

Object Oriented Programming

Lab Report

Lab03



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Class	Object Oriented Programming CSC241 (BCE-4B)
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In Lab Tasks

5.1 Task 1:

Code the example given above and check the errors if you try to access the private data members in main() function.

Solution:

The code is given below,

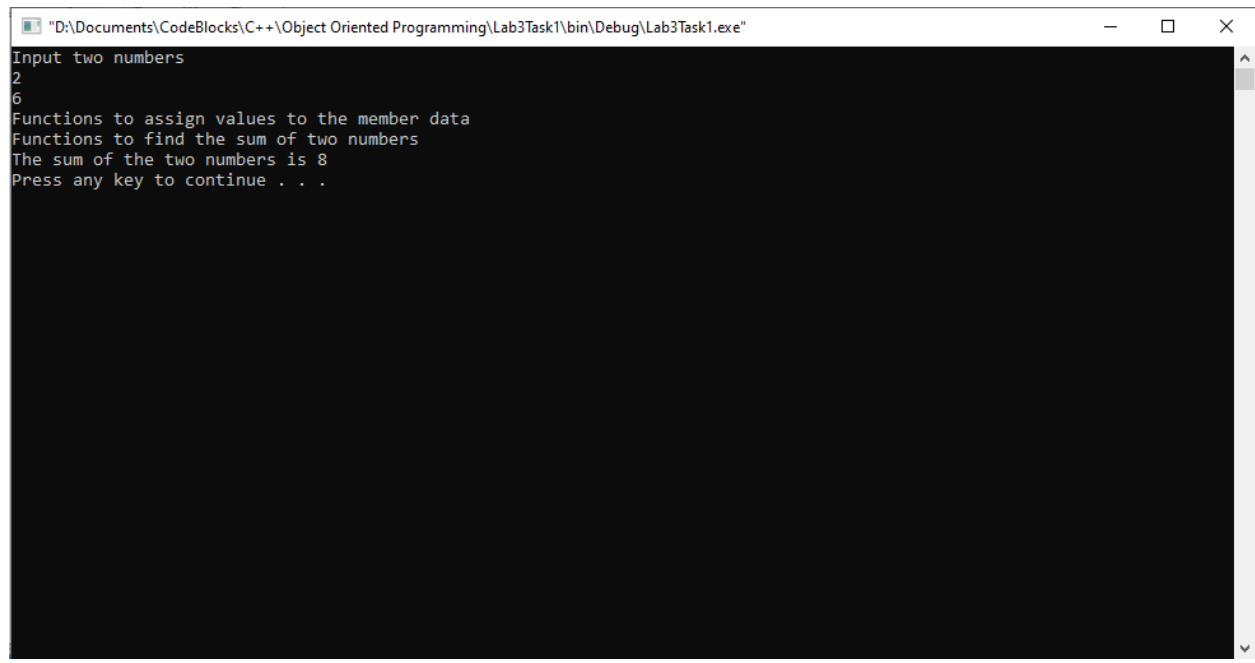
```
#include<iostream>
#include<cstdlib>

using namespace std;
class add //Specifies the class
{ private:
    int iNum1, iNum2, iNum3; //Member data
public:
    void input(int iVar1, int iVar2) //Member function
    {
        cout<<"Functions to assign values to the member data"<<endl;
        iNum1=iVar1;
        iNum2=iVar2;
    }
    void sum(void) //Member function
    {
        cout<<"Functions to find the sum of two numbers"<<endl;
        iNum3=iNum1+iNum2;
    }
    void disp(void) //Member function
    {
        cout<<"The sum of the two numbers is "<<iNum3<<endl;    }
};
//////////main function of the program//////////
main()
{
    add A1;
    int iX, iY;

    cout<<"Input two numbers"<<endl;
    cin>>iX;
    cin>>iY;

    A1.input(iX, iY);
    A1.sum();
    A1.disp();
    system("pause");
}
```

Console Output is shown below.

