**4. You are given three IP addresses: 192.168.10.5, 172.20.15.1, and 8.8.8.8.**

**Identify the class of each IP address.**

**Determine if it is private or public.**

**Explain how NAT would handle a private IP when accessing the internet.**

* 192.168.10.5 → **Class C,** **Private** (falls within 192.168.0.0 - 192.168.255.255).
* 172.20.15.1 → **Class B,** **Private** (falls within 172.16.0.0 - 172.31.255.255).
* 8.8.8.8 → **Class A,** **Public** (used by Google for DNS services).

**NAT in handling Private IP when accessing the internet:**

* When a private IP like 192.168.10.5 or 172.20.15.1 tries to access the internet, NAT translates it into a public IP assigned by the ISP.
* The router maintains a NAT table to track which private IP is mapped to which public IP.
* When the response comes back from the internet, NAT translates it back to the original private IP.
* This allows devices with private IPs to communicate with the internet while keeping internal network addresses hidden.