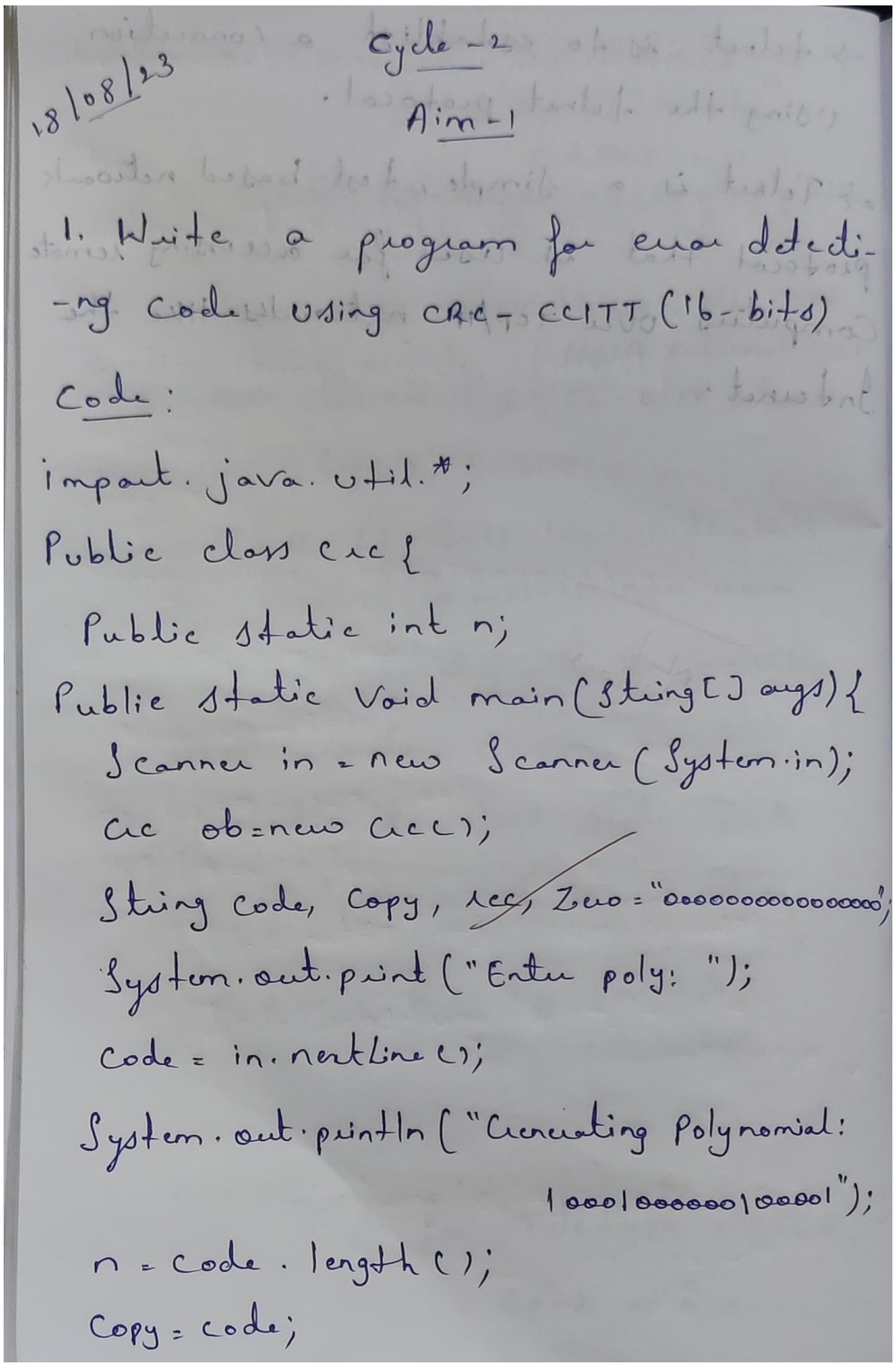
Aim-13

13. Write a program for error detecting code using CRCCCITT (16-bits).

Code:



