Submission Date : November 11th,2024

FILE HANDLING AND RECCURSIVE FUNCTIONS

TASK 1:

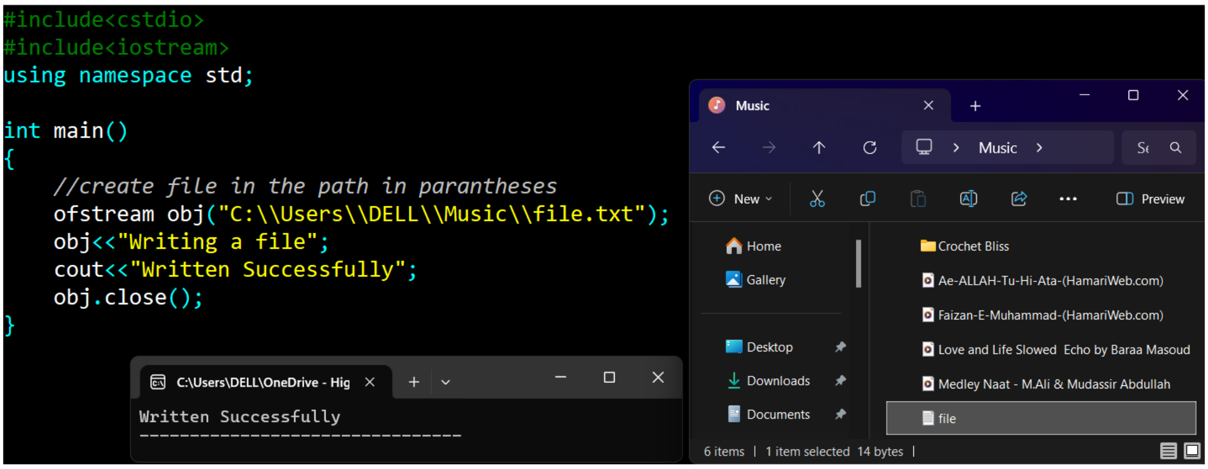
Perform the following operations on a named data.text:

- Create the file and write a message into it.
- Read and display the content of the file.
- Append a new message to the file.
- Count the number of words in the file.
- Rename the file to info.txt.
- Delete the file.

CODE:

```
#include<iostream>
#include<fstream>
#include<cstdio>
using namespace std;
int main() {

      //create file, write
  ofstream obj("C:\\Users\\Student\\Desktop\\file.txt");
  obj<< "this is my first file \n";
      cout<<"Written successfully"<<endl;
      obj.close();

      //read from file

      ifstream obj1("C:\\Users\\Student\\Desktop\\file.txt");
      if(obj1.is_open())
      {

      string st;
      while(getline(obj1,st))
      {
      cout<<st<<" ";
    }
    obj1.close();
     }     else     {      cout<<"unable
to open the file \n";      return 1;
      }
  //Append data into file       ofstream
appx("C:\\Users\\Student\\Desktop\\file.txt", ios::app);
  appx<<"this is appended line \n";   cout<<"\n Appended
successfully";       appx.close();


      //Rename  file
  string oldfile= "C:\\Users\\Student\\Desktop\\file.txt";    string
newfile = "C:\\Users\\Student\\Desktop\\newfile.txt";
  rename(oldfile.c_str(), newfile.c_str());
      cout<<"\n renamed successfully";



      //delete file
  //string filename= "C:\\Users\\Student\\Desktop\\file.txt";
  if(remove(filename.c_str())==0)
      {
            cout<<"file deleted";
      }
      else
      {
            cout<<"unable to open the file";
     return 1;
      }
```

