**Object Oriented Programming**

**Lab 3**

**Submitted To:**

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**In Lab:**

**Task 1:**

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

**Code:**

1 #include <iostream>

2

3 **using namespace std**;

4

5 **class** add //Specifies the class

6 {

7 **private**:

8 **int** iNum1, iNum2, iNum3; //Member data

9 **public**:

10 **void** input(**int** iVar1, **int** iVar2) //Member function

11 {

12 **cout**<<"Functions to assign values to the member data"<<**endl**;

13 iNum1=iVar1; iNum2=iVar2;

14 }

15 **void** sum(**void**) //Member function

16 {

17 **cout**<<"Functions to find the sum of two numbers"<<**endl**;

18 iNum3=iNum1+iNum2;

19 }

20 **void** disp(**void**) //Member function

21 {

22 **cout**<<"The sum of the two numbers is "<<iNum3<<**endl**;

23 }

24 };

25

26 **int** main()

27 {

28 add A1;

29 **int** iX, iY;

30 **cout**<<"Input two numbers"<<**endl**;

31 **cin**>>iX;

32 **cin**>>iY;

33 iNum1=iX;

34 iNum2=iY;

35

36 A1.input(iX, iY);

37 A1.sum();

38 A1.disp();

39 //system("pause");

40

41

42 **return** 0;

43 }

**Output:**



**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( ).**

**Code:**

1 #include <iostream>

2

3 **using namespace std**;

4

5 **class** add //Specifies the class

6 {

7 **private**:

8 **int** iNum1, iNum2, iNum3; //Member data

9

10 **void** sum(**void**) //Member function

11 {

12 **cout**<<"Functions to find the sum of two numbers"<<**endl**;

13 iNum3=iNum1+iNum2;

14 }

15 **void** disp(**void**) //Member function

16 {

17 **cout**<<"The sum of the two numbers is "<<iNum3<<**endl**;

18 }

19 **public**:

20 **void** input(**int** iVar1, **int** iVar2) //Member function

21 {

22 **cout**<<"Functions to assign values to the member data"<<**endl**;

23 iNum1=iVar1; iNum2=iVar2;

24 }

25 **void** sum\_inp(**void**) //Member function

26 {

27 sum();

28 }

29 **void** disp\_inp(**void**) //Member function

30 {

31 disp();

32 }

33 };

34

35 **int** main()

36 {

37 add A1;

38 **int** iX, iY;

39 **cout**<<"Input two numbers"<<**endl**;

40 **cin**>>iX;

41 **cin**>>iY;

42 A1.input(iX, iY);

43 A1.sum\_inp();

44 A1.disp\_inp();

45 //system("pause");

46

47

48 **return** 0;

49 }

**Output:**

****

**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?**

**Code:**

1 #include <iostream>

2

3 **using namespace std**;

4

5 **class** add //Specifies the class

6 {

7 **private**:

8 **int** iNum1, iNum2, iNum3; //Member data

9

10 add(**int** a=0, **int** b=0)

11 {

12 iNum1=a;

13 iNum2=b;

14 }

15 **public**:

16 **void** input(**int** iVar1, **int** iVar2) //Member function

17 {

18 **cout**<<"Functions to assign values to the member data"<<**endl**;

19 iNum1=iVar1; iNum2=iVar2;

20 }

21 **void** sum(**void**) //Member function

22 {

23 **cout**<<"Functions to find the sum of two numbers"<<**endl**;

24 iNum3=iNum1+iNum2;

25 }

26 **void** disp(**void**) //Member function

27 {

28 **cout**<<"The sum of the two numbers is "<<iNum3<<**endl**;

29 }

30 };

31

32 **int** main()

33 {

34 add A1;

35 **int** iX, iY;

36 **cout**<<"Input two numbers"<<**endl**;

37 **cin**>>iX;

38 **cin**>>iY;

39 A1.input(iX, iY);

40 A1.sum();

41 A1.disp();

42 //system("pause");

43

44

45 **return** 0;

46 }

**Output:**

****

**Post Lab:**

**Task 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.**

**Code:**

1 #include <iostream>

2

3 **using namespace std**;

4

5 **class** marks

6 {

7 **float** marks1, marks2, sub;

8

9 **public**:

10

11 **void** get\_marks();

12 **void** set\_marks(**float** a, **float** b);

13 **float** sub\_marks();

14

15 };

16

17 **void** marks:: get\_marks()

18 {

19 **cout** << "Enter marks 1 and 2: "<< **endl**;

20 **cin** >> marks1 >> marks2;

21 }

22 **void** marks:: set\_marks(**float** a, **float** b){ marks1=a; marks2=b;}

23

24 **float** marks:: sub\_marks(){ sub=marks1-marks2; **return** sub;}

25

26 **int** main()

27 {

28 marks m1, m2;

29

30 **cout** << "Marks Stored!! " << **endl**;

31 m1.set\_marks(45.5,56.4);

32

33 m2.get\_marks();

34 **cout** << "Marks Stored!! " << **endl**;

35

36 **cout** << "Sum 1: " << **endl**;

37 **cout** << m1.sub\_marks() << **endl**;

38

39 **cout** << "Sum 2: " << **endl**;

40 **cout** << m2.sub\_marks() << **endl**;

41

42 **return** 0;

43 }

44

**Output:**

****

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**THE END**