OOP with C++

Lab work - 06

Lab Date - 22th Feb 2021

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Semester - 6th

GitHub - https://github.com/rishabh-live/oop-w-cpp-4-sem/tree/main/Labs

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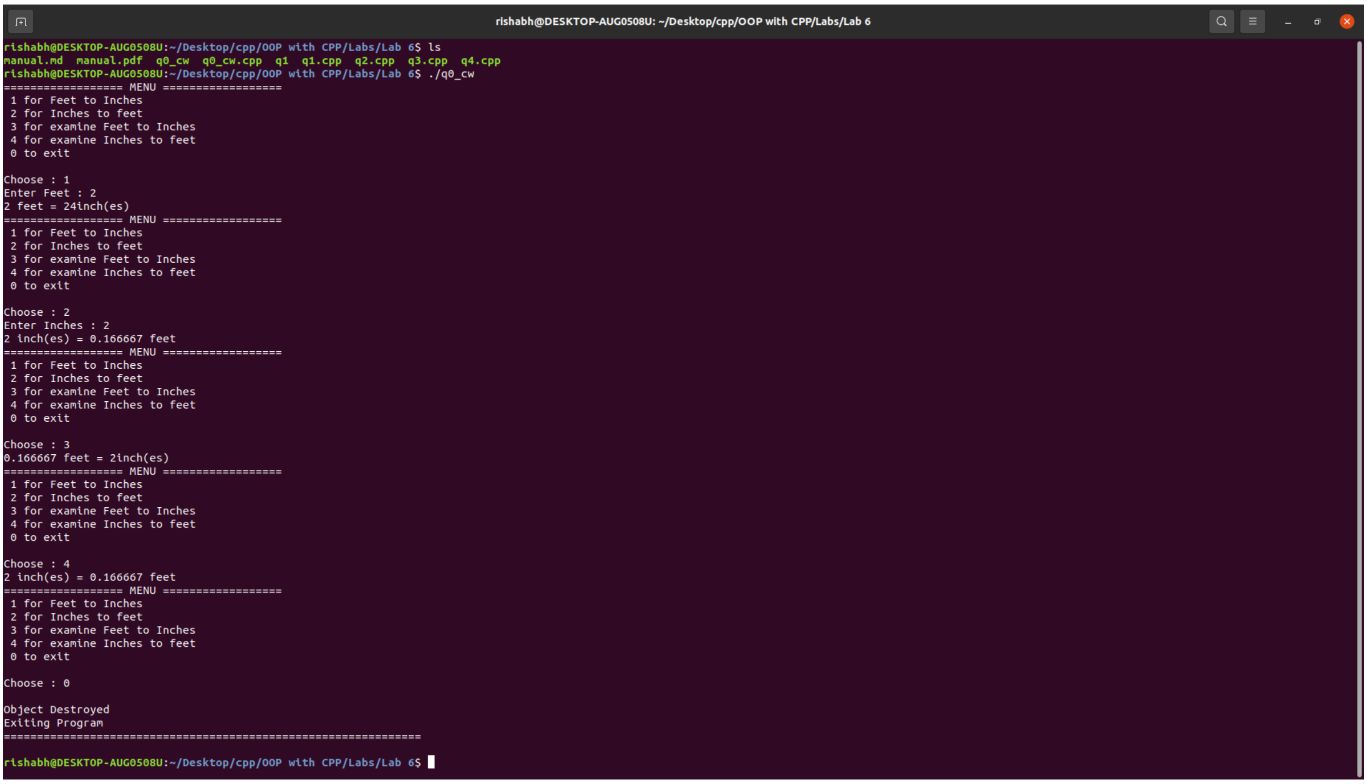
> 1) Create a class called distance that has a separate integer member data for feet and inches. One constructor should initialize this data to zero and another should initialize it to fixed values. A member function should display it in feet inches format.