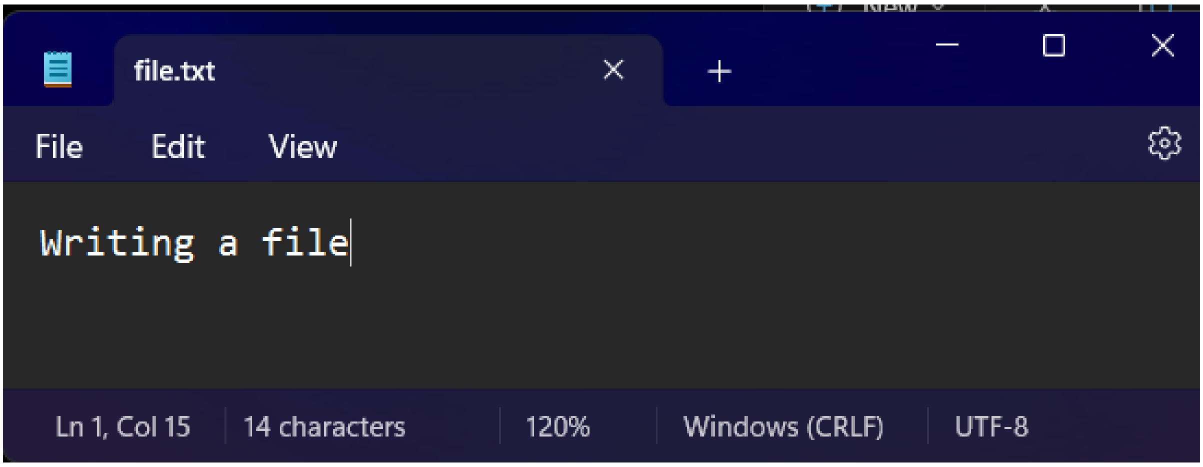
}**OUTPUT:**



```
#include<cstdio>
#include<iostream>
using namespace std;

int main()
{
    //create file in the path in parantheses
    ofstream obj("C:\\Users\\DELL\\Music\\file.txt");
    obj<<"Writing a file";
    cout<<"Written Successfully";
    obj.close();
}
```

```
Written Successfully
--------------------------------
```

C:\Users\DELL\OneDrive - Hig
Music
New
Preview
Home
Gallery
Desktop
Downloads
Documents
Crochet Bliss
Ae-ALLAH-Tu-Hi-Ata-(HamariWeb.com)
Faizan-E-Muhammad-(HamariWeb.com)
Love and Life Slowed Echo by Baraa Masoud
Medley Naat - M.Ali & Mudassir Abdullah
file
6 items | 1 item selected 14 bytes |



Writing a file

Ln 1, Col 15 | 14 characters | 120% | Windows (CRLF) | UTF-8

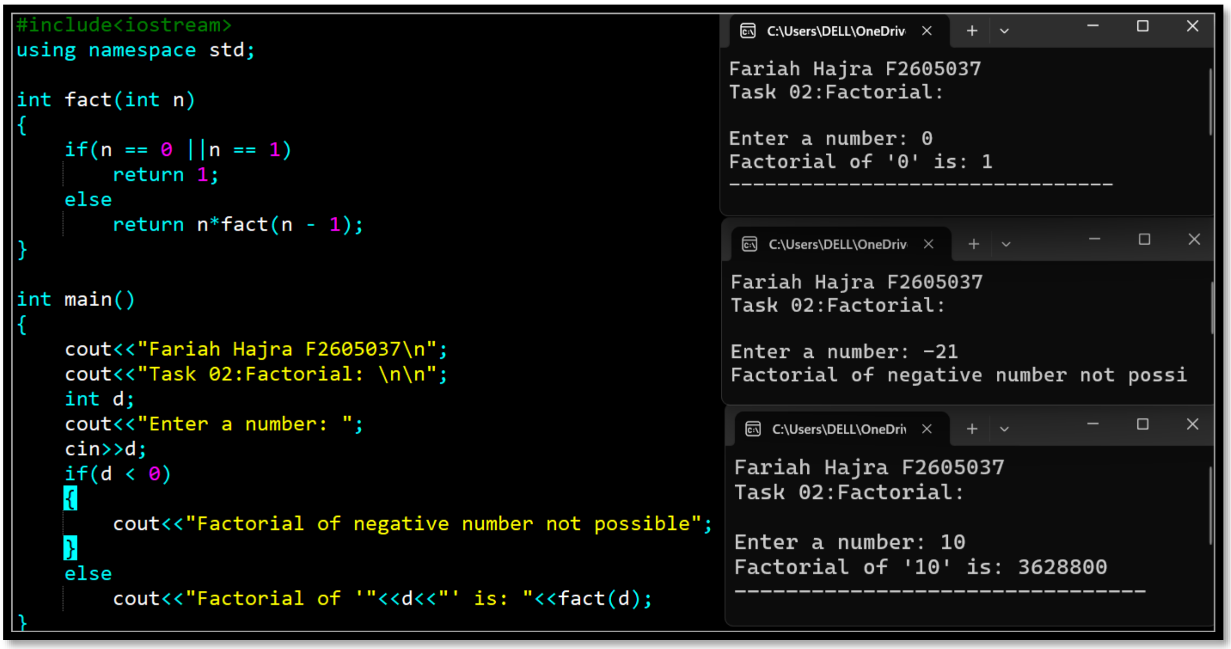
TASK 2:

