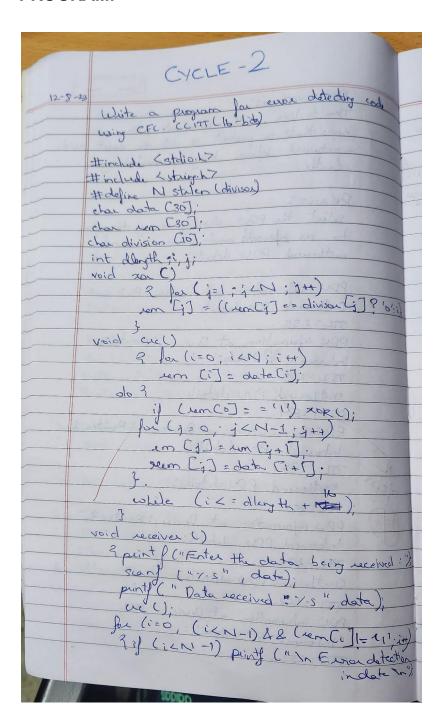
## CYCLE 2

#### AIM:

Write a program for error detecting code using CRC-CCITT (16-bits).

### **PROGRAM:**



ebe perif ("In No ara detected in deta hi); int main () ? into=0; scarf (" > Enter date to be transmitted!" puntje " in Enta the divisor"). dlength = stulen (data); for (i = dlength; i < dlength, + 15th, 14) print ("In data paded with the zeros". 1.5" cic(); print ("In The remainder or CRC is 7:3", "ren);

for (i=dleyth+16; "in dleayth + the rite);

date (i) = rem (indexth);

peint ("In Final date being sent: y-d," date) receiver (); returno, OUPPUT: 1) Enter the data to be transmitted: 100/10/ Enter the divisor: 1011 Pata paded with mes zero: Read arose The remainder of CRC 15! totald Enter the data being received: 1001101000 Pata received: 1001/0100 000000000111 No server detected in data.

2. Enter the data to be transmitted: 100/101 Pata podded with the zeros: local protoco The remainder of CRC 13: 100 110100 Dooococcoops, final data being sent: "100 110100 Dooococcoops, Enter the data being received: 1001109 Do Document Pata received: 10011 04000000000000001111 Euror detected in deta. ( Stand welche . Alberthe, and the stand of 2 T is 290 so reference all st/ ") I trive : [ It will now a to ) atak on Par Mattiment , Lob stile H. esting (1 1101: Jours of who First date being cent: 100 1101 1101 Policeschen Enter the date Lein weeked . 1001 pt

### **PROGRAM:**

```
#include<stdio.h>
#include<string.h>
#define N strlen(divisor)
char data[28];
char rem[28];
char divisor[10];
int dlength,i,j;
void XOR(){
   for(j = 1; j < N; j++)
  rem[j] = (( rem[j] == divisor[j])?'0':'1');
}
void receiver(){
   printf("Enter the received data: ");
   scanf("%s", data);
   printf("\n\n");
  printf("Data received: %s", data);
   crc();
  for(i=0;(i<N-1) && (rem[i]!='1');i++);
     if(i < N-1)
        printf("\nError detected\n\n");
     else
        printf("\nNo error detected\n\n");
}
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]=data[i++];
  }
  while(i<=dlength+16);
}
int main()
{ int c=0;
  printf("\nEnter data to be transmitted: ");
  scanf("%s",data);
  printf("\n Enter the Divisor: ");
  scanf("%s",divisor);
  dlength=strlen(data);
  for(i=dlength;i<dlength+16;i++)
     data[i]='0';
  printf("\n");
  printf("\n Data padded with n-1 zeros : %s",data);
  printf("\n");
  crc();
  printf("\nCRC or Check value is : %s",rem);
  printf("\n rem strlen is : %d ", strlen(rem));
  for(i=dlength+13;i<dlength+16;i++)
    { printf("\n %s",data);
       data[i]= rem[c++];
  printf("\n");
  printf("\n Final data to be sent : %s",data);
  printf("\n\n");
  receiver();
     return 0;
}
```

# **Output:**

```
Enter data to be transmitted: 1001101
Enter the Divisor: 1011
CRC or Check value is : 111
rem strlen is : 3
1001101000000000000000000
100110100000000000000100
10011010000000000000110
Final data to be sent : 10011010000000000000111
Enter the received data: 10011010000000000000111
Data received: 100110100000000000000111
No error detected
Enter data to be transmitted: 1001101
 Enter the Divisor: 1011
 CRC or Check value is : 111
 rem strlen is : 3
 1001101000000000000000000
 100110100000000000000100
 100110100000000000000110
 Final data to be sent : 1001101000000000000111
Enter the received data: 10011010000000000001111
Data received: 100110100000000000001111
Error detected
```

..Program finished with exit code 0