

A job ready bootcamp in C++, DSA and IOT

Friend function



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Agenda

① Friend function

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Friend Function

- Friend function is not a member of a class to which it is a friend
- Function which is friend to a class can access any member of the class
(private, protected or public)

Making a function friend to a class

- Function needs to be declared with **friend** keyword in the class to which we want to make it a friend.
- Friend function is defined outside the class without membership label, as it is not a member function
- Remember friend function can be a member to another class, so membership label is required while defining outside all the classes.

- You can declare friend function without bothering access specifier because it is not a member, so no impact of access specifier on it.
- A function which is a friend to some class can be
 - a non member function, or
 - a member of some class

- if friend function is an absolute non member function then you can invoke it like any other function

functionName();

- if friend function is a member to some class, then you can invoke it using object of the class

ObjectName.functionName();

- Member function can access properties of current object directly, but friend function needs an object to access its properties or methods

- A function can be a member to zero or one class and friend to zero or many classes

Defining friend operator

```
friend Complex operator+ (Complex,Complex);  
friend Complex operator- (Complex)
```

Difference between defining operator as a member and a friend

Jab operator ko as a member banate ho , tab jitne arguments dete ho, usse exactly ek jyada argument pass karna padega agar friend banoge .

Kyunki jo kabhi caller object tha use bhi pass karna padega

Benefits of Friend

- Function can be a friend to multiple classes, which makes it possible to access private members of multiple classes in the same functionality.

- With the friend operator it is possible to overload a binary operator in which left operand is not an object.
- Various operators can only be defined using friend