A screenshot of a Windows console window. The title bar at the top reads "D:\Documents\CodeBlocks\C++\Object Oriented Programming\Lab3Task1\bin\Debug\Lab3Task1.exe". The console has a black background with white text. The output is as follows:

```
Input two numbers
2
6
Functions to assign values to the member data
Functions to find the sum of two numbers
The sum of the two numbers is 8
Press any key to continue . . .
```

5.2 Task:2

Modify the above task by making the scope of public member functions as private. Create access functions in public scope to access private member functions from main().

Solution:

I am attaching my code below,

```
#include<iostream>
#include<cstdlib>

using namespace std;

class add //Specifies the class
{ private:    int iNum1, iNum2, iNum3; //Member data
public:      void input(int iVar1, int iVar2) //Member function
{
    cout<<"Functions to assign values to the member data"<<endl;    iVar1=iVar1;    iVar2=iVar2;
}
void sum(void) //Member function
{
    cout<<"Functions to find the sum of two numbers"<<endl;
    iNum3=iNum1+iNum2;
}
void disp(void) //Member function
{
    cout<<"The sum of the two numbers is "<<iNum3<<endl;    }

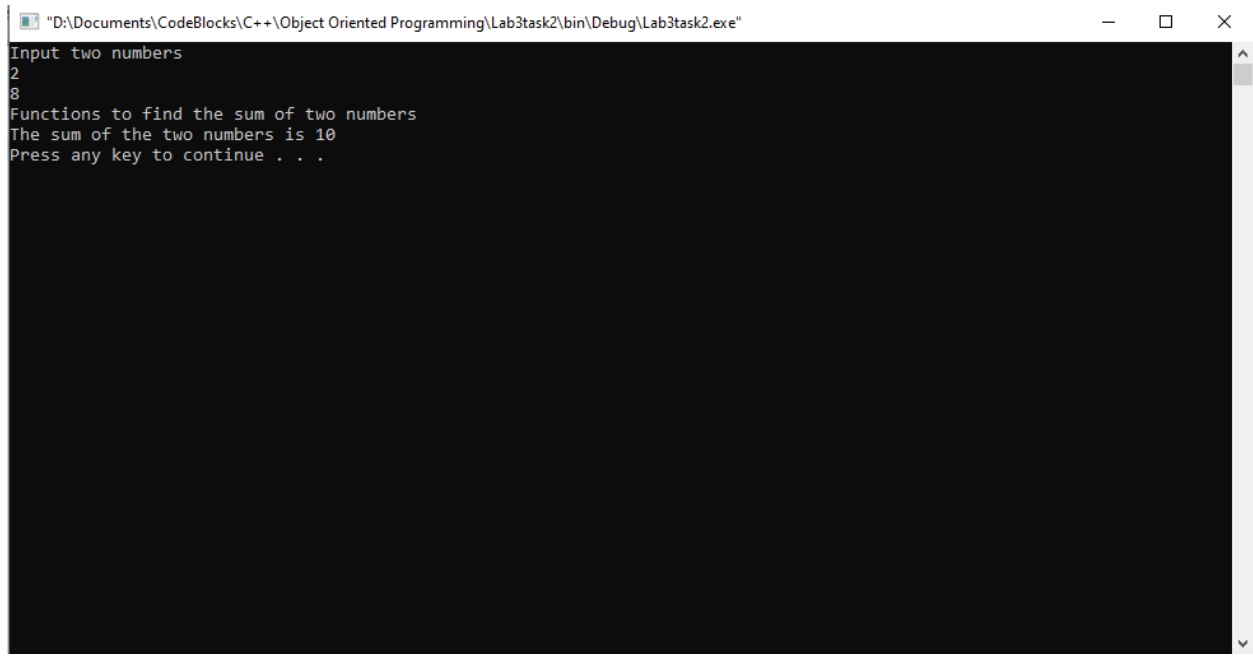
void access()
{
    int x;
    int y;
    int z;

    cout<<"Input two numbers"<<endl;
    cin>>x;
    cin>>y;

    iNum1=x;
    iNum2=y;
};

//////////main function of the program//////////
main()
{
    add A1;
    int iX, iY;
    A1.access();
    A1.sum();
    A1.disp();
    system("pause");
}
```

The result for this program is shown below,



A screenshot of a Windows command prompt window titled "D:\Documents\CodeBlocks\C++\Object Oriented Programming\Lab3task2\bin\Debug\Lab3task2.exe". The window has a black background with white text. The text displayed is as follows:

```
Input two numbers
2
8
Functions to find the sum of two numbers
The sum of the two numbers is 10
Press any key to continue . . .
```

The window includes standard Windows window controls (minimize, maximize, close) in the top right corner and a vertical scrollbar on the right side.

