

Error detection code using CRC-CCITT (16-bits)

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```
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 = "0000 0000 0000 0000";
        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 = "10001000000100001";

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;

}

}

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