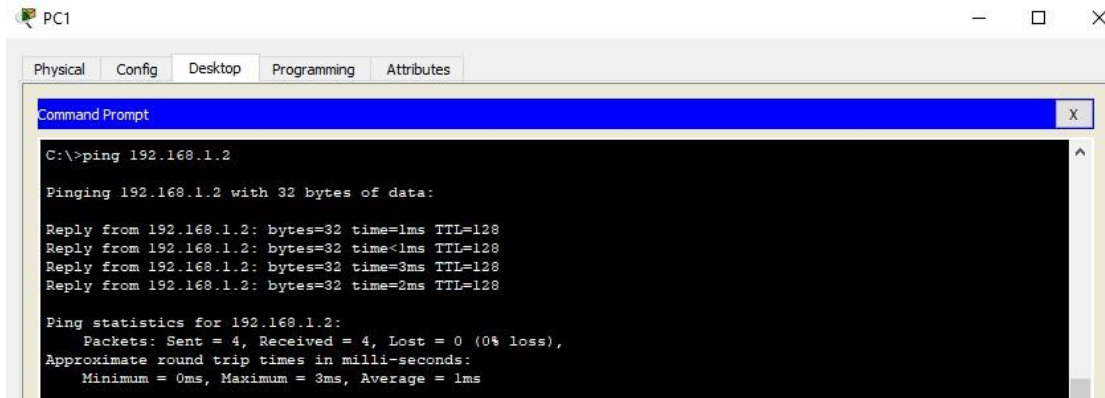
Ping statistics for 192.168.1.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 131ms, Average = 32ms

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



PC1

Physical Config Desktop Programming Attributes

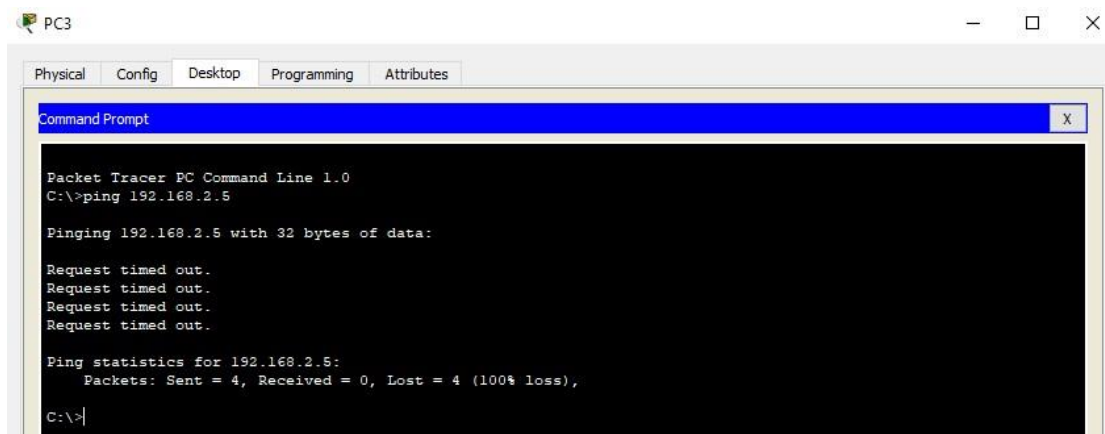
```
Command Prompt
C:\>ping 192.168.1.2

Pinging 192.168.1.2 with 32 bytes of data:

Reply from 192.168.1.2: bytes=32 time=1ms TTL=128
Reply from 192.168.1.2: bytes=32 time<1ms TTL=128
Reply from 192.168.1.2: bytes=32 time=3ms TTL=128
Reply from 192.168.1.2: bytes=32 time=2ms TTL=128

Ping statistics for 192.168.1.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 3ms, Average = 1ms
```

