**Experiment 5**

**Aim:** To perform CRC for error detection

**CRC Program:**

import java.util.Scanner;

class crc

{

public static void main(String [] args)

{

int [] data=new int[15];

int [] key=new int[5];

int [] rem=new int[5];

Scanner sc=new Scanner(System.in);

System.out.println("Enter the size of the data");

int m=sc.nextInt();

System.out.println("Enter the size of the key");

int m1=sc.nextInt();

System.out.println("Enter the data::");

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

{

data[i]=sc.nextInt();

}

System.out.println("Enter the Key::");

for(int j=0;j<m1;j++)

{

key[j]=sc.nextInt();

}

for(int k=0;k<m1-1;k++)

{

data[m+k]=0;

}

System.out.println("Data after appending 0");

for(int k=0;k<m+m1-1;k++)

{

System.out.print(data[k]);

}

int c=0;

for(int k=0;k<m1;k++)

{

if((data[k]==0 && key[k]==0)|| (data[k]==1 && key[k]==1))

{

rem[k]=0;

}

else

{

rem[k]=1;

}

}

System.out.println("\nFirst Remainder");

for(int k=0;k<m1;k++)

{

System.out.print(rem[k]);

}

System.out.print("\n");

for(int i1=m1;i1<m+m1-11;i1++)

{

if(rem[0]==0)

{

if(rem[0]==0)

{

for(int i=0;i<m1-1;i++)

{

rem[i]=rem[i+1];

}

rem[m1-1]=data[i1];

}

else

{

}

}

System.out.println("\nShifted Remainder is as follows::");

for(int i=0;i<m1;i++)

{

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

}

System.out.println("\n");

if(rem[0]==1)

{

for(int i11=0;i11<m1;i11++)

{

if((rem[i11]==0 && key[i11]==0)|| (rem[i11]==1 && key[i11]==1))

{

rem[i11]=0;

}

else

{

rem[i11]=1;

}

}

System.out.println("Remainder after XORing");

for(int i=0;i<m1;i++)

{

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

}

}

}

System.out.println("The message to be sent is ::");

for(int i=0;i<m1-1;i++)

{

data[m+i]=rem[i+1];

}

for(int i=0;i<m+m1-1;i++)

{

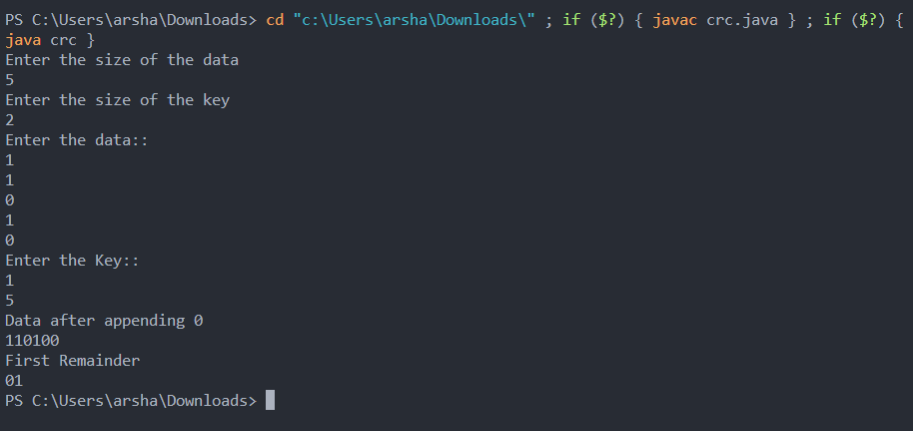
System.out.println(data[i]);

}

}

}

**Output:**

****