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### Classes, Public and Private access modifiers in C++

#### Why use classes instead of structures

Classes and structures are somewhat the same but still, they have some differences. For example, we cannot hide data in structures which means that everything is public and can be accessed easily which is a major drawback of the structure because structures cannot be used where data security is a major concern. Another drawback of structures is that we cannot add functions in it.

#### Classes in C++

Classes are user-defined data-types and are a template for creating objects. Classes consist of variables and functions which are also called class members.

#### Public Access Modifier in C++

All the variables and functions declared under public access modifier will be available for everyone. They can be accessed both inside and outside the class. Dot (.) operator is used in the program to access public data members directly.

#### Private Access Modifier in C++

All the variables and functions declared under a private access modifier can only be used inside the class. They are not permissible to be used by any object or function outside the class.

**Output:**

//Valid syntax or idea about class.

#include <iostream>

using namespace std;

class student

{

private:

    int a, b, c;

public:

    int d, e;

    void setdata(int a1, int b1, int c1); //Prototype or declaration

    void getdata()

    {

        cout << "The Value at a is: " << a << endl;

        cout << "The Value at b is: " << b << endl;

        cout << "The Value at c is: " << c << endl;

        cout << "The Value at d is: " << d << endl;

        cout << "The Value at e is: " << e << endl;

    }

};

void student :: setdata(int a1, int b1, int c1)

{

    a = a1;

    b = b1;

    c = c1;

}

main()

{  student amir;

    // amir.a=10 This will throws an error as a is in private class

    amir.d=17;

    amir.e=36;

    amir.setdata(3,4,7);

    amir.getdata();

    return 0;

}

**Output:**

The Value at a is: 3

The Value at b is: 4

The Value at c is: 7

The Value at d is: 17

The Value at e is: 36

**Code:**

// programm 2 for class

#include <iostream>

using namespace std;

class room

{

public:

    double l, b, h;

    double area\_of\_room()

    {

        return l \* b;

    }

    double volume\_of\_room()

    {

        return l \* b \* h;

    }

};

int main()

{

    room r1;

    cout<<"Enter the Length of room: "<<endl;

    cin>>r1.l;

    cout<<"Enter the breadth of room: "<<endl;

    cin>>r1.b;

    cout<<"Enter the height of room: "<<endl;

    cin>>r1.h;

    // Claculation and displaying the values

    cout<<"The area of room is: "<<r1.area\_of\_room()<<endl;

    cout<<"The volume of room is: "<<r1.volume\_of\_room()<<endl;

    return 0;

}

**Output:**

Enter the Length of room:

2

Enter the breadth of room:

2

Enter the height of room:

4

The area of room is: 4

The volume of room is: 16