

COMPUTER NETWORKS

LAB OBSERVATION Shashank M S – 1BM21CS201

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: 101100111100101110000000000011011
At receiver end
Codeword: 101100111100101110000000000000000
Process returned 1 (0x1)   execution time : 49.507 s
Press any key to continue.
```