CN - Lab Test - 2

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```
#include<iostream>
#include <string.h>

using namespace std;

int crc(char *ip, char *op, char *poly, int mode)
{
    strcpy(op, ip);
    if(mode) {
        for( int i = 1; i<strlen(poly); i--)
        strcat(op, "0");
    }
for(int i=0; i<strlen(ip); i++){
    if (op[i]=='1'){
        for( int j=0; j<strlen(poly); j++){
            if (op[i+j]==poly[j])
                op[i+j] = '0';
            else
                op[i+j]= '1';
        }
    }
}
for(int i=0; i<strlen(op); i++)
        if (op[i]=='1')
            return 0;
    return 1;
}
```

```
int main()
{
 char ip[50], op[50], recv[50];
 char poly[] = "10001000000100001";
                          ↳ 100000111 (for our polynomial)
 cout << "Enter the input message in binary" << endl;
 cin >> ip;
 crc(ip, op, poly, 1);
cout<<"The transmitted message is: "<<ip<<
        op+strlen(ip) <<endl;
cout << "Enter the received message in
        binary" <<endl;
 cin >>recv;
if (crc(recv, op, poly, 0))
   cout << "No error in data" <<endl;
else
   cout << "Error in data transmission
           has occurred" <<endl;
 return 0;
}
```

$$x^8 + x^2 + x + 1 = 0$$

1	0	0	0	0	0	1	1	1
8	7	6	5	4	3	2	1	0