5.3 Task:3

Code the example given above and include a private constructor in the class. Create objects of this class. Test the code and write down how the constructor will be called or unable to be called?

Solution:

I am attaching my code below,

```
#include <iostream>

using namespace std;

class add //Specifies the class
{
    private:

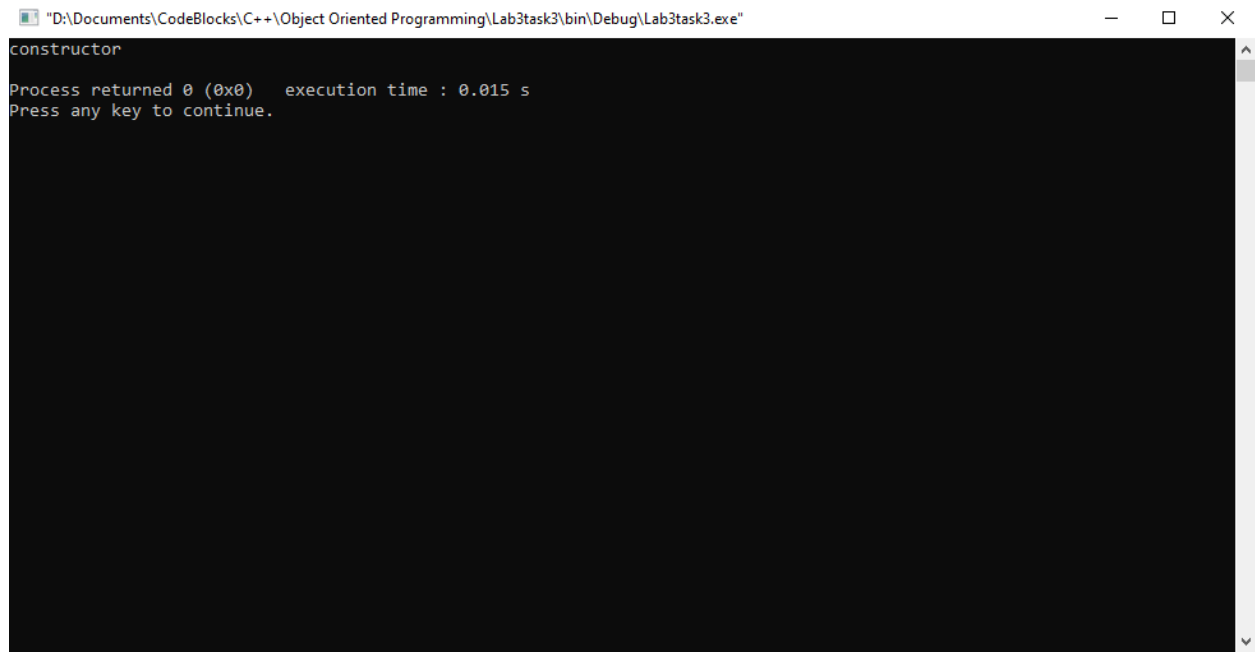
    public:
    add()
    {
        cout<<"constructor"<<endl;
    }

};

main()
{
    add obl;
}
```

The constructor will only be called when it is written in 'public', when written in 'private' it will not be accessible and will not run.