Write a recursive function to calculate the factorial of a given number n. Test the function with different values of n.

CODE:

```
#include<iostream> using
namespace std;

int fact(int n)
{
      if(n == 0 ||n == 1)
            return 1;
      else
            return n*fact(n - 1);
}
int main() {
   cout<<"Fariah Hajra F2605037\n";    cout<<"Task
02:Factorial: \n\n";
      int d;
   cout<<"Enter a number: ";
   cin>>d;     if(d < 0)
      {
            cout<<"Factorial of negative number not possible";
      }
      else
            cout<<"Factorial of '"<<d<<"' is: "<<fact(d);
```

} **OUTPUT:**



```
#include<iostream>
using namespace std;

int fact(int n)
{
    if(n == 0 ||n == 1)
        return 1;
    else
        return n*fact(n - 1);
}

int main()
{
    cout<<"Fariah Hajra F2605037\n";
    cout<<"Task 02:Factorial: \n\n";
    int d;
    cout<<"Enter a number: ";
    cin>>d;
    if(d < 0)
    {
        cout<<"Factorial of negative number not possible";
    }
    else
        cout<<"Factorial of '"<<d<<"' is: "<<fact(d);
}
```

```
Fariah Hajra F2605037
Task 02:Factorial:

Enter a number: 0
Factorial of '0' is: 1
--------------------------------
```

```
Fariah Hajra F2605037
Task 02:Factorial:

Enter a number: -21
Factorial of negative number not possi
```

```
Fariah Hajra F2605037
Task 02:Factorial:

Enter a number: 10
Factorial of '10' is: 3628800
--------------------------------
```

TASK 3:

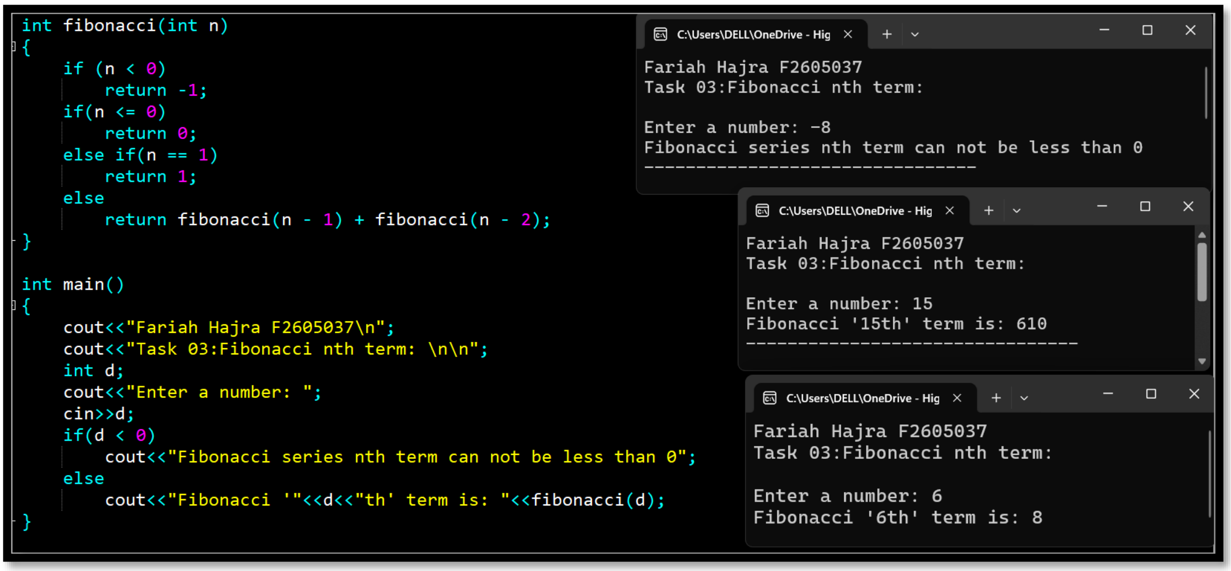
Write a recursive function to generate the Fibonacci series up to the n-th term. Use this function in a program to display the series for a user-specified value of n.

