**SHLOK ANAND**

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**CN: PRACTIAL NO.1**

**AIM: STUDY OF BASIC ELEMENTS OF COMPUTERS NETWORKING WITH DETAILS OF NETWORKING DEVICES.**

* **Hub**: A simple networking device that broadcasts data to all connected devices without filtering.
* **Switch**: A device that forwards data only to the intended device using MAC addresses.
* **Router**: Connects multiple networks and directs data packets based on IP addresses.
* **Repeater**: Amplifies and retransmits network signals to extend coverage.
* **Bridge**: Connects and filters traffic between two different LAN segments.
* **Modem**: Converts digital data into analog signals (and vice versa) for internet access.

**Topology**: The arrangement or layout of devices and connections in a computer network.

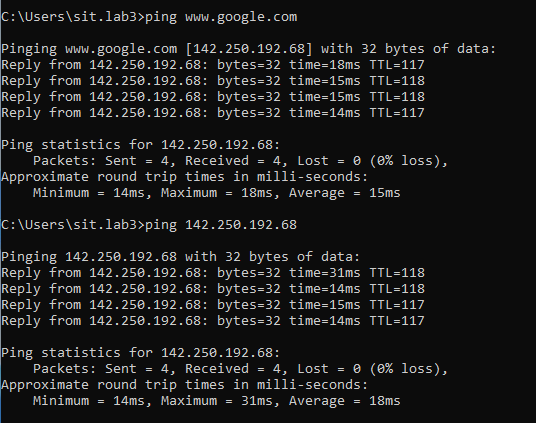
* **Bus Topology**: All devices share a single central communication line (backbone).
* **Star Topology**: All devices connect to a central hub or switch.
* **Ring Topology**: Devices are connected in a circular path where data passes in one direction.
* **Mesh Topology**: Every device is connected to every other device for maximum reliability.

**TYPES OF CABLES**

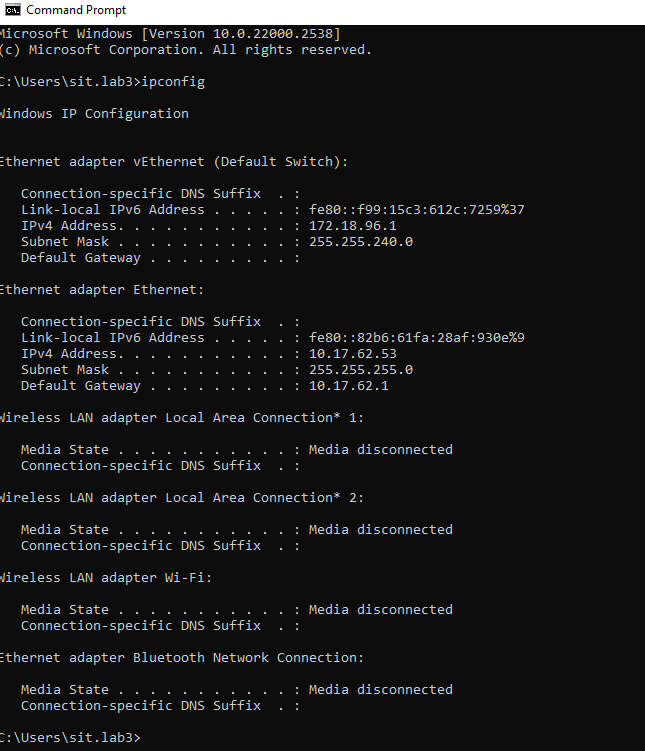
* **Twisted Pair Cable**: Consists of pairs of insulated copper wires twisted together, commonly used in LANs.
* **Coaxial Cable**: Has a central conductor, insulating layer, and shield, used for cable TV and networking.
* **Fibre Optic Cable**: Uses light signals through glass/plastic fibers for high-speed, long-distance communication.

**NETWORK TROUBLESHOOTING COMMANDS:**

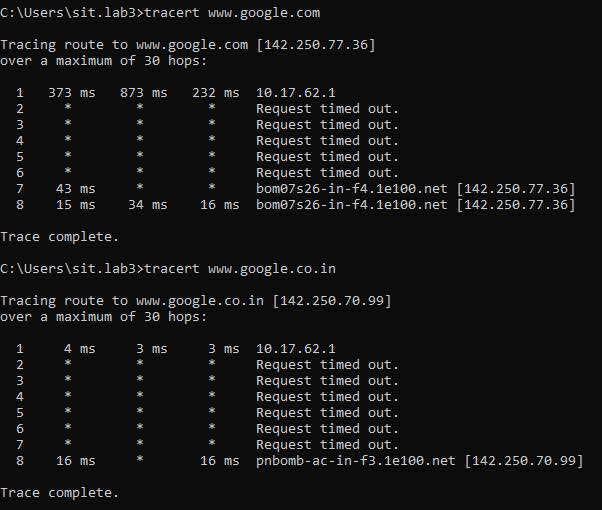
**1.PING**

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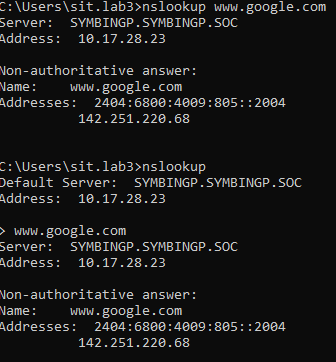
**2.IPCONFIG**



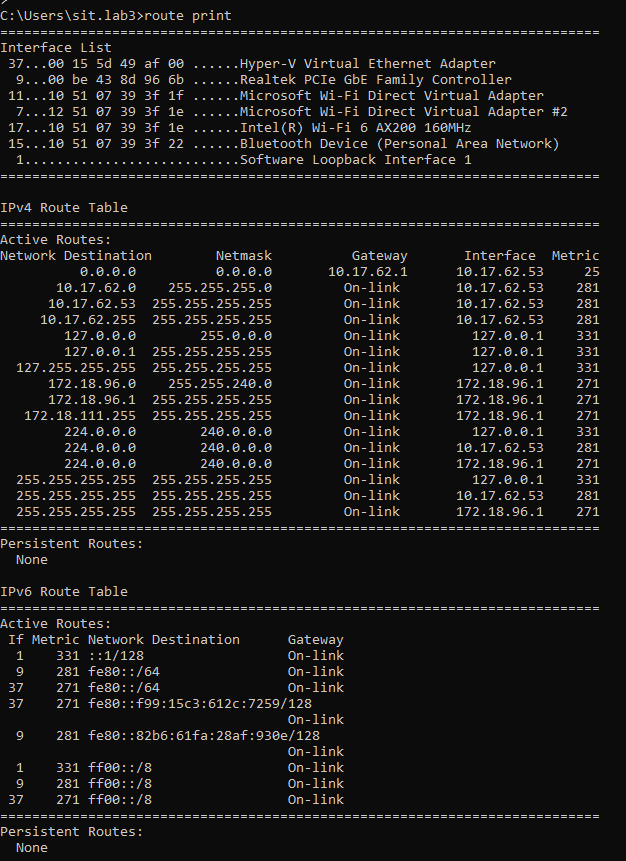
**3.TRACERT**

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**4.nslookup**

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**5.ROUTE PRINT**

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