LAB OBSERVATION

Name: Shashank M Patil
USN: 1BM21CS200

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

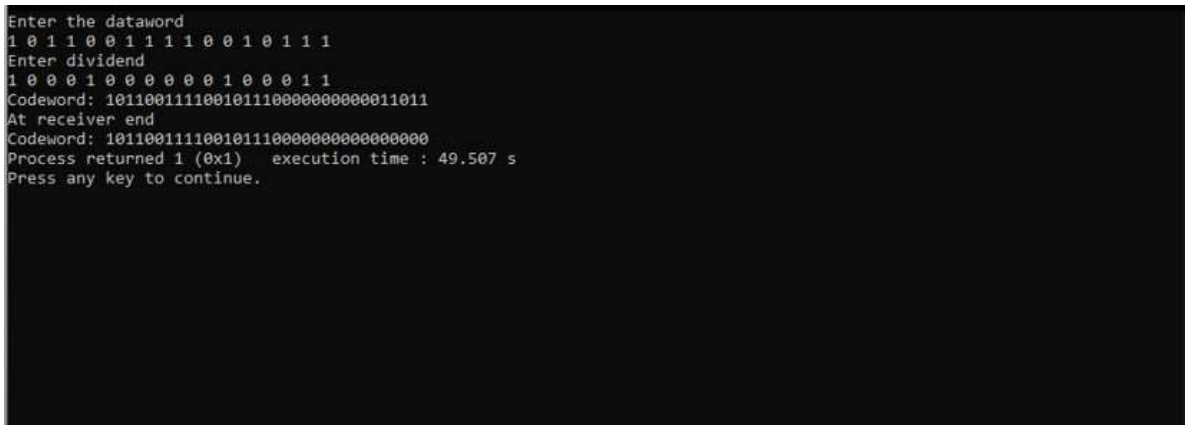
Code:

```
#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:


Enter the dataword
1 0 1 1 0 0 1 1 1 1 0 0 1 0 1 1 1
Enter dividend
1 0 0 0 1 0 0 0 0 0 0 1 0 0 0 1 1
Codeword: 10110011110010111000000000011011
At receiver end
Codeword: 10110011110010111000000000000000
Process returned 1 (0x1)   execution time : 49.507 s
Press any key to continue.