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Module 4 - Multilevel Inheritance in C Plus Plus

Inheritance in C Plus Plus

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Multilevel Inheritance

In multilevel inheritance, a derived class inherits from another derived class.

Syntax:

```
class Base {  
    // Base class members  
};  
  
class Intermediate : public Base {  
    // Intermediate class members  
};  
  
class Derived : public Intermediate {  
    // Derived class members  
};
```

Solved Example:

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

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```

cout << "I can bark!" << endl;
    }
};

int main() {
    Dog d;
    d.eat(); // From Animal
    d.walk(); // From Mammal
    d.bark(); // From Dog
    return 0;
}
    
```

When to Use:

- You need a layered hierarchy, where each level adds new functionality to the previous one.
- Derived classes build upon the functionality of their immediate parent class and extend it further.

Example Applications:

- **Game Development:**
 - GameObject → Character → Player → Warrior.
- **E-commerce platforms:**
 - Product → Electronics → Mobile.

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