26-11-2020     Error detecting code using CRC-CCITT (16-bits).     Yashaswi. R

1BM18CS154

5th Sem, B sec

```java
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 = "000000 0000000000";
        System.out.println (" Enter message ");
        code = in.nextLine ();
        n = code.Length ();
        copy = code;
        code += zero;
        code = ob.divide (code);
        System.out.println ("Message = "+copy);
        copy = copy.substring (0,n) + code.substring (n);
        System.out.println ("CRC=");
        System.out.println (code.substring (n));
        System.out.println ("Transmitted frame is"+copy);
        System.out.println ("Enter received data");
        rec = in.nextLine ();
        if (zero.equals (ob.divide (rec).substring (n)))
            System.out.println ("Correct bits received");
```

```java
    else
        System.out.println("Received frame contains one or more
                            errors");
    in.close();
}
public String divide (String s)
{
    int i, j;
    char x;
    String div = "10001000001000001";
    for (i=0; i<n; i++)
    {
        x = s.charAt(i);
        for (j=0; j<17; 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 s;
}
}
```