Source Code

```
#include <iostream>

using namespace std;


class theDistance{
    private:
        float feet, inches;
        int option;

    public:

        theDistance(){
            feet = 0;
            inches = 0;
        }
        ~theDistance(){
            cout << "Object Destroyed \nExiting Program
\n===============================================================\n" <<
endl;
        }

        void convertToFeet(){
            cout << "Enter Inches : ";
            cin >> inches;
            feet = inches/12;
            cout << inches << " inch(es) = " << feet << " feet";
        }
        void convertToFeet(float inpuInches){
            inpuInches =  inches;
            feet = inches/12;
            cout << inches << " inch(es) = " << feet << " feet";
        }


        void convertToInch(){
            cout << "Enter Feet : ";
            cin >> feet;
            inches = feet * 12;
            cout << feet << " feet = " << inches << "inch(es)";
        }
        void convertToInch(float inpuInches){
            inpuInches =  feet;
            inches = feet * 12;
            cout << feet << " feet = " << inches << "inch(es)";
        }
        void menu(){
            cout << "================== MENU ==================";
            cout << "\n 1 for Feet to Inches \n 2 for Inches to feet \n 3 for examine Feet to Inches \n 4 for examine Inches to feet \n 0 to exit \n\n";
        }

        int ask(){
            cout << "Choose : ";
            cin >> option;
            return option;
        }



};


int main(){

    theDistance obj;
    int x = 99;
    while(x != 0){

        obj.menu();
        x = obj.ask();

        if(x == 1){
            obj.convertToInch();
        }

        if(x == 2){
            obj.convertToFeet();
        }

        if(x == 3){
            obj.convertToInch(1);
        }

        if(x == 4){
            obj.convertToFeet(1);
        }

        cout << "\n";


    }
    return 0;

}
```

Output



```
rishabh@DESKTOP-AUG0508U:~/Desktop/cpp/OOP with CPP/Labs/Lab 6$ ls
manual.md  manual.pdf  q0_cw  q0_cw.cpp  q1  q1.cpp  q2.cpp  q3.cpp  q4.cpp
rishabh@DESKTOP-AUG0508U:~/Desktop/cpp/OOP with CPP/Labs/Lab 6$ ./q0_cw
================== MENU ==================
 1 for Feet to Inches
 2 for Inches to feet
 3 for examine Feet to Inches
 4 for examine Inches to feet
 0 to exit

Choose : 1
Enter Feet : 2
2 feet = 24inch(es)
================== MENU ==================
 1 for Feet to Inches
 2 for Inches to feet
 3 for examine Feet to Inches
 4 for examine Inches to feet
 0 to exit

Choose : 2
Enter Inches : 2
2 inch(es) = 0.166667 feet
================== MENU ==================
 1 for Feet to Inches
 2 for Inches to feet
 3 for examine Feet to Inches
 4 for examine Inches to feet
 0 to exit

Choose : 3
0.166667 feet = 2inch(es)
================== MENU ==================
 1 for Feet to Inches
 2 for Inches to feet
 3 for examine Feet to Inches
 4 for examine Inches to feet
 0 to exit

Choose : 4
2 inch(es) = 0.166667 feet
================== MENU ==================
 1 for Feet to Inches
 2 for Inches to feet
 3 for examine Feet to Inches
 4 for examine Inches to feet
 0 to exit

Choose : 0

Object Destroyed
Exiting Program
===============================================================

rishabh@DESKTOP-AUG0508U:~/Desktop/cpp/OOP with CPP/Labs/Lab 6$
```