18/08/23

Cycle-2

Aim-1

1. Write a program for error detecting code using CRC-CCITT (16-bits)

Code:

```
import java.util.*;
Public class crc{
  Public static int n;
Public static Void main(String[] args){
  Scanner in = new Scanner(System.in);
  crc ob=new crc();
  String code, copy, rec, Zero="0000000000000000";
  System.out.print("Enter poly: ");
  code = in.nextLine();
  System.out.println("Generating Polynomial:
                                  10001000000100001");
  n = code.length();
  copy = code;
```

```
code += Zero;
System.out.println("Modified poly: " + code);
code = ob.divide(code);
System.out.println("checkSum: " + code.Su
                    bstring(n1));
copy = copy.Substring(0, n) + code.Substring(n);
System.out.println("Final Codeword: " + copy);
System.out.println("Test Error detection 0
                    (yes) 1(no)? : ");
int choice = in.nextInt();
if(choice == 0){
System.out.print("Enter position on error: ");
int errPos = in.nextInt();
if(copy.charAt(errPos) == '1')
  Copy = copy.Substring(0, errPos) + "0" + copy.
                    Substring(errPos+1);

Copy = copy.Substring(0, errPos) + "1" + copy.
                    Substring(errPos+1);

System.out.println("Erroneous data: " + copy);
```

```
System.out.println("Error detected");
}
else
System.out.println("No error detected");
}
Public string divide(string s){
int i,j;
char x;
String div="10001000000100001";
for(i=0; i<n; i++){
  x=s.charAt(i);
for(j=0; j<7; j++){
  if(x=='1'){
  if(s.charAT(i+j)!=div.charAT(j))
    s=s.substring(0,i+j)+"1"+s.substring(i+j+1);

  else
    s=s.substring(0,i+j)+"0"+s.substring(i+j+1);
}}
return 0;
}
```

Output 1:

Enter poly : 1000100010001000

Generating polynomial : 10001000 0001 00001

Modified Poly : 1000100010001000000000000000000

CheckSum = 1000001010110001

Final Codeword : 1000100010001000 0000010101100 01

Do you want Error detection 0(yes) 1(No)? : 0

Enter position on error : 0

Erroneous data: 0000100010001000 0000010101100 01

Error detected.

Output 2:

Enter poly: 0101010101010101

Generating polynomial : 10001000000010000 1

Modified poly: 0101010101010101 0000000000000000

CheckSum : 1111101100011010

Final Codeword : 0101010101010101 1111011000110100

Do you want Error detection 0(yes) 1(no)? : 0

Enter Position on error : 15

Erroneous data: 01010101010101011111011
00011010

error detected:

11/9/2023

Output:

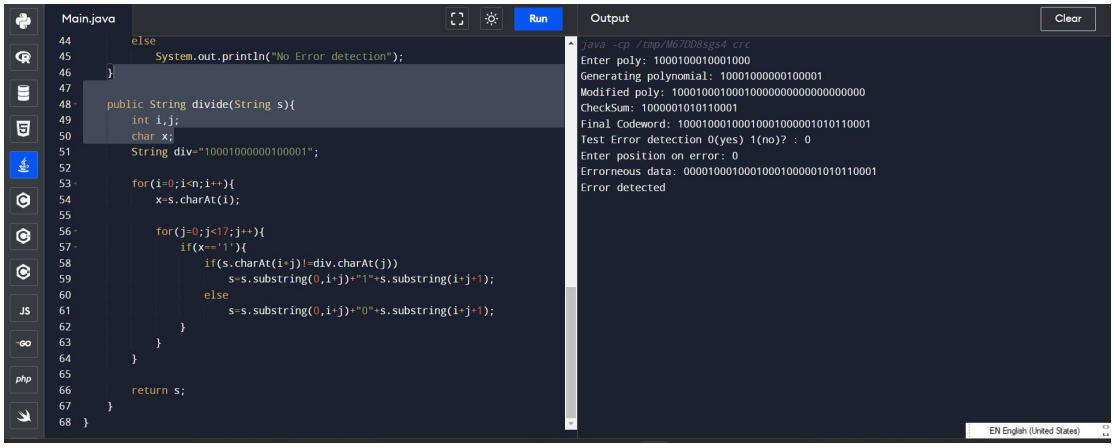


Fig: Output 1 (poly 1)

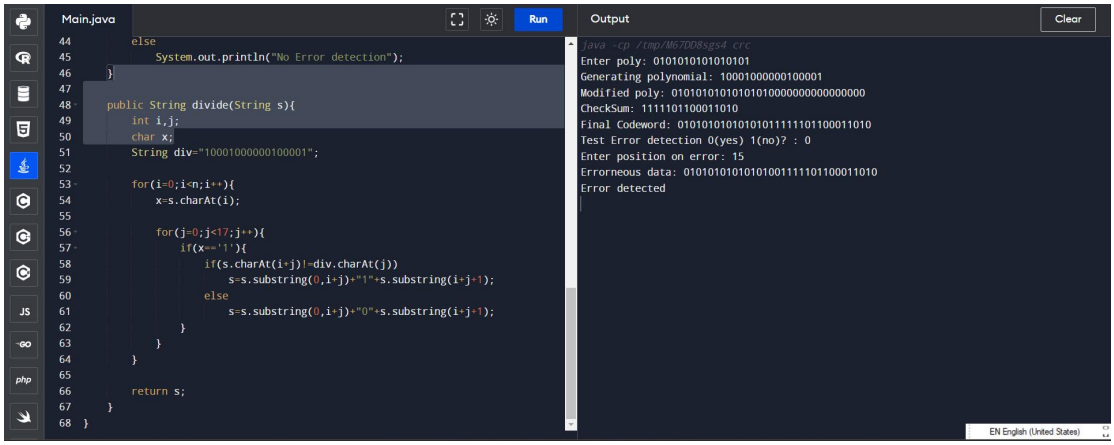


Fig: Output 2 (poly 2)