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



PC3

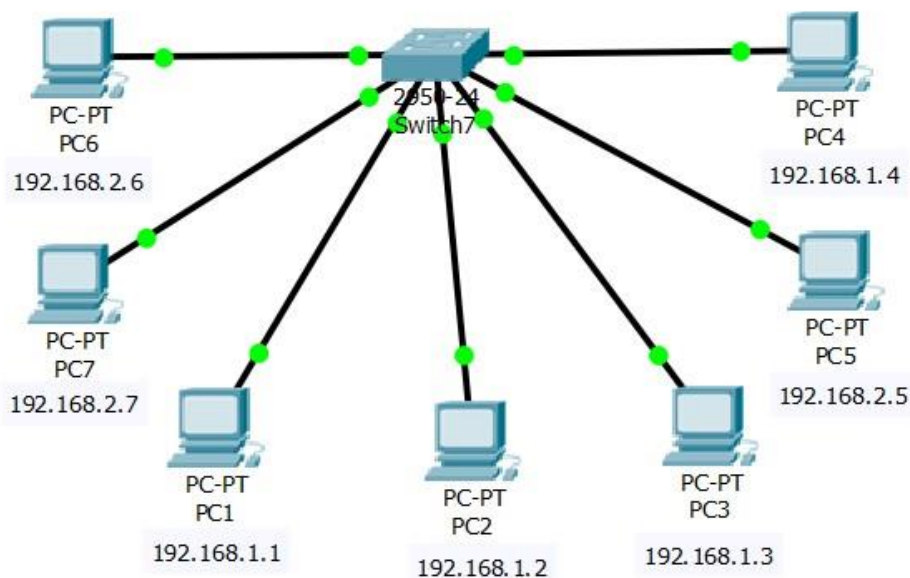
Physical Config Desktop Programming Attributes

```
Command Prompt
Packet Tracer PC Command Line 1.0
C:\>ping 192.168.2.5

Pinging 192.168.2.5 with 32 bytes of data:

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

Ping statistics for 192.168.2.5:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
C:\>|
```

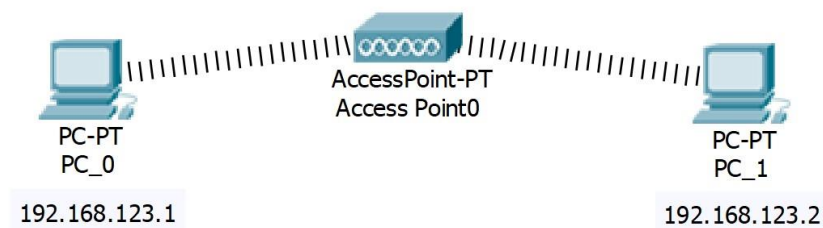


After the circuit is complete, ping between:

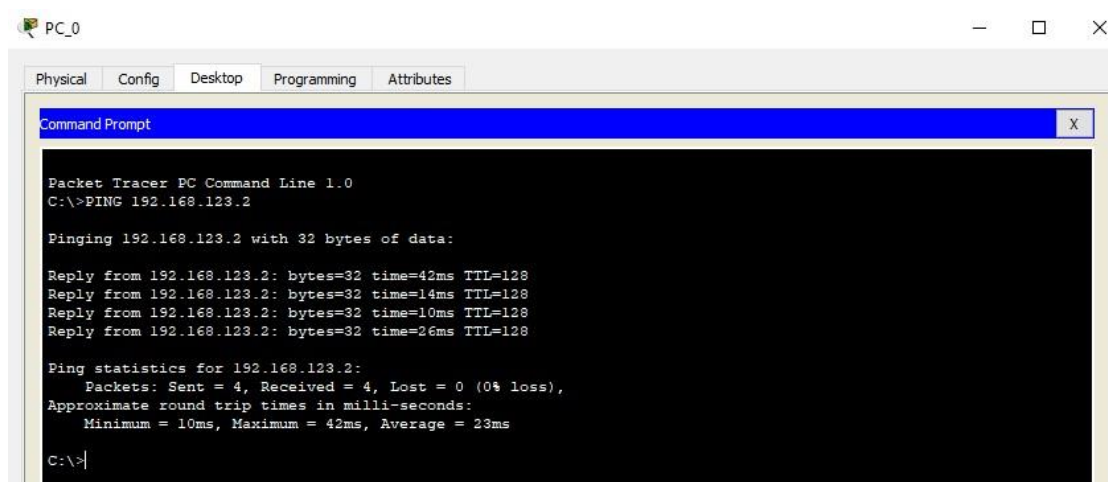
- PC1 to PC2 : is clear without any constraints.
- PC3 to PC5 : experiences RTO due to differences in network ID.

#### 4. Activity 4. Wireless Network

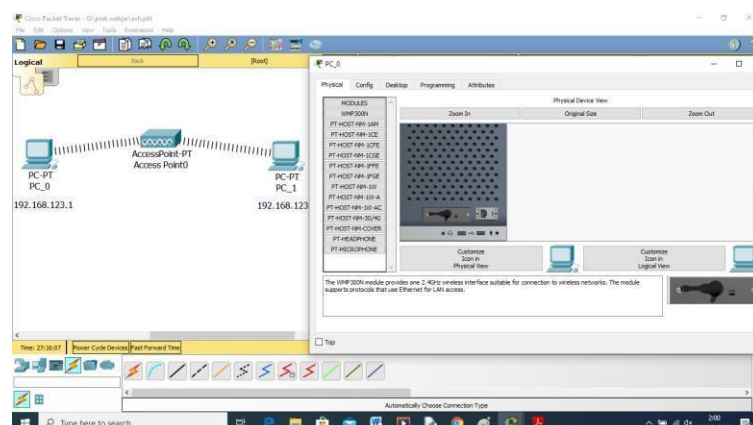
- Network design using Access points with IP divisions.



