Object Oriented Programming Lab

Spring2025

Assignment #12
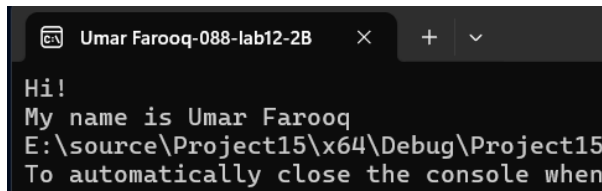
Umar Farooq
09-131242-088
BSE-2B

DEPARTMENT OF SOFTWARE ENGINEERING
BAHRIA UNIVERSITY ISLAMABAD CAMPUS

Task 01: Write a C++ program that reads a text file **character by character** and displays its contents on the screen.

Code:

```cpp
#include <iostream>
#include <fstream>
using namespace std;
int main()
{
        string fileName = "Task1.txt";
        ifstream file(fileName);
        char ch;
        while (file.get(ch))
        {
                cout << ch;
        }
        file.close();
        return 0;
}
```

Output:

Task 02: Write a program that takes a string from the user and **writes it to a disk file**.

Code:
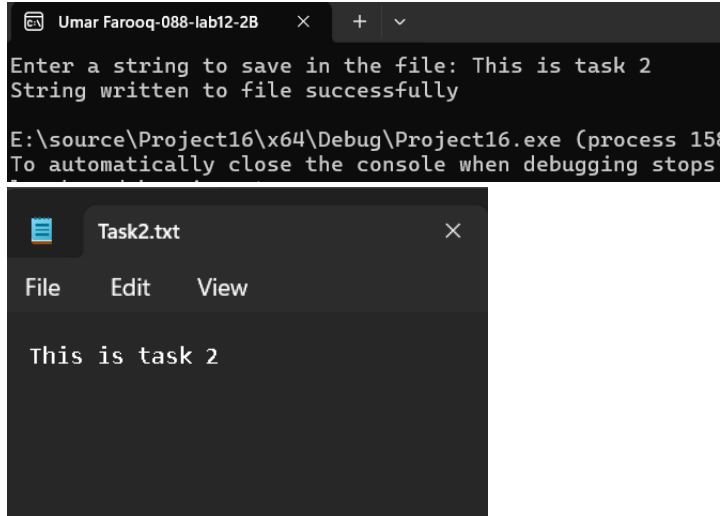
```cpp
#include <iostream>
#include <fstream>
#include <string>
using namespace std;
int main()
{
        string userInput;
        cout << "Enter a string to save in the file: ";
        getline(cin, userInput);
        ofstream file("Task2.txt");
        file << userInput;
        file.close();
```

```
cout << "String written to file successfully" << endl;
return 0;
}
```
Output:

Task 03: Write a program that reads data from a text file **one character at a time**, counts the total number of characters, and displays the count on the screen.

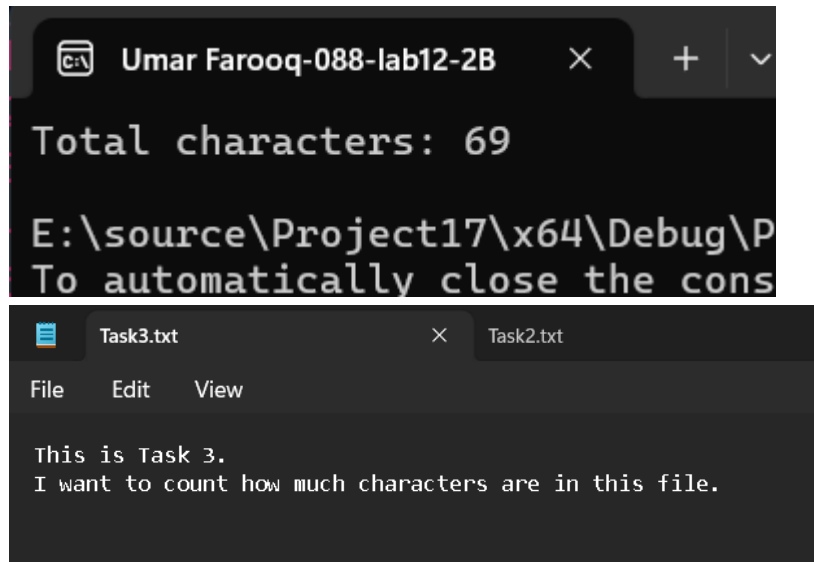Code:

```cpp
#include <iostream>
#include <fstream>
using namespace std;
int main()
{
        string fileName = "Task3.txt";
        ifstream file(fileName);
        char ch;
        int count = 0;
        while (file.get(ch))
        {
                count++;
        }
        file.close();
        cout << "Total characters: " << count << endl;
        return 0;
}
```

Output:

Umar Farooq-088-lab12-2B

Total characters: 69

E:\source\Project17\x64\Debug\P
To automatically close the cons

Task3.txt   ×   Task2.txt

File   Edit   View

This is Task 3.
I want to count how much characters are in this file.

