

OOP with C++

Lab work - 09

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Semester - 4th

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

1) Write a program to implement multilevel inheritance.

Source Code

```
// Multilevel Inheritance
#include <bits/stdc++.h>

using namespace std;
class student {
protected:
    int roll_no;
    void put_no(void) {
        cout << "Roll Number = " << roll_no << "\n";
    }
public:
    void get_no(int a) {
        roll_no = a;
    }
};

class test: public student // protected becomes protected and public
becomes public
{
protected: float sub1;
float sub2;
void put_marks(void) {
    cout << "Marks in Sub1 = " << sub1 << "\n";
    cout << "Marks in Sub2 = " << sub2 << "\n";
}
public: void get_marks(float a, float b) {
    sub1 = a;
    sub2 = b;
}
};

class result: public test {
```

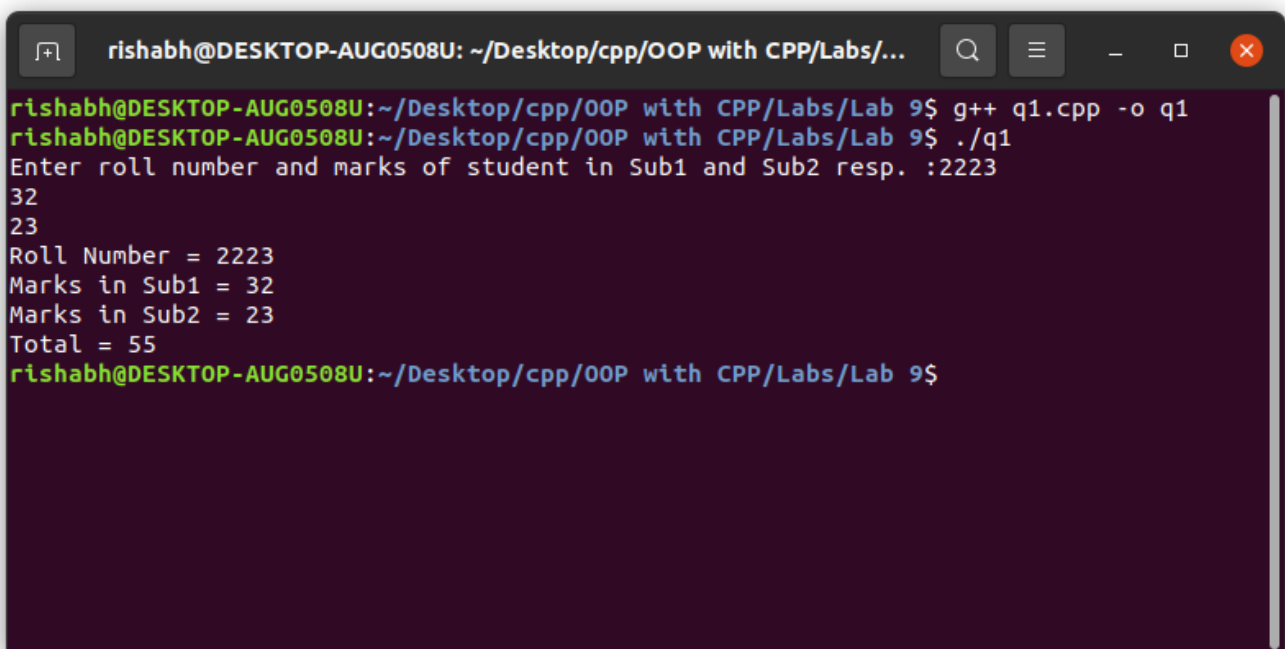
```

float total;
public:
    void display(void) {
        total = sub1 + sub2;
        put_no();
        put_marks();
        cout << "Total = " << total << "\n";
    }
};

int main() {
    int r;
    float e, d;
    cout << "Enter roll number and marks of student in Sub1 and Sub2 resp.
: ";
    cin >> r >> e >> d;
    result student1;
    student1.get_no(r);
    student1.get_marks(e, d);
    student1.display();
    return 0;
}

```

Output



```

rishabh@DESKTOP-AUG0508U: ~/Desktop/cpp/OOP with CPP/Labs/...
rishabh@DESKTOP-AUG0508U:~/Desktop/cpp/OOP with CPP/Labs/Lab 9$ g++ q1.cpp -o q1
rishabh@DESKTOP-AUG0508U:~/Desktop/cpp/OOP with CPP/Labs/Lab 9$ ./q1
Enter roll number and marks of student in Sub1 and Sub2 resp. :2223
32
23
Roll Number = 2223
Marks in Sub1 = 32
Marks in Sub2 = 23
Total = 55
rishabh@DESKTOP-AUG0508U:~/Desktop/cpp/OOP with CPP/Labs/Lab 9$

```

2) Write a program to implement multiple inheritance.

