CSE1004 – Network and Communication [LAB]

(LAB2 – 22/07/2020) – Faculty: Dr. Kanchana Devi V

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Code in C++ Language

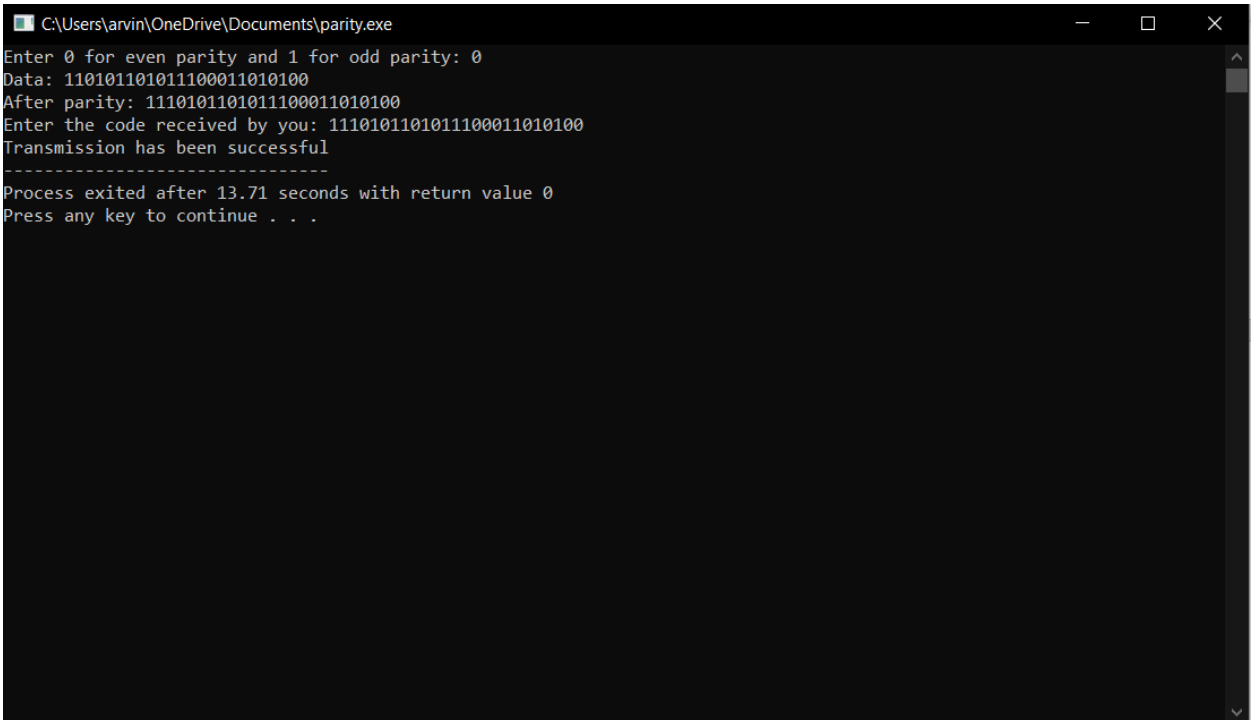
```
#include<iostream>
#include<string>
#include<algorithm>
using namespace std;
string binary(long int n)
{
    string s="";
    while(n>0)
    {
        if(n%2)
            s+='1';
        else
            s+='0';
        n/=2;
    }
    return(s);
}
int main()
{
```

```
    long int n=14072020;
    int choice, j;
    cout<<"Enter 0 for even parity and 1 for odd
parity: ";
    cin>>choice;
    string s = binary(n), final, r;
    for(j=0; s[j]!='\0'; j++);
    for (int i = 0; i < j / 2; i++)
        swap(s[i], s[j - i - 1]);
    cout<<"Data: "<<s<<endl;
    int count=0;
        char parity;
        for(int i=0; i<j; i++)
            if(s[i]=='1')
                count++;
    if(choice==0) //Even parity
    {
        if(count%2==0) //Even number of 1s exist
            parity='0';
        else
            parity='1';

    }
    else //Odd parity
    {
        if(count%2==0) //Even number of 1s exist
            parity='1';
```

```
        else
            parity='0';
    }
    final=parity+s;
    cout<<"After parity: "<<final<<endl;

    cout<<"Enter the code received by you: ";
    cin>>r;
    int count1=0, len;
    for(len=0; r[len]!='\0'; len++);
    if(len!=j+1)
    {
        cout<<"Error has occurred";
        exit(0);
    }
    for(int i=1; i<len; i++)
        if(r[i]=='1')
            count1++;
    if((count1%2==0)&&(choice==0)&&(r[0]==0)&&(r==final
))
        cout<<"Transmission has been successful";
    else
if((count1%2!=0)&&(choice==1)&&(r[0]==1)&&(r==final))
        cout<<"Transmission has been successful";
    else
        cout<<"Transmission has failed";
    return 0;
}
```

Output Screenshot:

1. Successful Case



2. Failed Case