Task 04: Create a file named **"Data"** and store information for **five students**, including:

- Name
- Age
- CGPA
- Date of Birth
- Place of Birth

Use appropriate data types and file I/O streams.

Code:

```
#include <iostream>
#include <fstream>
#include <string>
using namespace std;
class Student {
private:
        string name;
        int age;
        float CGPA;
        string dateOfBirth;
        string placeOfBirth;
public:
        Student(string n, int a, float c, string dob, string pob)
        {
                name = n;
                age = a;
```

```cpp
            CGPA = c;
            dateOfBirth = dob;
            placeOfBirth = pob;
        }
        void writeToFile(ofstream& file, int number)
        {
            file << "Student " << number << ": " << endl;
            file << "Name: " << name << endl;
            file << "Age: " << age << endl;
            file << "CGPA: " << CGPA << endl;
            file << "Date of birth: " << dateOfBirth << endl;
            file << "Place of birth: " << placeOfBirth << endl;
            file << "------------------------------" << endl;
        }
};
int main()
{
    ofstream file("Task4.txt");

    Student s1("Umar Farooq",19, 2.1, "23-7-2006", "Quetta");
    Student s2("Ahtesham khan", 20, 2.8, "19-6-2005", "Muzzaffarabad");
    Student s3("Shahzeb Qamar", 18, 2.4, "14-5-2005", "Islamabad");
    Student s4("Saad Ali", 19, 3.3, "28-7-2006", "Karachi");
    Student s5("Daniyal Ahmed", 21, 3.5, "2-2-2004", "Rawalpindi");

    s1.writeToFile(file, 1);
    s2.writeToFile(file, 2);
    s3.writeToFile(file, 3);
    s4.writeToFile(file, 4);
    s5.writeToFile(file, 5);

    file.close();
    cout << "Data written to file successfully!" << endl;
    return 0;
}
```

Output:

Data written to file successfully!

E:\source\Project18\x64\Debug\Projec
To automatically close the console w

Task4.txt   ×   Task3.t

File   Edit   View

Student 1:
Name: Umar Farooq
Age: 19
CGPA: 2.1
Date of birth: 23-7-2006
Place of birth: Quetta

Student 2:
Name: Ahtesham khan
Age: 20
CGPA: 2.8
Date of birth: 19-6-2005
Place of birth: Muzzaffarabad

Student 3:
Name: Shahzeb Qamar
Age: 18
CGPA: 2.4
Date of birth: 14-5-2005
Place of birth: Islamabad

Student 4:
Name: Saad Ali
Age: 19
CGPA: 3.3
Date of birth: 28-7-2006
Place of birth: Karachi

Student 5:
Name: Daniyal Ahmed
Age: 21
CGPA: 3.5
Date of birth: 2-2-2004
Place of birth: Rawalpindi

Task 05: Create a text file with file name "num.txt" (input mode). Write three numbers in each line as shown below:

66 33 16

13 29 12

Write a program to read three numbers from each line, calculate the sum and store the result in the file "sum.txt" (output mode) as shown below:
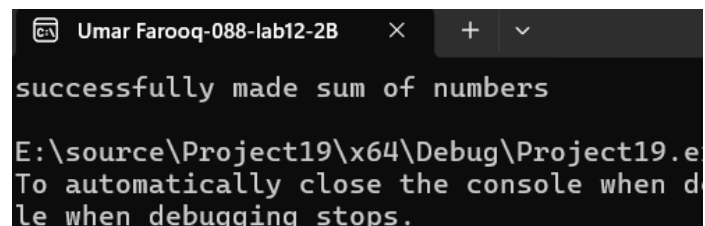
66 33 16 115

13 29 12   54

Code:

```cpp
#include <iostream>
#include <fstream>
using namespace std;
int main()
{
        ifstream input("Num.txt");
        ofstream output("Sum.txt");
        int a, b, c;
        while (input >> a >> b >> c)
        {
                int sum = a + b + c;
                output << a << " " << b << " " << c << " " << sum << endl;
        }
        input.close();
        output.close();
        cout << "successfully made sum of numbers" << endl;
        return 0;
}
```

Output:

Num.txt

File   Edit   View

```
66 33 16
13 29 12
```

Sum.txt

File   Edit   View

```
66  33  16  115
13  29  12  54
```