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)
```

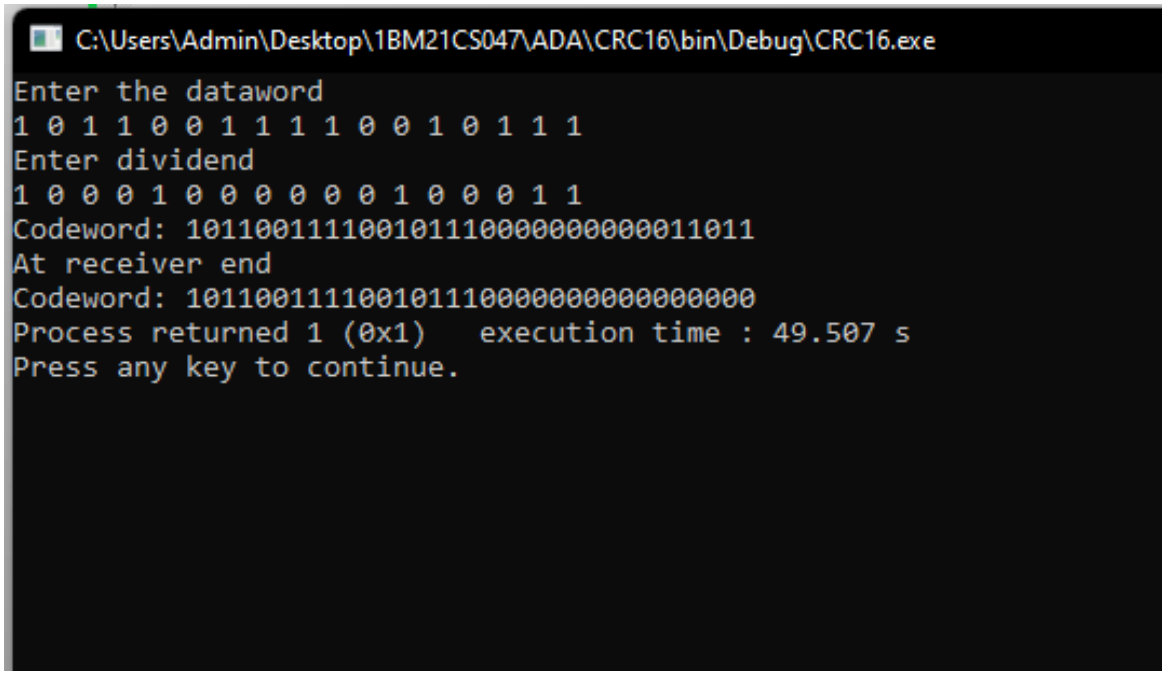
```
            xor(arr,ze);
        else
            xor(arr,dd);

        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:



OBSERVATION:

17/8/23

LAB - 13

AIM -
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");
    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 ");
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+4];
}
k=0;
for (i=17; i<33; i++)
    div[i] = arr[k++];
    printf(" codword ");
    for (i=0; i<33; i++)
        printf("%d", div[i]);
for (i=0; i<17; i++)
    arr[i]=0;
printf (" At receiver end ");
ik=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] = dir[i++];
 }
K=0;
for (i=17; i<33; i++)
     dir[i] = arr[k++];
printf("codeword");
    for (i=0; i<33; i++)
      printf("%d", dir[i]);
}
```

OUTPUT:

Enter the dataword

10110011110010111

Enter the divisor

10001000000100011

codeword: 10110011110010111000000000000011011

At receiver end

codeword: 10110011110010111000000000000000000

30/8/2023