

6. Write a program to demonstrate subnetting and find the subnet masks

```
import java.io.*;
import java.net.InetAddress;
public class Subnet1 {

    public static void main(String[] args) throws IOException {

        System.out.println("ENTER IP:");
        BufferedReader br = new BufferedReader(new InputStreamReader(System.in));
        String ip = br.readLine();
        String checkclass = ip.substring(0, 3);
        int cc = Integer.parseInt(checkclass);
        String mask = null;
        if(cc>0)
        {
            if(cc<=127)
            {
                mask = "255.0.0.0";
                System.out.println("Class A IP Address");
                System.out.println("SUBNET MASK:\n"+mask);
            }
            if(cc>=128 && cc<=191)
            {
                mask = "255.255.0.0";
                System.out.println("Class B IP Address");
                System.out.println("SUBNET MASK:\n"+mask);
            }
            if(cc>=192 && cc<=223)
            {
                mask = "255.255.255.0";
                System.out.println("Class C IP Address");
                System.out.println("SUBNET MASK:\n"+mask);
            }
            if(cc>=224 && cc<=239)
            {
                mask = "255.0.0.0";
                System.out.println("Class D IP Address Used for multicasting");
            }
            if(cc>=240 && cc<=254)
            {
                mask = "255.0.0.0";
                System.out.println("Class E IP Address Experimental Use");
            }
        }
    }
}
```

```

        String networkAddr="";
String lastAddr="";
        String[] ipAddrParts=ip.split("\\.");
        String[] maskParts=mask.split("\\.");

        for(int i=0;i<4;i++){
            int x=Integer.parseInt(ipAddrParts[i]);
            int y=Integer.parseInt(maskParts[i]);
            int z=x&y;
            networkAddr+=z+".";
            int w=z|(y^255);
            lastAddr+=w+".";
        }

        System.out.println("First IP of block: "+networkAddr);
        System.out.println("Last IP of block: "+lastAddr);
    }
}

```

/*OUTPUT

CNlab@CNlab:~\$ javac Subnet1.java

CNlab@CNlab:~\$ java Subnet1

PS C:\KVR\VIT\SEM IV\CN\LAB\LAB6> javac subnetting.java

PS C:\KVR\VIT\SEM IV\CN\LAB\LAB6> java subnetting

ENTER IP:

226.35.65.23

Class D IP Address Used for multicasting

First IP of block: 226.0.0.0.

Last IP of block: 226.255.255.255.

CNlab@CNlab:~\$ java subnetting

ENTER IP:

192.168.100.5

Class C IP Address

SUBNET MASK:

255.255.255.0

First IP of block: 192.168.100.0.

Last IP of block: 192.168.100.255.