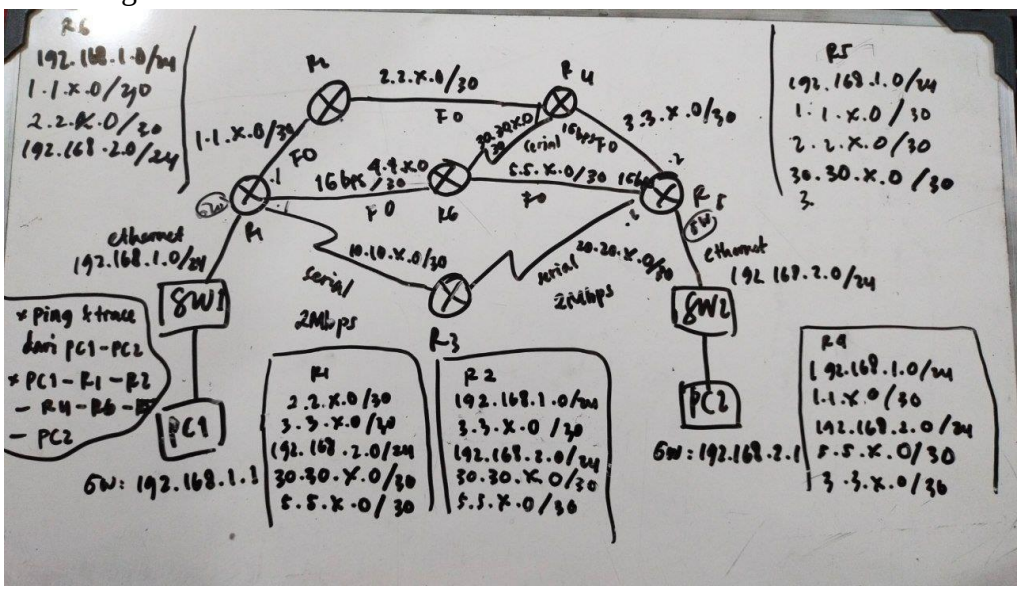
Lisallah

2220600052

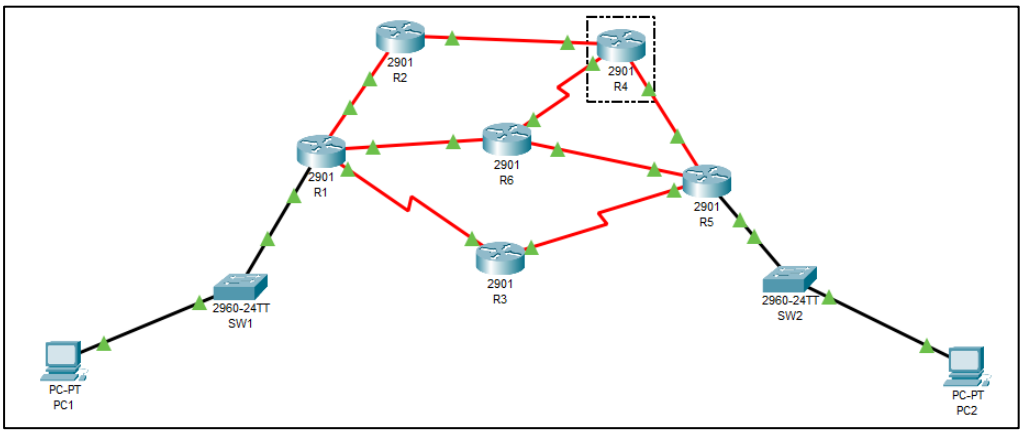
3 D4 TB

TUGAS 1 WORKSHOP JARINGAN KOMPUTER

1. Perancangan sesuai Case



2. Rangkaian pada Cisco Packet Tracer



3. Konfigurasi pada R1

```
Router>en
Router#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#hostname R1
R1(config)#ip dhcp pool NET1
R1(dhcp-config)#network 192.168.1.0 255.255.255.0
R1(dhcp-config)#deafult-router 192.168.1.1
                ^
% Invalid input detected at '^' marker.

R1(dhcp-config)#default-router 192.168.1.1
R1(dhcp-config)#dns-server 8.8.8.8
R1(dhcp-config)#ip dhcp excluded-address 192.168.1.1
R1(config)#ip dhcp excluded-address 192.168.1.1 192.168.1.10
R1(config)#interface gigabitEthernet 0/0
R1(config-if)#ip address 192.168.1.1 255.255.255.0
R1(config-if)#no shutdown

R1(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0, changed state to up
exit
R1(config)#interface gigabitEthernet 0/0/0
R1(config-if)#ip address 1.1.52.1 255.255.255.252
R1(config-if)#no shutdown

%LINK-5-CHANGED: Interface GigabitEthernet0/0/0, changed state to down
R1(config-if)#exit
R1(config)#interface gigabitEthernet 0/0/1
%Invalid interface type and number
R1(config)#interface gigabitEthernet 0/1/0
R1(config-if)#ip address 4.4.52.1 255.255.255.252
R1(config-if)#bandwidth 1000000
R1(config-if)#no shutdown

%LINK-5-CHANGED: Interface GigabitEthernet0/1/0, changed state to down
R1(config-if)#exit
R1(config)#interface serial 0/2/0
R1(config-if)#ip address 10.10.52.1 255.255.255.252
R1(config-if)#no shutdown

R1(config-if)#
%LINK-5-CHANGED: Interface Serial0/2/0, changed state to up
R1(config-if)#clock rate 2000000
R1(config-if)#bandwidth 2000
R1(config-if)#exit
R1(config)#
%LINK-5-CHANGED: Interface Serial0/2/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/2/0, changed state to up

%LINK-5-CHANGED: Interface GigabitEthernet0/0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0/0, changed state to up
R1(config)#do ping 1.1.52.2

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 1.1.52.2, timeout is 2 seconds:
.!!!!
Success rate is 80 percent (4/5), round-trip min/avg/max = 0/0/0 ms

R1(config)#do ping 4.4.52.2

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 4.4.52.2, timeout is 2 seconds:
.!!!!
Success rate is 80 percent (4/5), round-trip min/avg/max = 0/0/0 ms

R1(config)#do ping 10.10.52.2

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 10.10.52.2, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 14/25/60 ms
```

