# Types of Class Member Functions in C++

We already know what member functions are, what they do, how to define member function and how to call them using class objects. Now lets learn about some special member functions which can be defined in C++ classes. Following are the different types of Member functions:

1. Simple functions

2. Static functions

3. Const functions

4. Inline functions

5. Friend functions

## Simple Member functions in C++

These are the basic member function, which dont have any special keyword like static etc as prefix. All the general member functions, which are of below given form, are termed as simple and basic member functions.

```
return_type functionName(parameter_list)
{
    function body;
}
```

## Static Member functions in C++

Static is something that holds its position. Static is a keyword which can be used with data members as well as the member functions. We will discuss this in details later. As of now we will discuss its usage with member functions only.

A function is made static by using `static` keyword with function name. These functions work for the class as whole rather than for a particular object of a class.

It can be called using the object and the direct member access `.` operator. But, its more typical to call a static member function by itself, using class name and scope resolution `::` operator.

For example:

```
class X

{

    public:

    static void f()

    {

        // statement

    }

};



int main()

{

    X::f();    // calling member function directly with class name

}
```

These functions cannot access ordinary data members and member functions, but only `static` data members and `static` member functions can be called inside them.

It doesn't have any "this" keyword which is the reason it cannot access ordinary members. We will study about "this" keyword later.

# Const Member functions in C++

Const keyword makes variables constant, that means once defined, there values can't be changed.

When used with member function, such member functions can never modify the object or its related data members.

```
// basic syntax of const Member Function


void fun() const

{

    // statement

}
```

We will get more details in next tutorial about constant in c++

# Inline functions in C++

All the member functions defined inside the class definition are by default declared as Inline.Check Inline Function Document

# Friend functions in C++

Friend functions are actually not class member function. Friend functions are made to give **private** access to non-class functions. You can declare a global function as friend, or a member function of other class as friend.

For example:

```cpp
class WithFriend {

    int i;

    public:

    friend void fun(); // global function as friend

};

void fun()

{

    WithFriend wf;

    wf.i=10;   // access to private data member

    cout << wf.i;

}

int main()

{

    fun(); //Can be called directly

}
```

Hence, friend functions can access private data members by creating object of the class. Similarly we can also make function of some other class as friend, or we can also make an entire class as **friend class**.