

29/12/22

# EXPERIMENT - 8

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AIM: Write a program for error detection using CRC 16 bit.

```

import java.util.*;
class crc
{
    void div (int a [], int k)
    {
        int gn[] = {1, 0, 0, 0, 1, 0, 0, 0, 0, 0, 0, 1, 0, 0, 0, 0, 1};
        int count = 0;
        for (int i = 0; i < k; i++)
        {
            if (a[i] == gn[0])
            {
                for (int j = i; j < 17 + i; j++)
                {
                    a[j] = a[j] ^ gn[count++];
                }
                count = 0;
            }
        }
    }

    public static void main (String args[])
    {
        int a[] = new int [50];
        int b[] = new int [50];
        int len, k;
        crc ob = new crc ();
        System.out.println ("Enter the length of Data");
        Scanner scan = new Scanner (System.in);
    }
}

```

```
len = scan.nextInt();
int flag = 0;
System.out.println("Enter the data word:");
for (int i = 0; i < len; i++)
{
    a[i] = scan.nextInt();
}
for (int i = 0; i < 16; i++)
{
    a[len++] = 0;
}
K = len - 16;
for (int i = 0; i < len; i++)
{
    b[i] = a[i];
}
ob.div(a, K);
for (int i = 0; i < len; i++)
    a[i] = a[i] ^ b[i];
System.out.println("Data to be transmitted :");
for (int i = 0; i < len; i++)
{
    System.out.println(a[i] + " ");
}
System.out.println();
System.out.println("Enter the recieved data:");
for (int i = 0; i < len; i++)
{
    a[i] = scan.nextInt();
}
```



```

ob.div(a, k);
for (int i = 0; i < len; i++)
{
    if (a[i] != 0)
    {
        flag = 1;
        break;
    }
}
if (flag == 1)
    System.out.println("error in data!");
else
    System.out.println("no error");
}

```

### OUTPUT :

Enter the length of data frame:

7

Enter the data word:

1 0 1 1 0 1 0 1

Data output :

1 0 1 1 1 0 1 0 0 0 1 0 1 1 0 1 0 1 0 0 0

Data recieved :

1 0 1 1 1 0 1 0 0 0 1 0 1 1 0 1 0 1 0 0 0

no error.

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