4. Konfigurasi pada R2

```
Router>en
Router#conf
Configuring from terminal, memory, or network [terminal]? t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#hostname R2
R2(config)#interface gigabitEthernet 0/0/0
R2(config-if)#ip address 1.1.52.2 255.255.255.252
R2(config-if)#no shutdown

R2(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0/0, changed state to up
exit
R2(config)#interface gigabitEthernet 0/0/1
%Invalid interface type and number
R2(config)#interface gigabitEthernet 0/1/1
%Invalid interface type and number
R2(config)#interface gigabitEthernet 0/1/0
R2(config-if)#ip address 2.2.52.1 255.255.255.252
R2(config-if)#no shutdown

%LINK-5-CHANGED: Interface GigabitEthernet0/1/0, changed state to down
R2(config-if)#exit
R2(config)#
%LINK-5-CHANGED: Interface GigabitEthernet0/1/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/1/0, changed state to up
R2(config)#do ping 1.1.52.1

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 1.1.52.1, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 0/0/0 ms

R2(config)#do ping 2.2.52.2

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 2.2.52.2, timeout is 2 seconds:
.!!!!
Success rate is 80 percent (4/5), round-trip min/avg/max = 0/0/0 ms
```

5. Konfigurasi pada R3

```
Router>en
Router#conf
Configuring from terminal, memory, or network [terminal]? t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#hostname R3
R3(config)#interface serial 0/0/0
R3(config-if)#ip address 10.10.52.2
% Incomplete command.
R3(config-if)#ip address 10.10.52.2 255.255.255.252
R3(config-if)#no shutdown

R3(config-if)#
%LINK-5-CHANGED: Interface Serial0/0/0, changed state to up
exit
R3(config)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/0/0, changed state to up

R3(config)#interface serial 0/1/0
%Invalid interface type and number
R3(config)#interface serial 0/0/1
R3(config-if)#ip address 20.20.52.1 255.255.255.252
R3(config-if)#no shutdown

R3(config-if)#
%LINK-5-CHANGED: Interface Serial0/0/1, changed state to up
exit
```

```
R3(config)#interface serial 0/0/0
R3(config-if)#bandwidth 2000
R3(config-if)#exit
R3(config)#interface serial 0/0/1
R3(config-if)#bandwidth 2000
R3(config-if)#exit
R3(config)#
R3(config)#do ping 10.10.52.1

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 10.10.52.1, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 2/25/61 ms

R3(config)#do ping 20.20.52.2

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 20.20.52.2, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 14/27/58 ms
```

