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

```
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 bits frame containing 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;
```

```
}
```

```
}
```