**SubnetMask.java :-**

**import** java.util.Scanner;

**public** **class** SubnetMask {

**public** **static** **void** main(String[] args) {

Scanner scan = **new** Scanner(System.***in***);

String ip = **new** String();

**int** mask=0,defaultmask=0;

System.***out***.println("enter ip address");

ip = scan.nextLine();

System.***out***.println("enter mask");

mask = scan.nextInt();

String[] splitip = ip.split("\\.");

System.***out***.println(splitip[0]+" "+splitip[1]+" "+splitip[2]+" "+splitip[3]+" ");

**int** first = Integer.*parseInt*(splitip[0]);

**if**(first>=0&&first<=127){

System.***out***.println("CLASS A");

defaultmask = 8;

}

**else** **if**(first>127&&first<=191){

System.***out***.println("CLASS B");

defaultmask=16;

}

**else** **if**(first>191&&first<=223){

System.***out***.println("CLASS C");

defaultmask=24;

}

**else** **if**(first>223){

System.***out***.println("CLASS D");

defaultmask=32;

}

String binip = **new** String();

String defmask = **new** String();

**for**(**int** i=0;i<4;i++){

binip = binip + *appendZeroes*(Integer.*toBinaryString*(Integer.*parseInt*(splitip[i])));

}

System.***out***.println("IP in binary : "+binip);

System.***out***.println("Default Mask : "+defaultmask);

**for**(**int** i=0;i<32;i++){

**if**(i<mask){

defmask = defmask + "1";

}

**else**{

defmask = defmask + "0";

}

}

System.***out***.println(defmask);

String netid = **new** String();

**for**(**int** i=0;i<32;i++){

netid = netid + (Integer.*parseInt*(""+binip.charAt(i))&Integer.*parseInt*(""+defmask.charAt(i)));

}

**int** p=-1;

System.***out***.println(netid);

String[] net = **new** String[4];

String[] def = **new** String[4];

**for**(**int** i=0;i<32;i++){

**if**(i%8==0){

p++;

net[p] = "";

def[p]="";

net[p] = net[p] + netid.charAt(i);

def[p] = def[p] + defmask.charAt(i);

}

**else**{

net[p] = net[p] + netid.charAt(i);

def[p] = def[p] + defmask.charAt(i);

}

}

System.***out***.println("Given IP : "+ip);

System.***out***.print("subnet mask :");

**for**(**int** i=0;i<4;i++){

System.***out***.print(Integer.*parseInt*(def[i],2));

**if**(i!=3)

System.***out***.print(".");

}

System.***out***.println();

System.***out***.print("NetId : ");

**for**(**int** i=0;i<4;i++){

System.***out***.print(Integer.*parseInt*(net[i],2));

**if**(i!=3)

System.***out***.print(".");

}

}

**private** **static** String appendZeroes(String binaryString) {

// **TODO** Auto-generated method stub

/\*if(binaryString.length()<8){

for(int i=0;i<8-binaryString.length();i++){

binaryString = "0" + binaryString;

}

}\*/

String temp = **new** String("00000000");

**return** temp.substring(binaryString.length())+ binaryString;

}

}

**Output :-**

enter ip address

192.168.56.1

enter mask

24

192 168 56 1

CLASS C

IP in binary : 11000000101010000011100000000001

Default Mask : 24

11111111111111111111111100000000

11000000101010000011100000000000

Given IP : 192.168.56.1

subnet mask :255.255.255.0

NetId : 192.168.56.0