- Ping to check and the connection results are connected

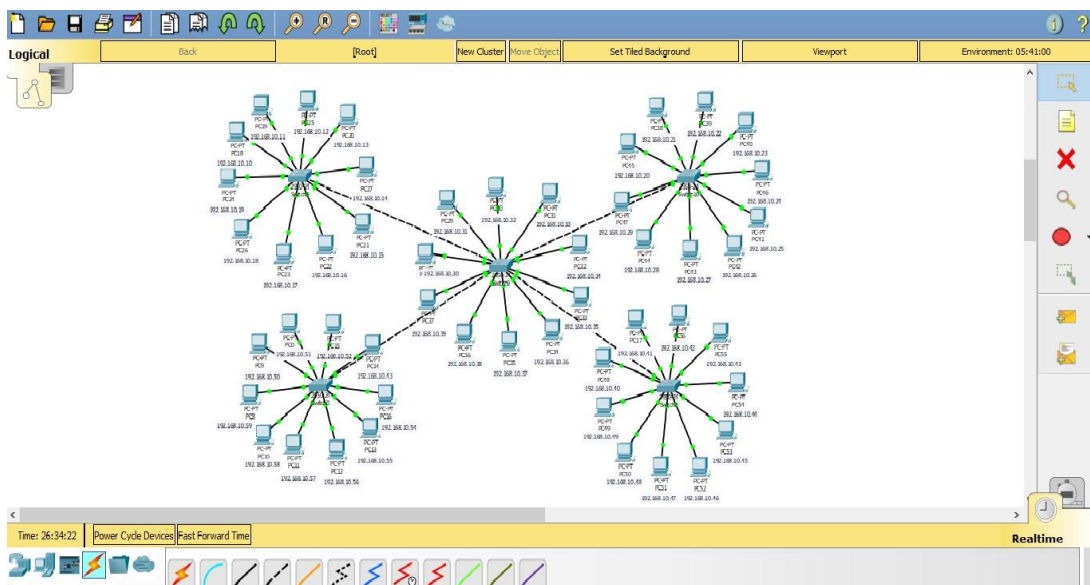


Replacing computer components into wireless components and connecting 2 computers with wireless components. There are 1 access point and 2 workstations. Ping clearly without any problems.

