

17/8/23

Lab - 9 [i]

Q] Write a Program for Error detecting code using CRC.

→ C-code

```
#include <stdio.h>
#include <string.h>
#define N strlen(Poly)

char data[30];
char check-value[30];
char Poly[10];
int data-length, i, j;
void xor
{
    for (j = 1; j < N; j++)
        check-value[j] = (check-value[j] == Poly[j])
            ? '0' : '1';
}

void receive()
{
    printf("Enter the received data:");
    scanf("%s", data);
    printf("Data received: %s", data);
    clrscr();

    for (i = 0; i < N - 1; i++)
        if (check-value[i] == '1')
            printf("Error detected");
        else.
```

```
printf("No error detected"),
```

```
}
```

```
void crc()
```

```
{
```

```
for (i=0; i<n; i++).
```

```
check_value[i] = data[i];
```

```
do {
```

```
if (check_value[0] == '1')
```

```
xor();
```

```
for (j=0; j<n-1; j++).
```

```
check_value[j] = check_value[j+1];
```

```
check_value[j] = data[j++];
```

```
} while (i <= data.length + n + 1);
```

```
}
```

```
int main()
```

```
{ printf("Enter data to be transmitted:");
```

```
scanf("%s", &data);
```

```
printf("Enter the divisor polynomial:");
```

```
scanf("%s", &poly);
```

```
data_length = strlen(data);
```

```
for (i = data_length; i < data_length + n - 1; i++).
```

```
data[i] = 0;
```

```
printf("Data padded with n-1 zeros: %s", data/
```

```
crc());
```



```

Printf ("CRC value is %s", CRC);
for (i = data.length; i < data.length + 4; i++)
    data[i] = Check value [i - data.length];
Printf ("Final data word to be sent: %s", data);
}
}
return 0;
}

```

output:-

Enter data to be transmitted :- 101010.

Enter the divisor Polynomial :- 1011.

Data Padded with zeros: 101010000.

CRC value is :- 001.

Final data word to be sent : 101010001

Enter the receiver data : 10001000.

Error detected.

NP  
all rights



C:\Users\Admin\Desktop\IBM21CS04\ADA\CRC16\bin\Debug\CRC16.exe

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.