6. Konfigurasi pada R4

```
Router>en
Router#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#hostname R4
R4(config)#interface gigabitEthernet 0/0/0
R4(config-if)#ip address 2.2.52.2 255.255.255.252
R4(config-if)#no shu

R4(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0/0, changed state to up
exit
R4(config)#interface gigabitEthernet 0/1/0
R4(config-if)#ip address 3.3.52.1 255.255.255.252
R4(config-if)#no shu

R4(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/1/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/1/0, changed state to up
exit
R4(config)#interface serial 0/2/0
R4(config-if)#ip address 30.30.52.1 255.255.255.252
R4(config-if)#no shu

%LINK-5-CHANGED: Interface Serial0/2/0, changed state to down
R4(config-if)#exit
R4(config)#
%LINK-5-CHANGED: Interface Serial0/2/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/2/0, changed state to up

R4(config)#interface serial 0/2/0
R4(config-if)#clock rate 2000000
R4(config-if)#bandwidth 1000000
R4(config-if)#exit
R4(config)#
```

```
R4(config)#ping 2.2.52.1
           ^
% Invalid input detected at '^' marker.

R4(config)#do ping 2.2.52.1

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 2.2.52.1, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 0/0/0 ms

R4(config)#do ping 30.30.52.2

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 30.30.52.2, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 3/22/50 ms

R4(config)#do ping 3.3.52.2

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 3.3.52.2, timeout is 2 seconds:
.!!!!
Success rate is 80 percent (4/5), round-trip min/avg/max = 0/0/0 ms
```

7. Konfigurasi pada R5

```
Router>en
Router#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#hostname R5
R5(config)#ip dhcp pool NET2
R5(dhcp-config)#network 192.168.2.0 255.255.255.0
R5(dhcp-config)#default-router 192.168.2.1
R5(dhcp-config)#dns-server 8.8.8.8
R5(dhcp-config)#ip dhcp excluded-address 192.168.2.1 192.168.2.10
R5(config)#interface gigabitEthernet 0/0
R5(config-if)#ip address 192.168.2.1 255.255.255.0
R5(config-if)#no shutdown

R5(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0, changed state to up
exit
R5(config)#interface gigabitEthernet 0/0/0
R5(config-if)#ip address 3.3.52.2 255.255.255.252
R5(config-if)#no shutdown

%LINK-5-CHANGED: Interface GigabitEthernet0/0/0, changed state to down
R5(config-if)#exit
R5(config)#interface gigabitEthernet 0/1/0
R5(config-if)#ip address 5.5.52.2 255.255.255.252
R5(config-if)#no shutdown

%LINK-5-CHANGED: Interface GigabitEthernet0/1/0, changed state to down
R5(config-if)#exit
R5(config)#interface serial 0/2/0
R5(config-if)#ip address 20.20.52.2 255.255.255.252
R5(config-if)#no shutdown
R5(config)#interface gigabitEthernet 0/1/0
R5(config-if)#bandwidth 1000000
R5(config-if)#exit
```

```
R5(config)#do ping 3.3.52.1

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 3.3.52.1, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 0/0/0 ms

R5(config)#do ping 5.5.52.1

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 5.5.52.1, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 0/0/0 ms

R5(config)#do ping 20.20.52.1

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 20.20.52.1, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 3/27/75 ms

R5(config)#do ping 192.168.2.1

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 192.168.2.1, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 0/5/9 ms
```

8. Konfigurasi pada R6

```
Router>en
Router#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#hostname R6
R6(config)#interface serial 0/2/0
R6(config-if)#ip address 30.30.52.2 255.255.255.252
R6(config-if)#no shu

R6(config-if)#
%LINK-5-CHANGED: Interface Serial0/2/0, changed state to up
exit
R6(config)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/2/0, changed state to up

R6(config)#bandwidth 1000000
                 ^
% Invalid input detected at '^' marker.

R6(config)#interface serial 0/2/0
R6(config-if)#bandwidth 1000000
R6(config-if)#exit
R6(config)#interface gigabitEthernet 0/0/0
R6(config-if)#ip address 4.4.52.2 255.255.255.252
R6(config-if)#no shu

R6(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0/0, changed state to up
interface gigabitEthernet 0/0/0
R6(config-if)#bandwidth 1000000
R6(config-if)#exit
R6(config)#interface gigabitEthernet 0/1/0
R6(config-if)#ip address 5.5.52.1 255.255.255.252
R6(config-if)#bandwidth 1000000
R6(config-if)#no shu

R6(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/1/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/1/0, changed state to up

R6(config-if)#exit
R6(config)#
```

```
R6>en
R6#ping 30.30.52.1

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 30.30.52.1, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 3/25/51 ms

R6#ping 4.4.52.1

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 4.4.52.1, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 0/0/0 ms

R6#ping 5.5.52.2

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 5.5.52.2, timeout is 2 seconds:
.!!!!
Success rate is 80 percent (4/5), round-trip min/avg/max = 0/0/0 ms
```