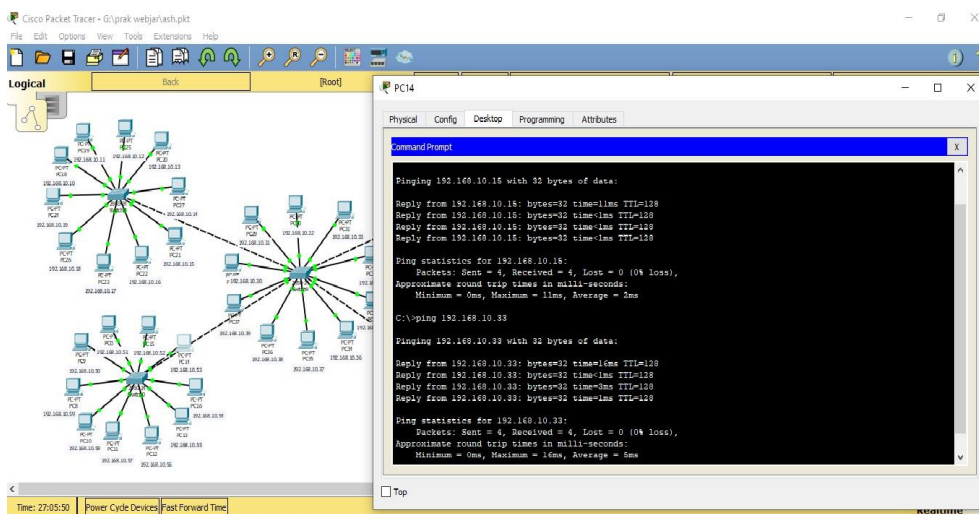
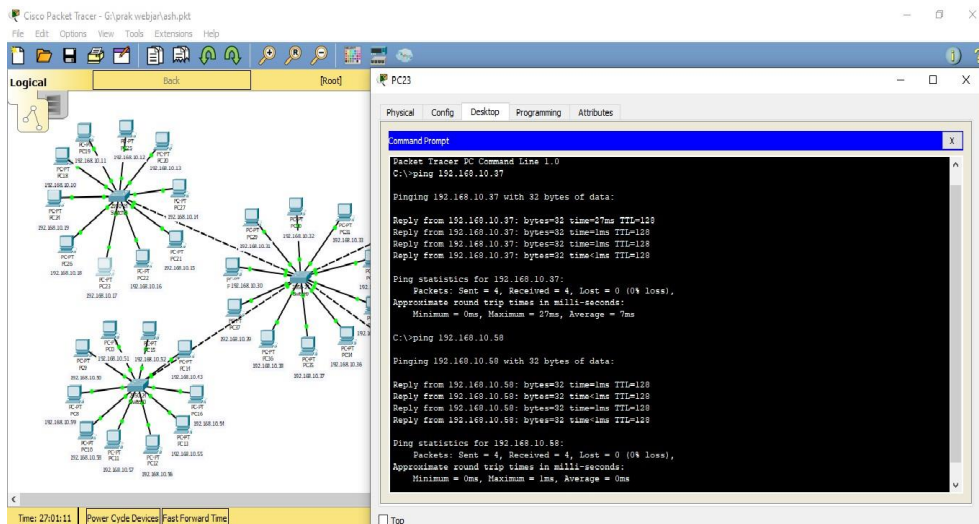
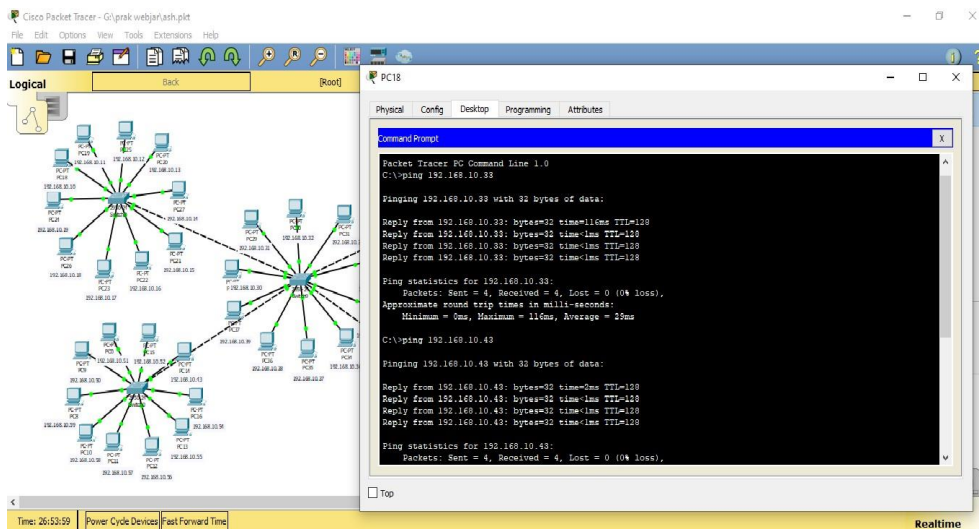


## ASSIGNMENT

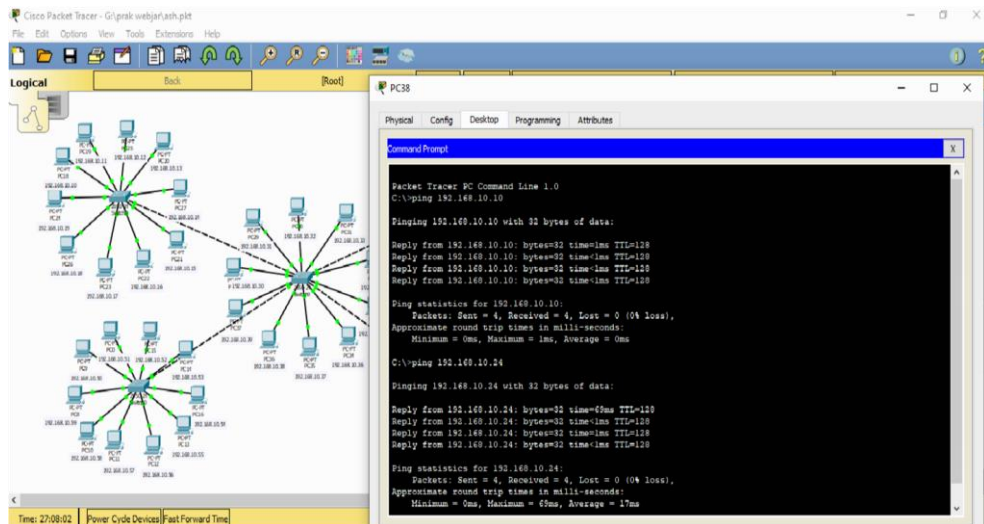
- Network Design



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







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.