

Aim: WAP 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 word, copy, rrc;  
            zero = "0000000000000000";  
            System.out.println ("Enter message");  
            word = in.nextLine();  
            n = word.length();  
            copy = word;  
            word += zero;  
            word = ob.divide (word);  
            System.out.println ("Message = " + copy);  
  
            copy = copy.substring(0, n) + word.substring(n);  
            System.out.println ("CRC = ");  
            System.out.println (word.substring(n));  
            System.out.println ("Transmitted frame is " + copy);  
            System.out.println ("Enter received data");  
            rrc = in.nextLine();  
            if (zero.equals (ob.divide (rrc).substring(n)))  
                System.out.println ("Correct data received");  
            else  
                System.out.println ("Received frame contains one or more errors");  
            in.close();  
        }  
    }  
}
```

public String decode (String s)

{
 int i, j;
 char c;
 String dec = "01000100000001000001"

for (i = 0; i < n; i++)

{
 c = s.charAt(i);

 for (j = 0; j < 17; j++)

{

 if (c == '0') {

 if (s.charAt(i+j) != dec.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;

}

}