9. Routing Static
   a. Pada R1

```
R1(config)#ip route 2.2.52.0 255.255.255.252 1.1.52.2
R1(config)#ip route 30.30.52.0 255.255.255.252 1.1.52.2
R1(config)#ip route 30.30.52.0 255.255.255.252 1.1.52.2
R1(config)#ip route 5.5.52.0 255.255.255.252 1.1.52.2
R1(config)#ip route 192.168.2.0 255.255.255.0 1.1.52.2
R1(config)#
```

   b. Pada R2

```
R2(config)#ip route 192.168.1.0 255.255.255.0 1.1.52.1
R2(config)#ip route 30.30.52.0 255.255.255.252 2.2.52.2
R2(config)#
R2(config)#ip route 5.5.52.0 255.255.255.252 30.30.52.2
R2(config)#ip route 192.168.2.0 255.255.255.0 5.5.52.2
R2(config)#no ip route 5.5.52.0 255.255.255.252 30.30.52.2
R2(config)#ip route 5.5.52.0 255.255.255.252 2.2.52.2
R2(config)#
```

   c. Pada R3
   (tidak ada karena tidak dilewati)
   d. Pada R4

```
R4(config)#ip route 192.158.1.0 255.255.255.0 2.2.52.1
R4(config)#ip route 1.1.52.0 255.255.255.252 2.2.52.1
R4(config)#ip route 5.5.52.0 255.255.255.252 30.30.52.2
R4(config)#
R4(config)#ip route 192.168.2.0 255.255.255.0 5.5.52.2
R4(config)#no ip route 192.158.1.0 255.255.255.0 2.2.52.1
R4(config)#ip route 192.168.1.0 255.255.255.0 2.2.52.1
R4(config)#
```

   e. Pada R5

```
R5(config)#ip route 192.168.1.0 255.255.255.0 5.5.52.1
R5(config)#ip route 1.1.52.0 255.255.255.252 5.5.52.1
R5(config)#ip route 2.2.52.0 255.255.255.252 5.5.52.1
R5(config)#ip route 30.30.52.0 255.255.255.252 5.5.52.1
R5(config)#
```

   f. Pada R6

```
R6(config)#ip route 192.168.1.0 255.255.255.0 30.30.52.1
R6(config)#ip route 1.1.52.0 255.255.255.252 30.30.52.1
R6(config)#ip route 2.2.52.0 255.255.255.252 30.30.52.1
R6(config)#ip route 192.168.2.0 255.255.255.0 5.5.52.2
R6(config)#
```

10. Routing Dynamic
    a. Pada R1

```
R1(config)#router rip
R1(config-router)#version 2
R1(config-router)#network 192.168.1.0
R1(config-router)#network 1.1.1.0
R1(config-router)#no network 1.1.1.0
R1(config-router)#no network 1.1.52.0
R1(config-router)#network 1.1.52.0
R1(config-router)#network 4.4.52.0
R1(config-router)#network 10.10.52.0
R1(config-router)#exit
```

b. Pada R2

```
R2(config)#router rip
R2(config-router)#version 2
R2(config-router)#network 1.1.52.0
R2(config-router)#network 2.2.52.0
R2(config-router)#exit
```

c. Pada R3

```
R3(config)#router rip
R3(config-router)#version 2
R3(config-router)#network 10.10.52.0
R3(config-router)#network 20.20.52.0
R3(config-router)#exit
```

d. Pada R4

```
R4(config)#router rip
R4(config-router)#version 2
R4(config-router)#network 2.2.52.0
R4(config-router)#network 30.30.52.0
R4(config-router)#network 3.3.52.0
R4(config-router)#exit
```

e. Pada R5

```
R5(config)#router rip
R5(config-router)#version 2
R5(config-router)#network 3.3.52.0
R5(config-router)#network 5.5.52.0
R5(config-router)#network 20.20.52.0
R5(config-router)#network 192.168.2.0
R5(config-router)#exit
```

f. Pada R6

```
R6(config)#router rip
R6(config-router)#version 2
R6(config-router)#network 4.4.52.0
R6(config-router)#network 5.5.52.0
R6(config-router)#network 30.30.52.0
R6(config-router)#exit
```

