

WEEK 13

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

CODE:

```
#include<stdio.h>
int arr[17];

void xor(int x[], int y[])
{
    int k=0;
    for(int i=1;i<16;i++)
    {
        if(x[i]==y[i])
            arr[k++]=0;
        else
            arr[i]=1;
    }
}

void main()
{
    int dd[17],div[33],ze[17],i,k;

    printf("Enter the dataword \n");
    for(i=0;i<17;i++)
        scanf("%d",&div[i]);

    for(i=i;i<33;i++)
        div[i]=0;

    for(i=0;i<17;i++)
        ze[i]=0;
    printf("Enter dividend \n");
    for(i=0;i<17;i++)
        scanf("%d",&dd[i]);

    i=0;
```

```
k=0;
    for(i=i;i<17;i++)
        arr[k++]=div[i];
while(i<33)
{
    if(arr[0]==0)
        xor(arr,ze);
    else
        xor(arr,dd);

    arr[16]=div[i++];

}
k=0;
for(i=17;i<33;i++)
    div[i]=arr[k++];
printf("Codeword: ");
    for(i=0;i<33;i++)
        printf("%d",div[i]);

for(i=0;i<17;i++)
    arr[i]=0;

printf("\nAt receiver end \n");

k=0;
    for(i=i;i<17;i++)
        arr[k++]=div[i];
while(i<33)
{
    if(arr[0]==0)
        xor(arr,ze);
    else
        xor(arr,dd);

    arr[16]=div[i++];

}
```

```
k=0;  
for(i=17;i<33;i++)  
    div[i]=arr[k++];  
  
printf("Codeword: ");  
for(i=0;i<33;i++)  
    printf("%d",div[i]);  
}
```

OUTPUT:

```
C:\Users\Admin\Desktop\1BM21CS04\ADA\CRC16\bin\Debug\CRC16.exe  
Enter the dataword  
1 1 0 0 1 1 1 1 0 0 1 0 1 1 1  
Enter dividend  
0 0 1 0 0 0 0 0 1 0 0 0 1 1  
Codeword: 1011001111001011100000000000110  
Receiver end  
Codeword: 10110011110010111000000000000000  
Process returned 1 (0x1) execution time : 49.507 s  
Press any key to continue.
```

OBSERVATION:

13

```

    // include <stdio.h>
    #include <stdio.h>
    int main()
    {
        int incoming, outgoing, buck_size, n, store = 0;
        printf("Enter the buffer size ");
        scanf("%d", &buck_size);
        printf("Enter outgoing rate ");
        scanf("%d", &outgoing);
        printf("Enter no of packets ");
        scanf("%d", &n);
        while (n != 0)
        {
            printf("Enter one incoming packet size : ");
            scanf("%d", &incoming);
            if (incoming <= buck_size - store)
            {
                store += incoming;
                printf("Buffer buffer size %d out of %d in\n"
                    "buck_size ),\n");
            }
            else
            {
                printf("After outgoing %d packets left out of %d in\n"
                    "buffer %d, store , buck_size );\n");
                n--;
            }
        }
        printf("Data sent ; buffered packets is %d\n");
    }

```

~~1. In the first part of the code, there is a syntax error in the printf statement. It should be:~~

~~printf("Enter one incoming packet size : ");~~

~~2. In the second part of the code, there is a syntax error in the printf statement. It should be:~~

~~printf("After outgoing %d packets left out of %d in\n"
 "buffer %d, store , buck_size);\n");~~

~~3. In the third part of the code, there is a syntax error in the printf statement. It should be:~~

~~printf("Data sent ; buffered packets is %d\n");~~

Output

Enter no of Queues, buffer size, input & output
Packet size

4

7

4

1

Packet is accepted rem. Space = 3

Packet is accepted rem. space = 0

Packet not accepted rem space = 1

Packet not accepted rem space = 2

3 (1, 2, 3) forward 6:00
(1, 2, 3, 4) forward 7:00
(total 120%) free

(total 120%: forward 60%) free

(++), (1, 2, 3) forward 7:00 (1-120%) free
(1-120%) free

3 (1, 2, 3) forward 6:00

(1, 2, 3, 4) forward 7:00

(total 120%: forward 60%) free

3 (1, 2, 3) forward 6:00

(++), (1, 2, 3) forward 7:00

(1, 2, 3, 4) forward 7:00

(total 120%: forward 60%) free

(1, 2, 3, 4) forward 7:00

(total 120%: forward 60%) free