

Program for error detecting code using
CRC-CCITT (16-bits)

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 = "0000000000000000";
```

```
        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")
```

```
        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 = "100010000000100001",
```

```
    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;
```

```
}
```

```
{
```