11. Hasil Testing PC1-PC2 (Static)

Ping pada PC1

```
C:\>ping 192.168.2.11

Pinging 192.168.2.11 with 32 bytes of data:

Reply from 192.168.2.11: bytes=32 time=27ms TTL=123
Reply from 192.168.2.11: bytes=32 time=1ms TTL=123
Reply from 192.168.2.11: bytes=32 time=1ms TTL=123
Reply from 192.168.2.11: bytes=32 time=1ms TTL=123

Ping statistics for 192.168.2.11:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 1ms, Maximum = 27ms, Average = 7ms
```

Ping pada PC2

```
C:\>ping 192.168.1.11

Pinging 192.168.1.11 with 32 bytes of data:

Reply from 192.168.1.11: bytes=32 time=23ms TTL=123
Reply from 192.168.1.11: bytes=32 time=1ms TTL=123
Reply from 192.168.1.11: bytes=32 time=24ms TTL=123
Reply from 192.168.1.11: bytes=32 time=18ms TTL=123

Ping statistics for 192.168.1.11:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 1ms, Maximum = 24ms, Average = 16ms
```

Traceroute Pada PC1

```
C:\>tracert 192.168.2.11

Tracing route to 192.168.2.11 over a maximum of 30 hops:

  1    0 ms      0 ms      0 ms      192.168.1.1
  2    0 ms      0 ms      0 ms      1.1.52.2
  3    0 ms      0 ms      0 ms      2.2.52.2
  4    0 ms      1 ms      0 ms      30.30.52.2
  5    0 ms      1 ms      1 ms      5.5.52.2
  6    0 ms      0 ms      1 ms      192.168.2.11

Trace complete.
```

Traceroute Pada PC2

```
C:\>tracert 192.168.1.11

Tracing route to 192.168.1.11 over a maximum of 30 hops:

  1    0 ms      0 ms      0 ms      192.168.2.1
  2    0 ms      0 ms      0 ms      5.5.52.1
  3    0 ms      5 ms      1 ms      30.30.52.1
  4    1 ms      15 ms     0 ms      2.2.52.1
  5    0 ms      1 ms      0 ms      1.1.52.1
  6    0 ms      0 ms      1 ms      192.168.1.11

Trace complete.
```

12. Hasil Testing PC1-PC2 (Dynamic)

Ping pada PC1

```
C:\>ping 192.168.2.11

Pinging 192.168.2.11 with 32 bytes of data:

Reply from 192.168.2.11: bytes=32 time=387ms TTL=125
Reply from 192.168.2.11: bytes=32 time=24ms TTL=125
Reply from 192.168.2.11: bytes=32 time=1ms TTL=125
Reply from 192.168.2.11: bytes=32 time=15ms TTL=125

Ping statistics for 192.168.2.11:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 1ms, Maximum = 387ms, Average = 106ms
```

Ping pada PC2

```
C:\>ping 192.168.1.11

Pinging 192.168.1.11 with 32 bytes of data:

Reply from 192.168.1.11: bytes=32 time=44ms TTL=125
Reply from 192.168.1.11: bytes=32 time<1ms TTL=125
Reply from 192.168.1.11: bytes=32 time=34ms TTL=125
Reply from 192.168.1.11: bytes=32 time<1ms TTL=125

Ping statistics for 192.168.1.11:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 44ms, Average = 19ms
```

Traceroute pada PC1

```
C:\>tracert 192.168.2.11

Tracing route to 192.168.2.11 over a maximum of 30 hops:

  1    0 ms      0 ms      0 ms      192.168.1.1
  2    0 ms      0 ms      0 ms      4.4.52.2
  3    3 ms      0 ms     14 ms      20.20.52.2
  4    0 ms      9 ms      0 ms      192.168.2.11

Trace complete.
```

Tranceroute pada PC2

```
C:\>tracert 192.168.1.11

Tracing route to 192.168.1.11 over a maximum of 30 hops:

  1    0 ms      0 ms      9 ms      192.168.2.1
  2    0 ms      3 ms      0 ms      5.5.52.1
  3    0 ms      0 ms      2 ms      4.4.52.1
  4    0 ms      2 ms      1 ms      192.168.1.11

Trace complete.
```