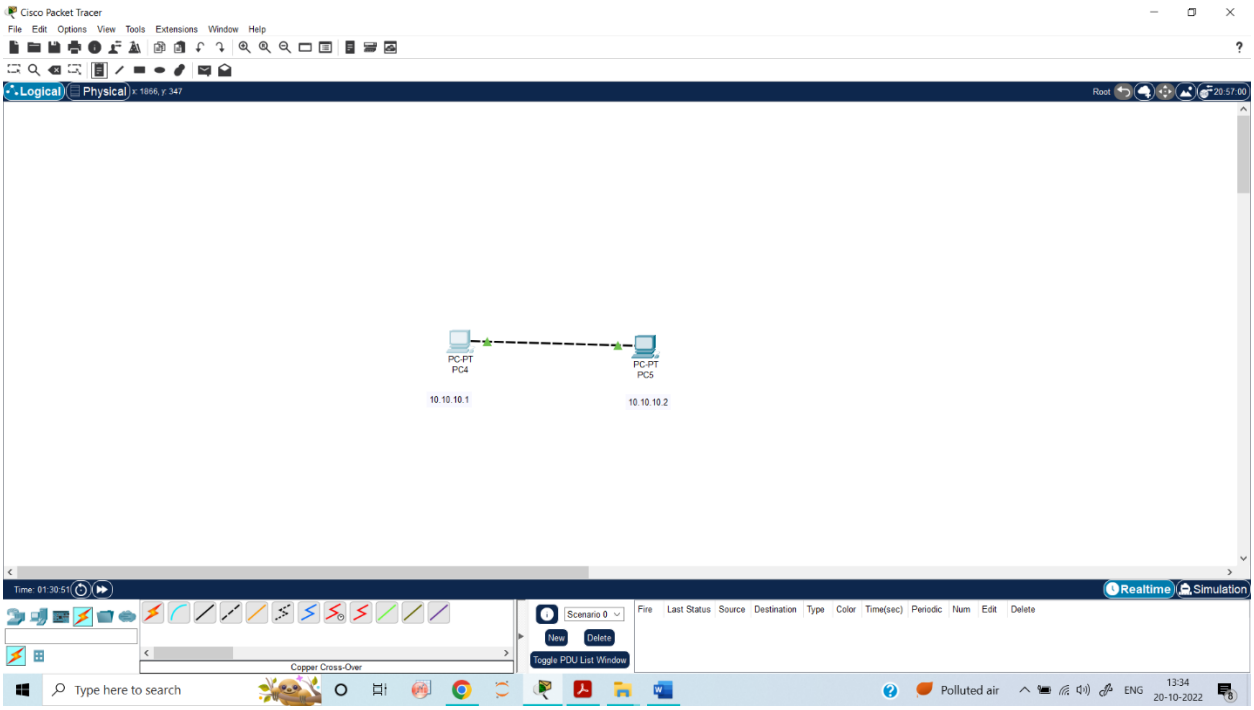
Experiment-3

Aim: Study of basic network command.

Objectives: Understanding basic networking commands such as: ipconfig, ipconfig /all, ping, tracert, nslookup, pathping.

Software Required: Cisco Packet Tracer.

Network Diagram:



Description

ipconfig:

The Command to know the IP Configuration is **ipconfig**

```
C:\>ipconfig

FastEthernet0 Connection:(default port)

   Connection-specific DNS Suffix..:
   Link-local IPv6 Address.....: FE80::2D0:BAFF:FE05:B2AE
   IPv6 Address.....: ::
   IPv4 Address.....: 10.10.10.1
   Subnet Mask.....: 255.0.0.0
   Default Gateway.....: ::
                                 0.0.0.0

Bluetooth Connection:

   Connection-specific DNS Suffix..:
   Link-local IPv6 Address.....: ::
   IPv6 Address.....: ::
   IPv4 Address.....: 0.0.0.0
   Subnet Mask.....: 0.0.0.0
   Default Gateway.....: ::
                                 0.0.0.0
```

ipconfig /all:

The Command to know the IP Configuration and physical address

```
C:\>ipconfig /all

FastEthernet0 Connection:(default port)

   Connection-specific DNS Suffix..:
   Physical Address.....: 00D0.BA05.B2AE
   Link-local IPv6 Address.....: FE80::2D0:BAFF:FE05:B2AE
   IPv6 Address.....: ::
   IPv4 Address.....: 10.10.10.1
   Subnet Mask.....: 255.0.0.0
   Default Gateway.....: ::
                                 0.0.0.0
   DHCP Servers.....: 0.0.0.0
   DHCPv6 IAID.....:
   DHCPv6 Client DUID.....: 00-01-00-01-B8-E7-7B-C5-00-D0-BA-05-B2-
AE
   DNS Servers.....: ::
                                 0.0.0.0

Bluetooth Connection:

   Connection-specific DNS Suffix..:
   Physical Address.....: 00D0.FFB5.9065
   Link-local IPv6 Address.....: ::
 --More--
```

ping: ***ping dest_ip_address***

Ping sends an ICMP ECHO_REQUEST packet to the specified host. If the host responds, you get an ICMP packet back. If there is no response, you know something is wrong.

```
C:\>ping 10.10.10.2

Pinging 10.10.10.2 with 32 bytes of data:

Reply from 10.10.10.2: bytes=32 time=14ms TTL=128
Reply from 10.10.10.2: bytes=32 time<1ms TTL=128
Reply from 10.10.10.2: bytes=32 time<1ms TTL=128
Reply from 10.10.10.2: bytes=32 time<1ms TTL=128

Ping statistics for 10.10.10.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 14ms, Average = 3ms
```

Traceroute: ***tracert dest_ip_address***

When you connect with a website, the data you get must travel across multiple devices and networks along the way, particularly routers. A traceroute provides a map of how data on the internet travels from its source to its destination.

Tracert is a command which can show you the path a packet of information takes from your computer to one you specify. It will list all the routers it passes through until it reaches its destination, or fails to and is discarded.

```
C:\>tracert 10.10.10.2

Tracing route to 10.10.10.2 over a maximum of 30 hops:

  1    0 ms      0 ms      0 ms      10.10.10.2

Trace complete.
```

nslookup:

Displays information from Domain Name System (DNS) name servers.

NOTE: If you write the command as above it shows as default your pc's server name firstly.

```
C:\>nslookup

Server: [255.255.255.255]
Address:   255.255.255.255
```

pathping:

A better version of tracert that gives you statics about packet lost and latency.