LAB SESSION-9

COURSE:- Computer Networks Lab

Course Code:- BCSE308P

Faculty:- Anita X

Name:- Priyanshu Soni

Reg. No.:- 21BRS1629

- Program for assigning IP addresses for thenetworks.

Code: -

```
import java.util.ArrayList;
import java.util.List;

public class NetworkSetup {
    public static void main(String[] args) {
        String baseNetwork = "200.55.1."; // Base IP address for all
networks
        int currentHost = 1; // Starting host number
        int subnetMask = 24; // Subnet mask

        List<Network> networks = new ArrayList<>();
        networks.add(new Network("Network A", 100));
        networks.add(new Network("Network B", 40));
        networks.add(new Network("Network C", 20));
        networks.add(new Network("Network D", 10));
        networks.add(new Network("Network E", 6));
        networks.add(new Network("Network F", 2));
        for (Network network : networks) {
            String networkAddress = baseNetwork + currentHost + "/" +
subnetMask;
            network.setNetworkAddress(networkAddress);
            network.setClassType(getClassType(networkAddress));
            currentHost += network.getNumberOfHosts();
        }
        for (Network network : networks) {
            System.out.println("Network Name: " + network.getName());
            System.out.println("Network Address: " +
network.getNetworkAddress());
            System.out.println("Class Type: " + network.getClassType());
            System.out.println();
        }
    }

    private static String getClassType(String networkAddress) {
        String[] octets = networkAddress.split("\\.");
        int firstOctet = Integer.parseInt(octets[0]);
        if (firstOctet >= 0 && firstOctet <= 127) {
            return "Class A";
        } else if (firstOctet >= 128 && firstOctet <= 191) {
            return "Class B";
        } else if (firstOctet >= 192 && firstOctet <= 223) {
            return "Class C";
        } else if (firstOctet >= 224 && firstOctet <= 239) {
            return "Class D";
        } else if (firstOctet >= 240 && firstOctet <= 255) {
            return "Class E";
        }
        return "Unknown";
    }
}
```

```
class Network {
    private String name;
    private int numberOfHosts;
    private String networkAddress;
    private String classType;

    public Network(String name, int numberOfHosts) {
        this.name = name;
        this.numberOfHosts = numberOfHosts;
    }

    public String getName() {
        return name;
    }

    public int getNumberOfHosts() {
        return numberOfHosts;
    }

    public String getNetworkAddress() {
        return networkAddress;
    }

    public void setNetworkAddress(String networkAddress) {
        this.networkAddress = networkAddress;
    }

    public String getClassType() {
        return classType;
    }

    public void setClassType(String classType) {
        this.classType = classType;
    }
}
```

input: -

Network A = 100 Hosts
Network B = 40 Hosts
Network C = 20 hosts
Network D = 10 hosts
Network E = 6 Hosts
Network F = 2 Hosts

Output: -

```
PS D:\3RD YEAR\NETWORKS LAB\lab9\lab9>  & 'C:\Program Files\Java\jdk-17.0.1\bin\java.exe' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\THE_EXOT
IC_ONE\AppData\Roaming\Code\User\workspaceStorage\b6c5d4a5ab7794bbcc895c94585b2124\redhat.java\jdt_ws\lab9_51aa1db0\bin' 'NetworkSetup'
Network Name: Network A
Network Address: 200.55.1.1/24
Class Type: Class C

Network Name: Network B
Network Address: 200.55.1.101/24
Class Type: Class C

Network Name: Network C
Network Address: 200.55.1.141/24
Class Type: Class C

Network Name: Network D
Network Address: 200.55.1.161/24
Class Type: Class C

Network Name: Network E
Network Address: 200.55.1.171/24
Class Type: Class C

Network Name: Network F
Network Address: 200.55.1.177/24
Class Type: Class C

PS D:\3RD YEAR\NETWORKS LAB\lab9\lab9>
```