

Inheritance in C Plus Plus

Module 05 - Hierarchical Inheritance in C Plus Plus

Hierarchical Inheritance

In hierarchical inheritance, multiple derived classes inherit from a single base class.

Syntax:

```
class Base {  
    // Base class members  
};  
  
class Derived1 : public Base {  
    // Derived1 class members  
};  
  
class Derived2 : public Base {  
    // Derived2 class members  
};
```

Solved Example:

```
#include <iostream>  
using namespace std;  
  
class Animal {  
public:  
    void eat() {  
        cout << "I can eat!" << endl;  
    }  
};  
  
class Dog : public Animal {  
public:  
    void bark() {  
        cout << "I can bark!" << endl;  
    }  
};  
  
class Cat : public Animal {  
public:  
    void meow() {
```

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```
cout << "I can meow!" << endl;  
}  
};  
  
int main() {  
    Dog d;  
    d.eat();  
    d.bark();  
  
    Cat c;  
    c.eat();  
    c.meow();  
    return 0;  
}
```

When to Use:

- You have multiple classes sharing common behavior or properties but require specialized implementations.
- Classes are logically different but inherit from a common base class.

Example Applications:

- **Banking Systems:**
 - Account → SavingsAccount, CurrentAccount.
- **E-commerce Product Categories:**
 - Product → Clothing, Electronics, Furniture.

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