**NETWORK AND COMMUNICATION**

**LAB 2**

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**CODE FOR ERROR DETECTION USING CRC**

**CODE :**

**#include<stdio.h>**

**#include<string.h>**

**#define N strlen(div)**

**char data[28],rem[28],div[]="1011";**

**int a,i,c;**

**void xor(){**

**for(c = 1;c < N; c++)**

**rem[c] = ((rem[c] == div[c])?'0':'1');**

**}**

**void crc(){**

**for(i=0;i<N;i++)**

**rem[i]=data[i];**

**do{**

**if(rem[0]=='1')**

**xor();**

**for(c=0;c<N-1;c++)**

**rem[c]=rem[c+1];**

**rem[c]=data[i++];**

**}while(i<=a+N-1);**

**}**

**int main()**

**{**

**printf("\nEnter data : ");**

**scanf("%s",data);**

**printf("\nRead Data : %s",div);**

**a=strlen(data);**

**for(i=a;i<a+N-1;i++)**

**data[i]='0';**

**crc();**

**printf("\nRemainder is : %s",rem);**

**for(i=a;i<a+N-1;i++)**

**data[i]=rem[i-a];**

**printf("\nFinal codeword is : %s",data);**

**if(i==0)**

**{**

**do{**

**printf("\nEnter the position where error is to be inserted : ");**

**scanf("%d",&i);**

**}while(i==0 || i>a+N-1);**

**data[i-1]=(data[i-1]=='0')?'1':'0';**

**printf("\n----------------------------------------");**

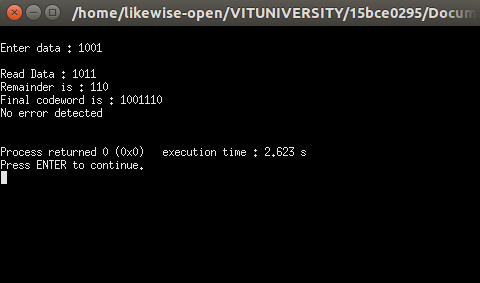
**}**

**crc();**

**return 0;**

**}**

**OUTPUT :**

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