

## Subnetting :

```
import java.util.Scanner;
class Subnet
{
    public static void main(String args[])
    {
        Scanner sc = new Scanner(System.in);
        System.out.print("Ip address: ");
        String ip = sc.nextLine();
        String split_ip[] = ip.split("\\.");
        String split_bip[] = new String[4];
        String bip = "";
        for(int i=0;i<4;i++) {
            split_bip[i] = appendZeros(Integer.toBinaryString(Integer.parseInt(split_ip[i])));
            bip += split_bip[i];
        }
        System.out.println("Binary Format "+bip);
        System.out.print("Enter the number of addresses in each subnet: ");
        int n = sc.nextInt();
        int bits = (int)Math.ceil(Math.log(n)/Math.log(2));
        int mask = 32-bits;
        System.out.println("Subnet mask = "+mask);
        int fbip[] = new int[32];
        for(int i=0; i<32;i++) fbip[i] = (int)bip.charAt(i)-48;
        for(int i=31;i>31-bits;i--)
            fbip[i] &= 0;
        String fip[] = {"","","",""};
        for(int i=0;i<32;i++)
            fip[i/8] = new String(fip[i/8]+fbip[i]);
        System.out.print("Network address is = ");
        for(int i=0;i<4;i++) {
            System.out.print(Integer.parseInt(fip[i],2));
            if(i!=3) System.out.print(".");
        }
    }
}
```

```

    }
    System.out.println();
    int lbip[] = new int[32];
    for(int i=0; i<32;i++) lbip[i] = (int)bip.charAt(i)-48;
    for(int i=31;i>31-bits;i--) lbip[i] |= 1;
    String lip[] = {"","","",""};
    for(int i=0;i<32;i++) lip[i/8] = new String(lip[i/8]+lbip[i]);
    System.out.print("Broadcast address is = ");
    for(int i=0;i<4;i++) {
        System.out.print(Integer.parseInt(lip[i],2));
        if(i!=3) System.out.print(".");
    }
    System.out.println();
}
static String appendZeros(String s)
{
    String temp = new String("00000000");
    return temp.substring(s.length()+ s;
}
}

```

```
Command Prompt
C:\Users\poove\OneDrive\Desktop\NC_Output>java Subnet
Ip address: 172.217.11.14
Binary Format 10101100110110010000101100001110
Enter the number of addresses in each subnet: 100
Subnet mask = 25
Network address is = 172.217.11.0
Broadcast address is = 172.217.11.127

C:\Users\poove\OneDrive\Desktop\NC_Output>
```