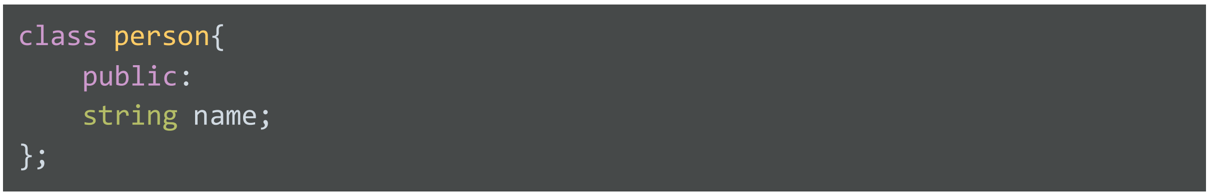
Access Specifiers

- Access Specifiers in a class are used to assign access to the class members.
- It sets some restrictions on the class members from accessing the outside functions directly.
- Access specifiers have a vital role in securing data from unauthorized access.
- It allows us to determine which class members are accessible to other classes andfunctions and which are not.

Three types of access modifiers available in C++:

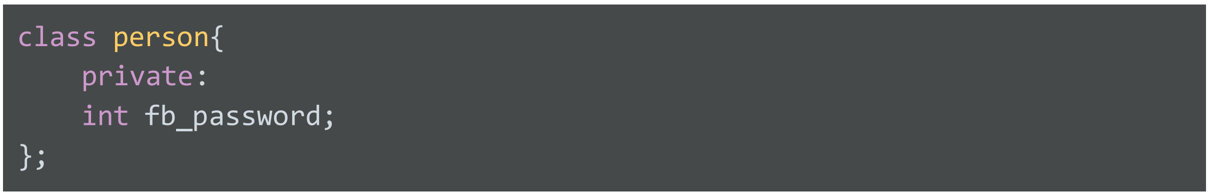
Public Private Protected

Public: All the class members with a public modifier can be accessed fromanywhere (inside and outside the class).



```
class person{
    public:
    string name;
};
```

Private: All the class members with a private modifier can only be accessed bythe member function inside the class.



```
class person{
    private:
    int fb_password;
};
```

Protected: The access level of a protected modifier is within the class and outside the class through child class (or subclass). If you do not make the childclass, it cannot be accessed outside the class.

```
class person{
    protected:
    string assets;
};
```

By default, in C++, all class members are private if you don't specify an access specifier.

```
class person{
    int name; //by default, it is a private data member
};
```

```
class smartphone{
    //Data members
    string model;  // by default private

    public:
    int year_of_manufacture; // public data member

    protected:
    string company_name;  // protected data member

    private:
    int password  // private data member

    //methods
    private:
    void unlock_lockscreen(){
        //private method
    }

    public:
    void call(){
        //public method
    }

    protected:
    void about_phone(){
```

Example using smartphone class:-

```
        //protected method
    }
};
```

Scope Table:-

	Inside class	Child (or sub-class)	Outside class
Public	✓	✓	✓
Protected	✓	✓	✗
Private	✓	✗	✗