Source Code

```

// Multiple inheritance
#include <bits/stdc++.h>

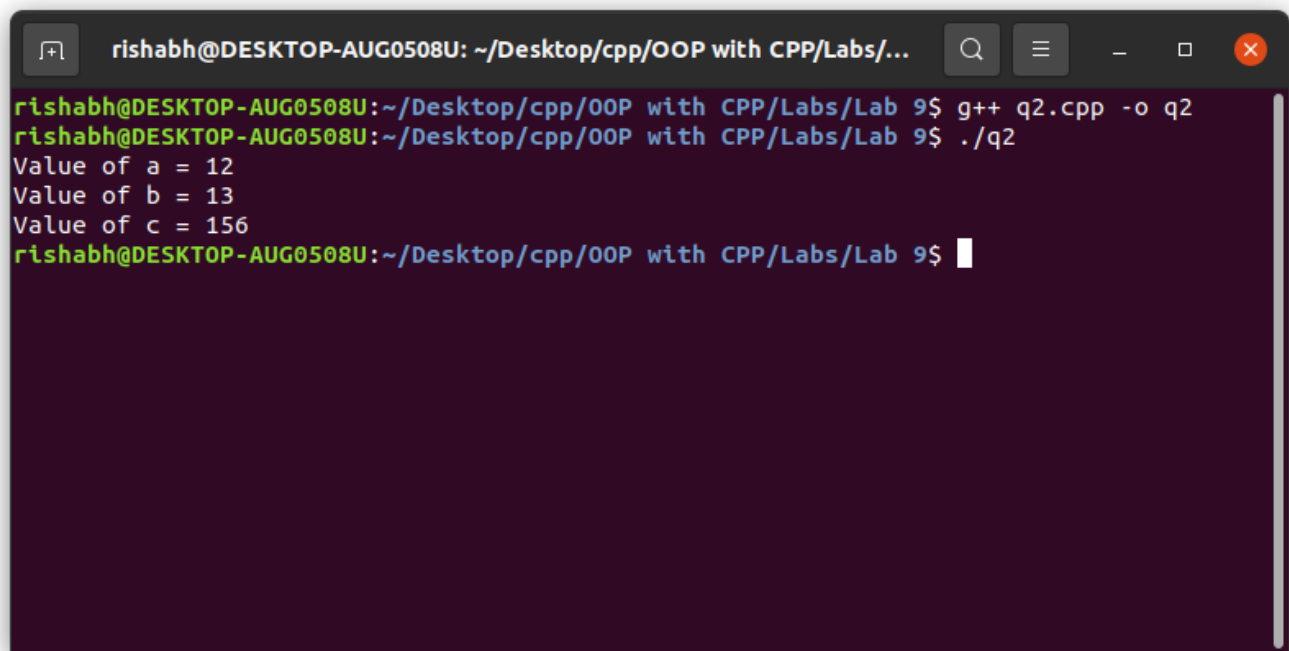
```

```

using namespace std;
class base_1 {
protected:
    int a;
public:
    void getadata(int);
};
class base_2 {
protected:
    int b;
public:
    void getadata1(int);
};
class der: public base_1, public base_2 {
    int c;
    int mul(void);
public:
    void display(void);
};
void base_1::getadata(int a1) {
    a = a1;
}
void base_2::getadata1(int b1) {
    b = b1;
}
int der::mul(void) {
    c = a * b;
    return (c);
}
void der::display(void) {
    cout << "Value of a = " << a << "\n";
    cout << "Value of b = " << b << "\n";
    cout << "Value of c = " << mul() << "\n";
}
int main() {
    der obj;
    obj.getadata(12);
    obj.getadata1(13);
    obj.display();
    return 0;
}

```

Output



```
rishabh@DESKTOP-AUG0508U: ~/Desktop/cpp/OOP with CPP/Labs/...  
rishabh@DESKTOP-AUG0508U:~/Desktop/cpp/OOP with CPP/Labs/Lab 9$ g++ q2.cpp -o q2  
rishabh@DESKTOP-AUG0508U:~/Desktop/cpp/OOP with CPP/Labs/Lab 9$ ./q2  
Value of a = 12  
Value of b = 13  
Value of c = 156  
rishabh@DESKTOP-AUG0508U:~/Desktop/cpp/OOP with CPP/Labs/Lab 9$
```

The image shows a terminal window with a dark background. The title bar at the top reads "rishabh@DESKTOP-AUG0508U: ~/Desktop/cpp/OOP with CPP/Labs/...". The terminal content shows the user compiling a C++ file "q2.cpp" into an executable "q2" using "g++". After running the executable with "./q2", it outputs the values of variables a, b, and c as 12, 13, and 156 respectively. The prompt "rishabh@DESKTOP-AUG0508U:~/Desktop/cpp/OOP with CPP/Labs/Lab 9\$" is visible at the end of the last line.