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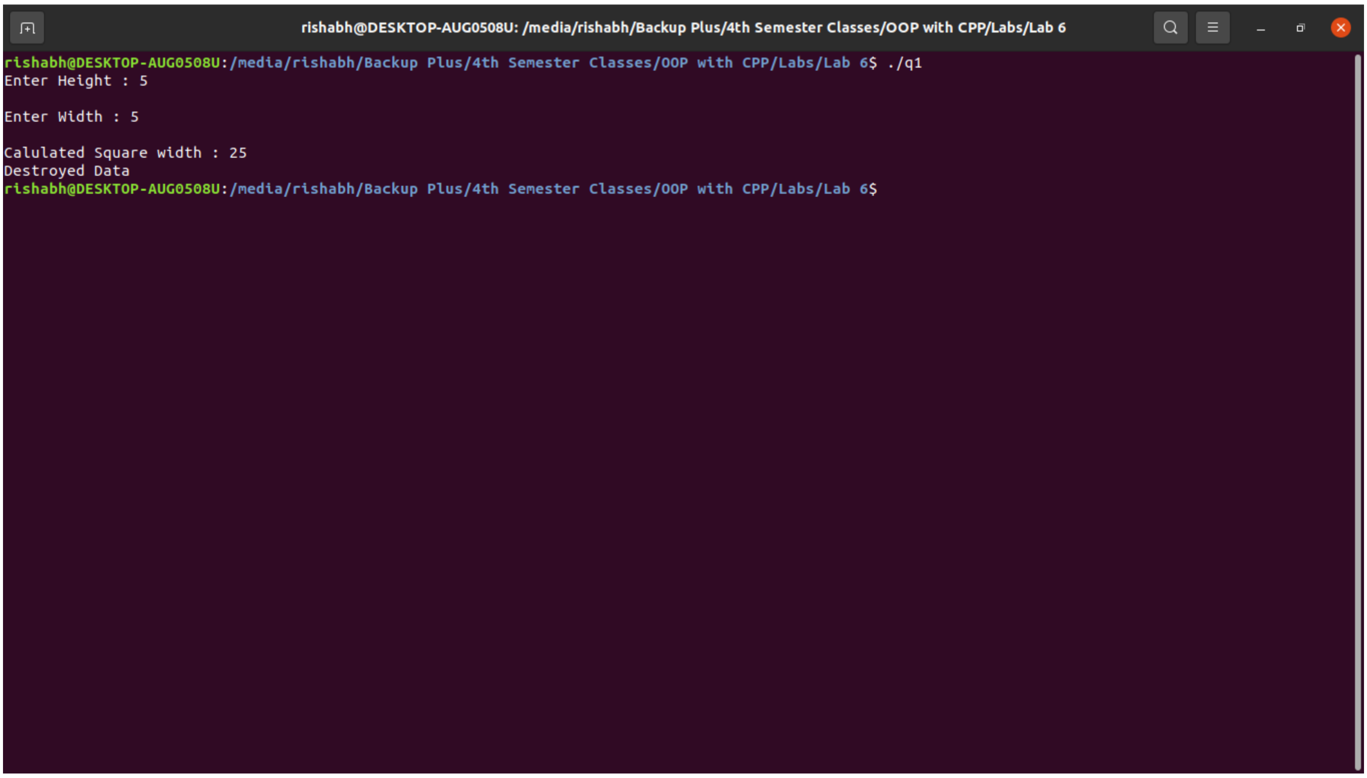
2) Write a program to use constructors, destructor and function overloading

Source Code

```
#include <bits/stdc++.h>
using namespace std;
// use of copy constructor
class myclass
{
    int a, b;

public:
    myclass(int m, int n)
    {
        a = m;
        b = n;
        cout << "Inside Parametarized Constructor\n";
        cout << "a = " << a << " b = " << b;
    }
    myclass(myclass& i)
    {
        a = i.a;
        b = i.b;
        cout << "\nInside copy Constructor, values are copied\n";
        cout << "a = " << a << " b = " << b;
    }
};
int main()
{
    myclass c1(10, 20), c2(c1);
    return 0;
}
```

Output



rishabh@DESKTOP-AUG0508U: /media/rishabh/Backup Plus/4th Semester Classes/OOP with CPP/Labs/Lab 6

```
rishabh@DESKTOP-AUG0508U:/media/rishabh/Backup Plus/4th Semester Classes/OOP with CPP/Labs/Lab 6$ ./q1
Enter Height : 5

Enter Width : 5

Calulated Square width : 25
Destroyed Data
rishabh@DESKTOP-AUG0508U:/media/rishabh/Backup Plus/4th Semester Classes/OOP with CPP/Labs/Lab 6$
```

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3) Write a C++ program(display a complex number in the form of a+ib, where 'a' is the real part and 'b' is the imaginary part.) to get the default value by default constructor, user input value by the parameterized constructor and to get the value from other existing object using copy constructor.

