MALNAD COLLEGE OF ENGINEERING

(An Autonomous Institution under Visvesvaraya Technological University, Belagavi)
Hassan-573202, Karnataka, India

DATA COMMUNICATION(21CS503)

Activity Report on:

Cyclic Redundancy Check

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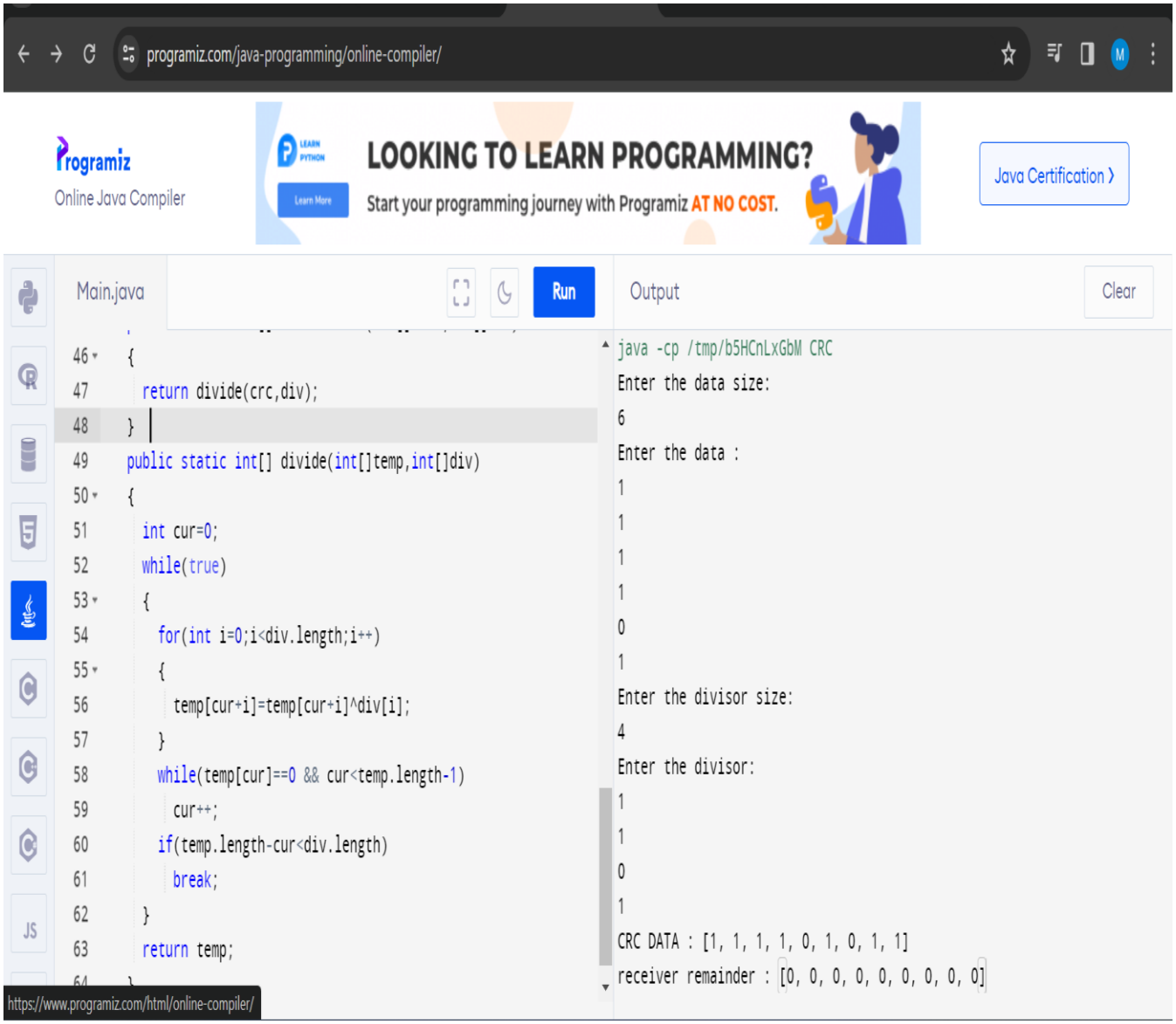
1.Write a java program for generating code word for given data word and to check whether received bit contains any error.

```
 import java.util.*;
public class CRC
 {
  public static void main(String[] args)
  {
    Scanner sc= new Scanner(System.in);
    System.out.println("Enter the data size:");
    int n=sc.nextInt();
    System.out.println("Enter the data :");
    int[] data= new int[n];
    for(int i=0;i<n;i++)
    {
      data[i]=sc.nextInt();
    }
    System.out.println("Enter the divisor size:");
    int m=sc.nextInt();
    int[] div= new int[m];
    System.out.println("Enter the divisor:");
    for(int i=0;i<m;i++)
    {
```

```
    div[i]=sc.nextInt();
  }
  int[] crc=senddata(data,div,n,m);
  System.out.println("CRC DATA : "+Arrays.toString(crc));
  int[] rem =receivedata(crc,div);
  System.out.print("receiver remainder : "+Arrays.toString(rem));
}
public static int[] senddata(int[]data,int[]div,int n,int m)
{
  int[] d= new int[m+n-1];
  int[] temp= new int[m+n-1];
  for(int i=0;i<n;i++)
  {
    d[i]=data[i];
    temp[i]=data[i];
  }
  int[] rem=divide(temp,div);
  int[] crc=new int[m+n-1];
  for(int i=0;i<n+m-1;i++)
  {
    crc[i]=d[i]|rem[i];
  }
```

```
return crc;
}
public static int[] receivedata(int[] crc,int[]div)
{
  return divide(crc,div);
}
public static int[] divide(int[]temp,int[]div)
{
  int cur=0;
  while(true)
  {
    for(int i=0;i<div.length;i++)
    {
      temp[cur+i]=temp[cur+i]^div[i];
    }
    while(temp[cur]==0 && cur<temp.length-1)
      cur++;
    if(temp.length-cur<div.length)
      break;
  }
  return temp;
}   }
```

OUTPUT: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Main.java
Run
Output
Clear
46 {
47 return divide(crc,div);
48 }
49 public static int[] divide(int[]temp,int[]div)
50 {
51 int cur=0;
52 while(true)
53 {
54 for(int i=0;i<div.length;i++)
55 {
56 temp[cur+i]=temp[cur+i]^div[i];
57 }
58 while(temp[cur]==0 && cur<temp.length-1)
59 cur++;
60 if(temp.length-cur<div.length)
61 break;
62 }
63 return temp;
java -cp /tmp/b5HCnLxGbM CRC
Enter the data size:
6
Enter the data :
1
1
1
1
0
1
Enter the divisor size:
4
Enter the divisor:
1
1
0
1
CRC DATA : [1, 1, 1, 1, 0, 1, 0, 1, 1]
receiver remainder : [0, 0, 0, 0, 0, 0, 0, 0]
https://www.programiz.com/html/online-compiler/