CODE:

```
#include<iostream> using
namespace std;

int fibonacci(int n)
{
   if (n < 0)
   return -1;
   if(n <= 0)
           return 0;   else
if(n == 1)
   return 1;
        else
                return fibonacci(n - 1) + fibonacci(n - 2);
}
int main() {
        cout<<"Fariah Hajra F2605037\n";
        cout<<"Task 03:Fibonacci nth term: \n\n";
        int d;
   cout<<"Enter a number: ";
   cin>>d;
        if(d < 0)
                cout<<"Fibonacci series nth term can not be less than 0";
        else
```

```
            cout<<"Fibonacci '"<<d<<"th' term is: "<<fibonacci(d);
}
```

OUTPUT:



```
int fibonacci(int n)
{
    if (n < 0)
        return -1;
    if(n <= 0)
        return 0;
    else if(n == 1)
        return 1;
    else
        return fibonacci(n - 1) + fibonacci(n - 2);
}

int main()
{
    cout<<"Fariah Hajra F2605037\n";
    cout<<"Task 03:Fibonacci nth term: \n\n";
    int d;
    cout<<"Enter a number: ";
    cin>>d;
    if(d < 0)
        cout<<"Fibonacci series nth term can not be less than 0";
    else
        cout<<"Fibonacci '"<<d<<"th' term is: "<<fibonacci(d);
}
```

```
Fariah Hajra F2605037
Task 03:Fibonacci nth term:

Enter a number: -8
Fibonacci series nth term can not be less than 0
--------------------------------
```

```
Fariah Hajra F2605037
Task 03:Fibonacci nth term:

Enter a number: 15
Fibonacci '15th' term is: 610
--------------------------------
```

```
Fariah Hajra F2605037
Task 03:Fibonacci nth term:

Enter a number: 6
Fibonacci '6th' term is: 8
```

TASK 4:

Define a structure named Student with the following attributes: Name, Roll Number, and Marks.

- **Create an array of Student structures to store details of 5 students.**
- **Write a program to input details for these 5 students from the user.**
- **Display the details of all students who scored more than 75 marks.**

CODE:

```
#include<iostream>
using namespace std;
#include<cstring>

struct scholar
{  string
name;  int
rollnum;
int marks;
};  int
main() {
 cout<<"Fariah Hajra F2605037\n";
 cout<<"Task 04:Enetring data using Strucure: \n\n";
int scholar.data[5];
 cout<<"Enter data of students(name, rollno., marks): \n";
for(int i = 0;i < 4;i ++)
 {
   cin>>d[i].name;
   cin>>d[i].rollnum;
```

```
       cin>>d[i].marks;
 }
 cout<<"Data eneted having marks >75 is:  "
for(int i = 0;i <= 4;i++)
 {
       if(d[i].marks >= 75)
 {
       cout<<"student"<<d[i].name;
 }  else       cout<<"Factorial of '"<<d<<"' is: 
"<<fact(d);

}
```

OUTPUT: