

## **Practice Task**

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

int main()
{
    string s1("happy");
    string s2(" birthday");
    string s3;

    // test overloaded equality and relational operators
    cout << "s1 is \"" << s1 << "\"; s2 is \"" << s2
        << "\"; s3 is \"" << s3 << "\"\n\n";
    cout << "The results of comparing s2 and s1:\n";
    cout << "s2 == s1 yields " << (s2 == s1 ? "true" : "false")
        << "\n";
    cout << "s2 != s1 yields " << (s2 != s1 ? "true" : "false")
        << "\n";
    cout << "s2 > s1 yields " << (s2 > s1 ? "true" : "false")
        << "\n";
    cout << "s2 < s1 yields " << (s2 < s1 ? "true" : "false")
        << "\n";
    cout << "s2 >= s1 yields " << (s2 >= s1 ? "true" : "false")
        << "\n";
    cout << "s2 <= s1 yields " << (s2 <= s1 ? "true" : "false");

    // test string member function empty
    cout << "\n\nTesting s3.empty(): " << endl;

    if (s3.empty())
    {
        cout << "s3 is empty; assigning s1 to s3;" << endl;
        s3 = s1; // assign s1 to s3
        cout << "s3 is \"" << s3 << "\"\n";
    } // end if

    // test overloaded string concatenation operator
    cout << "\n\ns1 += s2 yields s1 = ";
    s1 += s2; // test overloaded concatenation
    cout << s1;

    // test overloaded string concatenation operator with a char *
    string
    cout << "\n\ns1 += \" to you\" yields" << endl;
    s1 += " to you";
    cout << "s1 = " << s1 << "\n\n";

    // test string member function substr
    cout << "The substring of s1 starting at location 0 for\n"
        << "14 characters, s1.substr(0, 14), is:\n"
        << s1.substr(0, 14) << "\n\n";

    // test substr "to-end-of-string" option
```

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```
cout << "The substring of s1 starting at\n"
      << "location 15, s1.substr(15), is:\n"
      << s1.substr(15) << endl;

// test copy constructor
string s4(s1);
cout << "\ns4 = " << s4 << "\n\n";

// test overloaded assignment (=) operator with self-assignment
cout << "assigning s4 to s4" << endl;
s4 = s4;
cout << "s4 = " << s4 << endl;

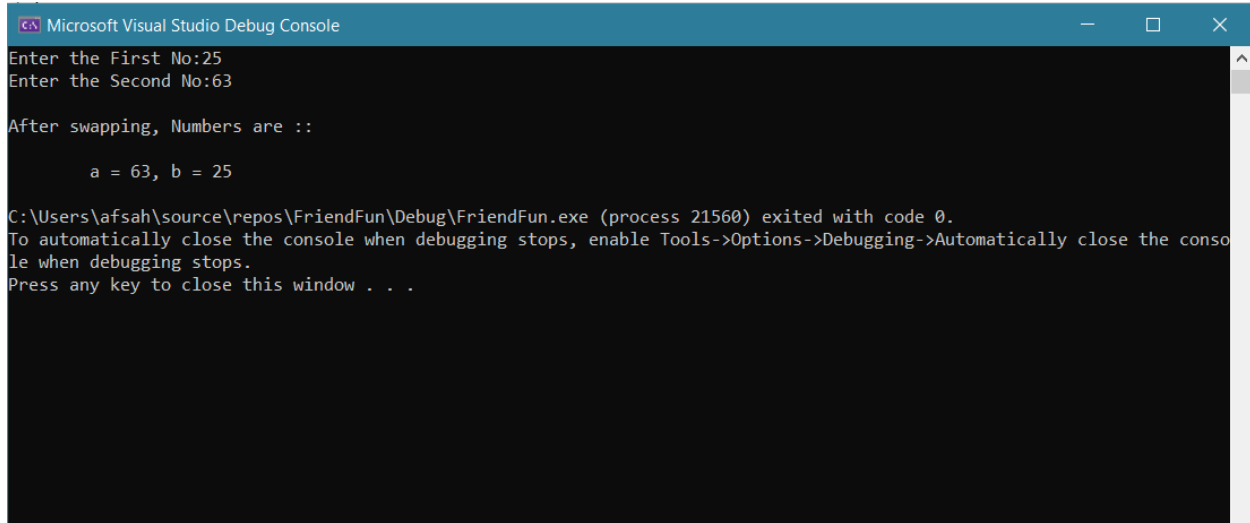
// test using overloaded subscript operator to create lvalue
s1[0] = 'H';
s1[6] = 'B';
cout << "\ns1 after s1[0] = 'H' and s1[6] = 'B' is: "
      << s1 << "\n\n";

// test subscript out of range with string member function "at"
//try
//{
    //cout << "Attempt to assign 'd' to s1.at( 30 ) yields:" <<
endl;
    // s1.at( 30 ) = 'd'; // ERROR: subscript out of range
//} // end try
//catch ( out_of_range &ex )
//{
    // cout << "An exception occurred: " << ex.what() << endl;
//} // end catch
} // end main
//
*****/
```

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**Task#01**

Write a C++ class that has 2 private variables that are used to store inputs from the user. Define a function outside of class that accesses these 2 private variables and swap them without using a third variable.



```
Microsoft Visual Studio Debug Console
Enter the First No:25
Enter the Second No:63

After swapping, Numbers are ::

    a = 63, b = 25

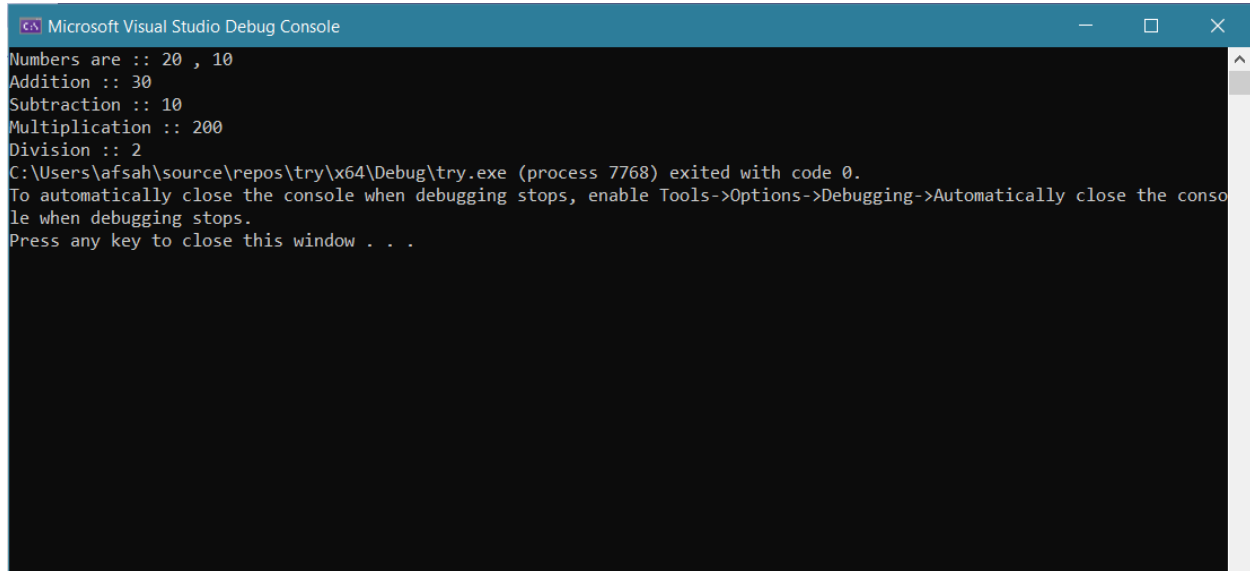
C:\Users\afsah\source\repos\FriendFun\Debug\FriendFun.exe (process 21560) exited with code 0.
To automatically close the console when debugging stops, enable Tools->Options->Debugging->Automatically close the console when debugging stops.
Press any key to close this window . . .
```

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**Task#02**

Write a C++ program that performs addition, subtraction, multiplication and division on two objects using operator overloading.

- a. Perform calculations on 2 different object inputs.
- b. Define constructors for variable initializations.
- c. Return object to overloaded functions.

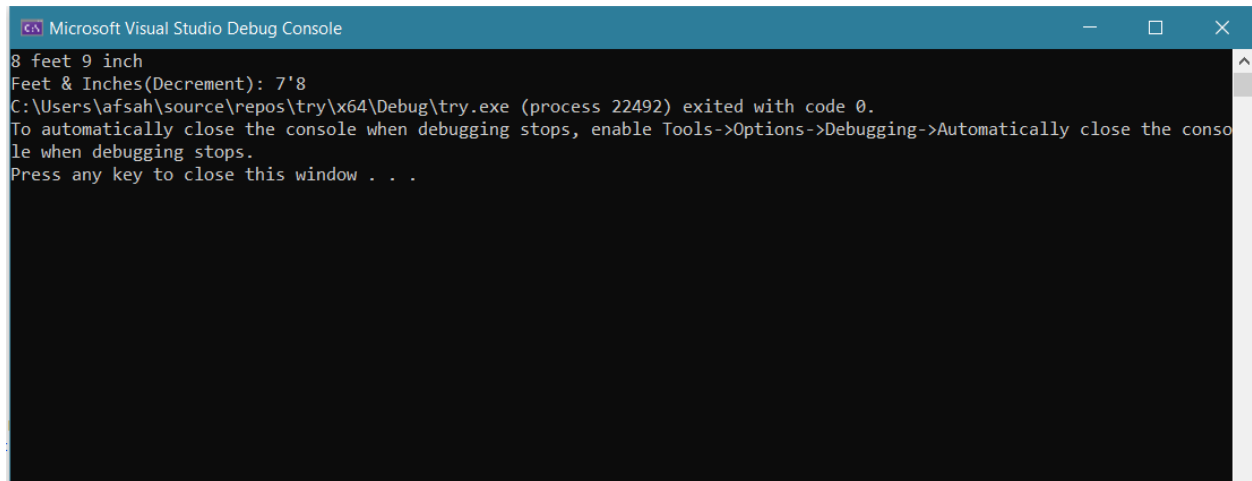
A screenshot of the Microsoft Visual Studio Debug Console window. The window has a title bar with the text "Microsoft Visual Studio Debug Console" and standard window controls (minimize, maximize, close). The console output is as follows:

```
Numbers are :: 20 , 10
Addition :: 30
Subtraction :: 10
Multiplication :: 200
Division :: 2
C:\Users\afsah\source\repos\try\x64\Debug\try.exe (process 7768) exited with code 0.
To automatically close the console when debugging stops, enable Tools->Options->Debugging->Automatically close the console when debugging stops.
Press any key to close this window . . .
```

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**Task#03**

Write a C++ program that takes size in feet and inches. Perform decrement of 1 in inputs and display result. Do it using unary operator overloading.



```
Microsoft Visual Studio Debug Console
8 feet 9 inch
Feet & Inches(Decrement): 7'8
C:\Users\afsah\source\repos\try\x64\Debug\try.exe (process 22492) exited with code 0.
To automatically close the console when debugging stops, enable Tools->Options->Debugging->Automatically close the console when debugging stops.
Press any key to close this window . . .
```