Friend Function

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Agenda

➢ **Friend Function**

➢ **Making function friend**

➢ **Defining Friend operator**

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Friend Function

- **friend** is a keyword

- **Friend Function is not a member function of a class to which it is a friend.**

- **Function which is friend to a class can access any member of the class (public, private and protected)**

Making a Function Friend to a class

- Function needs to be declared with <mark>friend</mark> 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 class.

- 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 same class can be

  - a non member function, or

  - a member of same 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 same class, then you can invoke it using object of the class.**

    - **Object.FunctionName();**

- **Member function can access properties of current object directly, But <mark>friend</mark> function needs an object to access its properties and method.**

- **A function can be a member to Zero or one class and friend to Zero or many classes.**

Defining Friend operator

```
class Item
{
    private:
        int a,b;
        friend Item operator+(int,Item);
};

Item operator(int x,
Item i1)
{
    Item temp;
    temp.a = i1.a+x;
    temp.b = i1.b;
    return temp;
}
```

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 operator can only be define using friend.