Source Code

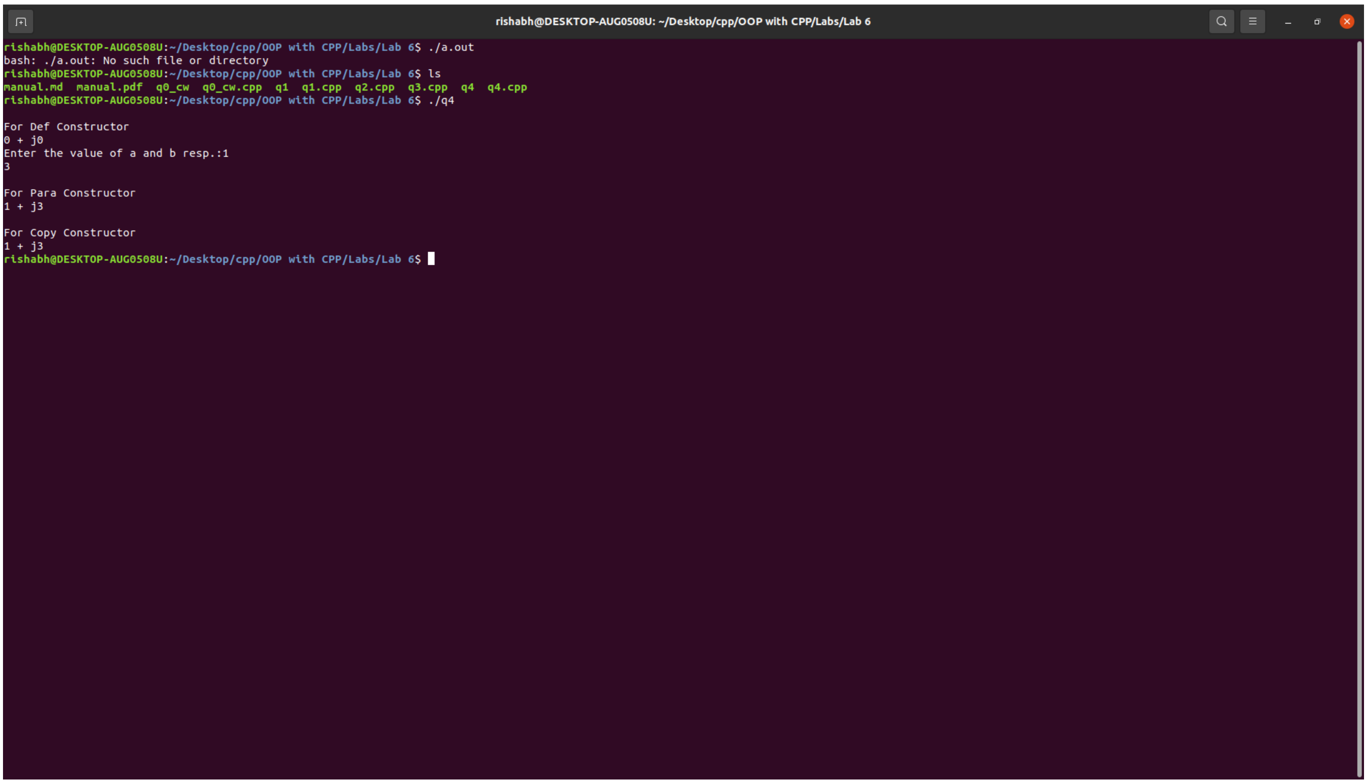
```cpp
#include <bits/stdc++.h>
using namespace std;
class mycomplex
{
    float a, b;

public:
    mycomplex()
    {
        a = 0;
        b = 0;
    } // def constructor
    mycomplex(float c, float d) // para constructor
    {
        a = c;
        b = d;
    }
    mycomplex(mycomplex& c) // copy constructor
    {
        a = c.a;
        b = c.b;
    }
    void display(void) // display member function
    {
        cout << a << " + "
             << "j" << b << "\n";
    }
    ~mycomplex(){}// destructor

};
int main()
{

    float c,d;
    mycomplex c1;
    cout << "\nFor Def Constructor\n";
    c1.display();
    cout << "Enter the value of a and b resp.:";
    cin >> c >> d;
    mycomplex c2(c, d);
    cout << "\nFor Para Constructor\n";
    c2.display();
    mycomplex c3(c2);
    cout << "\nFor Copy Constructor\n";
    c3.display();
    return 0;
}
```

Output


rishabh@DESKTOP-AUG0508U: ~/Desktop/cpp/OOP with CPP/Labs/Lab 6

```
rishabh@DESKTOP-AUG0508U:~/Desktop/cpp/OOP with CPP/Labs/Lab 6$ ./a.out
bash: ./a.out: No such file or directory
rishabh@DESKTOP-AUG0508U:~/Desktop/cpp/OOP with CPP/Labs/Lab 6$ ls
manual.md  manual.pdf  q0_cw  q0_cw.cpp  q1  q1.cpp  q2.cpp  q3.cpp  q4  q4.cpp
rishabh@DESKTOP-AUG0508U:~/Desktop/cpp/OOP with CPP/Labs/Lab 6$ ./q4

For Def Constructor
0 + j0
Enter the value of a and b resp.:1
3

For Para Constructor
1 + j3

For Copy Constructor
1 + j3
rishabh@DESKTOP-AUG0508U:~/Desktop/cpp/OOP with CPP/Labs/Lab 6$
```