IP ADDRESS:

import java.util.\*;

class ip

{ public static void main(String[] args)

{ String ip;

String a="",b="",c="",d="";

int len,x1,x2,x3,x4,op =0;

int count=0,x=0,z=1;

// BufferedReader br=new BufferedReader(new InputStreamReader(System.in));

Scanner s = new Scanner(System.in);

char arr []=new char[15];

System.out.println("Enter Ip Address");

ip=s.nextLine();

len=ip.length();

if(len<7 || len>15)

{

System.out.println("Invalid ip");}

else

{

for(int i=0;i<len;i++)

{

if(ip.charAt(i)!='.')

{ if(x==0)

a=a+ip.charAt(i);

if(x==1)

b=b+ip.charAt(i);

if(x==2)

c=c+ip.charAt(i);

if(x==3)

d=d+ip.charAt(i);

}

else if(ip.charAt(i)=='.')

{ x++;

}

else

{ op=1;

break;

}

}

x1 = Integer.parseInt(a);

x2 = Integer.parseInt(b);

x3 = Integer.parseInt(c);

x4 = Integer.parseInt(d);

if((op==1 || x>3) || a==""||b==""||c==""||d=="" || x1>255|| x2>255|| x3>255|| x4>255 || x1<0|| x2<0|| x3<0|| x4<0 )

{

System.out.println("Invalid ip!!!");

op=1;

}

else

{

if(x1>0 && x1<128)

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

System.out.println("Default Mask is : 255.0.0.0 ");

System.out.println("Network Address :" +a +".0.0.0"); }

else if(x1>127 && x1<192)

{ System.out.println("B Class");

System.out.println("Default Mask is : 255.255.0.0 ");

System.out.println("Network Address :"+a +"."+b+"."+"0.0"); }

else if (x1>191 && x1<224)

{ System.out.println("C Class");

System.out.println("Default Mask is : 255.255.255.0 ");

System.out.println("Network Address :"+a+"."+b+"."+c+".0"); }

else if(x1>223 && x1 < 240)

{ System.out.println("D Class");

System.out.println("Default Mask is : 255.255.255.255 ");

System.out.println("Network Address :"+a+"."+b+"."+c+"."+d); }

else if(x1>239 && x1<256)

{ System.out.println("E Class");

System.out.println("Default Mask is : 255.255.255.255 ");

System.out.println("Network Address "+a+"."+b+"."+c+"."+d); }

}

}

}

}

HAMMING CODE:

import java.util.\*;

class Hamming

{

public static void main(String args[])

{

Scanner sc = new Scanner(System.in);

int[] data = new int[7];

int[] recv = new int[7];

int[] dec = new int[3];

int pos;

for(int i=0;i<7;i++)

{

data[i]=-1;

}

System.out.println("Enter the Data bits:\n");

data[6]=sc.nextInt();

data[5]=sc.nextInt();

data[4]=sc.nextInt();

data[2]=sc.nextInt();

data[0]=data[2]^data[4]^data[6];

data[1]=data[2]^data[5]^data[6];

data[3]=data[4]^data[5]^data[6];

System.out.println("Data sent by sender: \n");

for(int i=6;i>=0;i--)

{

System.out.print(data[i]+"\t");

}

for(int i=0;i<7;i++)

{

recv[i]=-1;

}

System.out.println("\nEnter the received code: \n");

for(int i=0;i<7;i++)

{

recv[i]=sc.nextInt();

}

System.out.println("Data received by receiver: \n");

for(int i=0;i<7;i++)

{

System.out.print(recv[i]+"\t");

}

dec[0]=recv[0]^recv[2]^recv[4]^recv[6];

dec[1]=recv[1]^recv[2]^recv[5]^recv[6];

dec[2]=recv[3]^recv[4]^recv[5]^recv[6];

System.out.println();

for(int i=0;i<3;i++)

{

System.out.print(dec[i]+"\t");

}

pos = dec[0]\*1+dec[1]\*2+dec[2]\*4;

System.out.println("\n\nError is at position: "+(pos));

}

}

CRC:

import java.util.Scanner;

class CRC

{

public static void main(String args[])

{

Scanner sc=new Scanner(System.in);

int m,g[],n,d[],z[],r[],msb,i,j,k;

System.out.print(“Enter no. of data bits : “);

n=sc.nextInt();

System.out.print(“Enter no. of generator bits : “);

m=sc.nextInt();

d=new int[n+m];

g=new int[m];

System.out.print(“Enter data bits : “);

for(i=0;i<n;i++)

d[i]=sc.nextInt();

System.out.print(“Enter generator bits : “);

for(j=0;j<m;j++)

g[j]=sc.nextInt();

for(i=0;i<m-1;i++)

d[n+i]=0;

r=new int[m+n];

for(i=0;i<m;i++)

r[i]=d[i];

z=new int[m];

for(i=0;i<m;i++)

z[i]=0;

for(i=0;i<n;i++)

{

k=0;

msb=r[i];

for(j=i;j<m+i;j++)

{

if(msb==0)

r[j]=xor(r[j],z[k]);

else

r[j]=xor(r[j],g[k]);

k++;

}

r[m+i]=d[m+i];

}

System.out.print(“The code bits added are : “);

for(i=n;i<n+m-1;i++)

{

d[i]=r[i];

System.out.print(d[i]);

}

System.out.print(“\nThe code data is : “);

for(i=0;i<n+m-1;i++)

{

System.out.print(d[i]);

}

}

public static int xor(int x,int y)

{

if(x==y)

return(0);

else

return(1);

}

}