The result for this program is shown below,



The screenshot shows a Windows-style application window titled "D:\Documents\CodeBlocks\C++\Object Oriented Programming\Lab3task3\bin\Debug\Lab3task3.exe". The window contains a black console area with white text. The text displayed is: "constructor", "Process returned 0 (0x0) execution time : 0.015 s", and "Press any key to continue.". The window has standard minimize, maximize, and close buttons in the top right corner.

```
"D:\Documents\CodeBlocks\C++\Object Oriented Programming\Lab3task3\bin\Debug\Lab3task3.exe"  
constructor  
Process returned 0 (0x0) execution time : 0.015 s  
Press any key to continue.
```

POST LAB

6.1 Question 1:

Create a class of subtraction having two private data members. Create class methods to get data from users and for subtraction of data members. Use appropriate access modifiers for class methods.

Solution:

I am attaching my code below,

```
#include <iostream>
using namespace std;
class Subtraction
{
private:
    int first;
    int second;

public:
    void getdata()
    {
        cout<<"Enter the value of first integer?"<<endl;
        cin>>first;
        cout<<"Enter the value of second integer?"<<endl;
        cin>>second;
    }

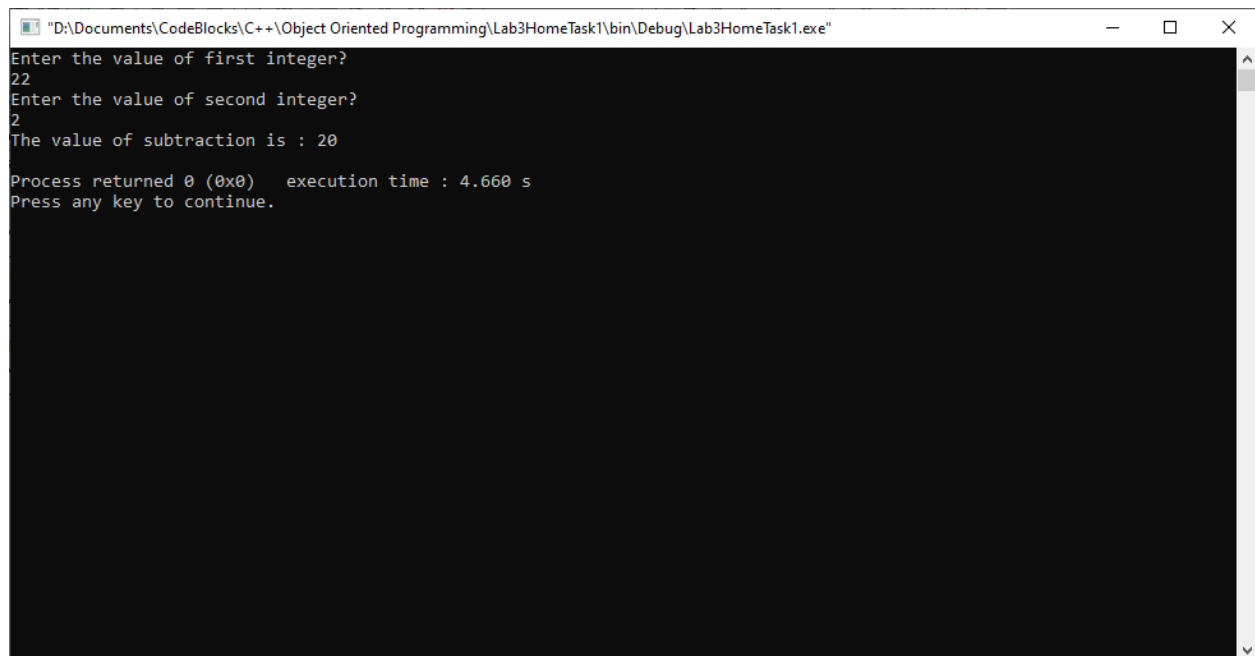
    void subtr()
    {
        cout<<"The value of subtraction is : "<<first-second<<endl;
    }

};

int main()
{
    Subtraction obj1;

    obj1.getdata();
    obj1.subtr();
}
```


The result for this program is shown below,



```
"D:\Documents\CodeBlocks\C++\Object Oriented Programming\Lab3HomeTask1\bin\Debug\Lab3HomeTask1.exe"
Enter the value of first integer?
22
Enter the value of second integer?
2
The value of subtraction is : 20

Process returned 0 (0x0)   execution time : 4.660 s
Press any key to continue.
```

_____THE END_____
