ERROR DETECTION MECHANISM:

import java.util.\*;

class ErrorDetect{

ErrorDetect()

{

}

static int checkParity(String rmsg,int parity)

{System.out.println("Checking parity");

int count=0;

for (int i=0;i<rmsg.length();i++)

{

if(rmsg.charAt(i)=='1')

{

count+=1;

}

}

if(parity==1)

{

if(count%2==1)

{

System.out.println("parity Accepted");

return 1;

}

}

if(parity==2)

{

if(count%2==0)

{

System.out.println("parity Accepted");

return 1;

}

}

return 0;

}

static int checkSum(String smsg,String rmsg)

{System.out.println("evaluating checksum");

String check="";

for (int i=0;i<smsg.length();i++)

{

if(smsg.charAt(i)=='1')

{

check+='0';

}

else{

check+='1';

}

}

System.out.println(check);

int b1 = Integer.parseInt(rmsg, 2);

int b2 = Integer.parseInt(check, 2);

int sum = b1 + b2;

int sumx=~(sum);

String sum1=Integer.toBinaryString(sumx);

String res=sum1.substring(sum1.length()-8,sum1.length());

System.out.println(res);

int x = Integer.parseInt(res, 2);

if(x==0)

{

return 1;

//System.out.println(" checksum");

}

return 0;

}

public static void main(String[] args) {

String smsg,rmsg;

Scanner sc=new Scanner(System.in);

System.out.println("enter the 8-bit message sent");

smsg=sc.next();

System.out.println("enter the 8-bit message recieved");

rmsg=sc.next();

System.out.println("enter parity\n1.odd\n2.even");

int parity=sc.nextInt();

int x=checkParity(rmsg,parity);

int y=checkSum(smsg,rmsg);

if(x==1 && y==1)

{

System.out.println("The Message is correct and Accepted");

}

else{

System.out.println("the message recieved is Wrong");

}

}

}

