EXPERIMENT 14 - LEARNING AND ASSIGNMENT OF IP ADDRESS MANUALLY TO COMPUTERS

Aim:

To manually assign IPv4 addresses, subnet mask, and default gateway to computers in a network and verify connectivity between hosts.

Introduction:

In computer networks, every device requires a unique IP address to communicate. Manual IP assignment (static IP) is when the IP address, subnet mask are set manually instead of using DHCP. This experiment helps understand addressing, subnetting, and basic connectivity verification using ping.

Algorithm:

1. Prepare network devices:
- Place 2 PCs and 1 switch (and router if using a gateway) in Packet Tracer.
2. Connect devices:
- Use Copper Straight-Through cable:
- PC → Switch
- Switch → Router (optional)
3. Assign IP addresses:

IP Address: 192.168.1.1

Subnet Mask: 255.255.255.0

IP Address: 192.168.1.2

Subnet Mask: 255.255.255.0

4. Verify connectivity:
- On PC0 → Command Prompt → ping 192.168.1.2
- On PC1 → Command Prompt → ping 192.168.1.1

Output:

```
Cisco 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=13ms 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 = 13ms, Average = 3ms
```

Result:

Manual IP addresses were successfully assigned to the PCs.