Date
Page

LAB-13

AIM:- Write a program for error detecting code using CRC-CCITM (16-bits)

```
#include<stdio.h>
#include<string.h>
#define N strlen(divisor)
char data[30];
char rem[30];
char divisor[30];
int length, i, j;

void xor()
{
    for(j=1; j<N; j++)
    {
        rem[j] = ((rem[j] == divisor[j]) ? '0' : '1');
}

void CRC()
{
    for(i=0; i<N; i++)
    {
        rem[i] = data[i];
    }
    do{
        if(rem[0] == '1')
            xor();
        for(j=0; j<N-1; j++)
            rem[j] = rem[j+1];
        rem[j] = remdata[i++];
```

```
    }
    while(i<=dlength+N-1);
}

void reciever()
{
    printf("Enter the data being recieved:");
    scanf("%s", data);
    printf("Data recieved: %s", data);
    CRC();
    for(i=0;(i<N-1)&&(rem[i]!='1');i++);
    {
        if(i<N-1)
            printf("\nError detected in data\n");
        else
            printf("\nNo Error detected in data\n");
    }
}

int main()
{
    printf("\nEnter data to be transmitted:");
    scanf("%s", data);
    printf("\nEnter the divisor:");
    scanf("%s", divisor);
    dlength = strlen(data);
    for(i=length;i<dlength+N-1;i++)
    {
        data[i]='0';
    }
```

```
printf("\n Data padded with N-1 zeroes : %s",data);
CRC();
printf("\n The Remainder or CRC is %s", Num);
for(i=dlength; i<dlength+N-1; i++)
        data[i] = rem[i-dlength];
printf("\n Final data being sent : %s", data);
reciever();
return 0;
}
```

OUTPUT

→ Enter the data to be transmitted : 1001101
Enter the Divisor : 1011
Data padded with N-1 zeroes : 1001101000
The remainder or CRC is : 101
Final data being recieved : 1001101101
Data recieved : 1001101101
No Error detected in data

→ [redacted]