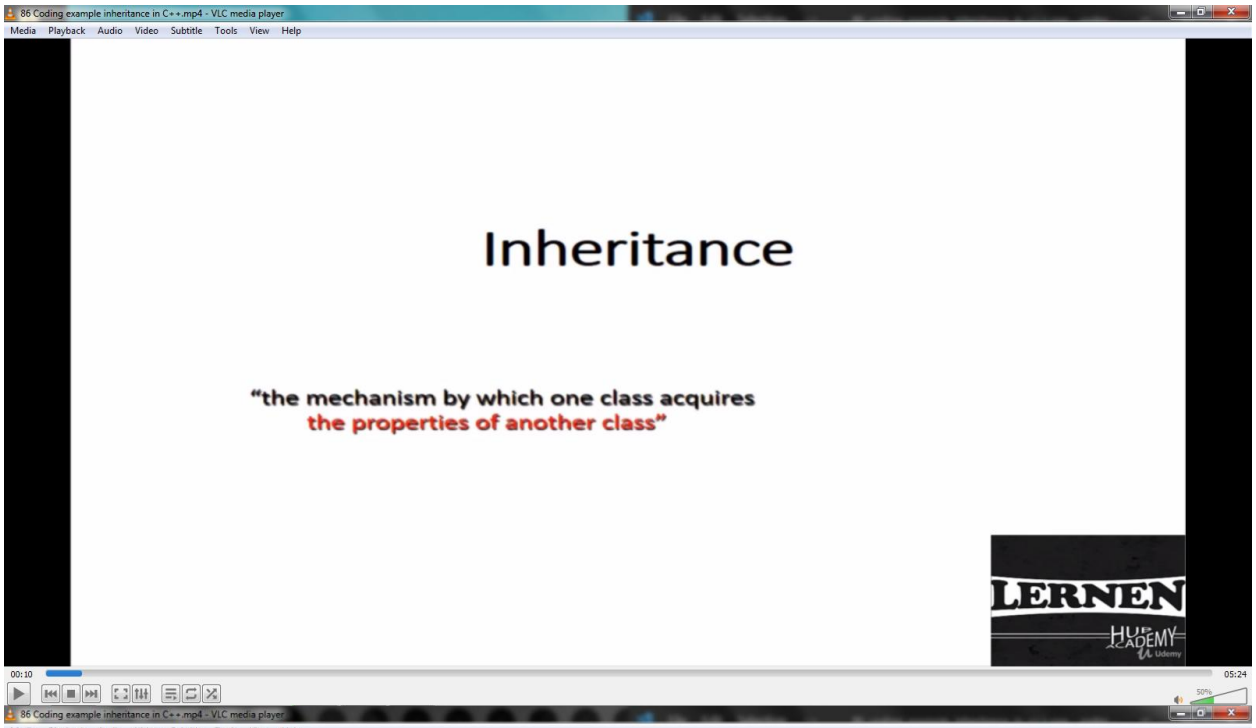
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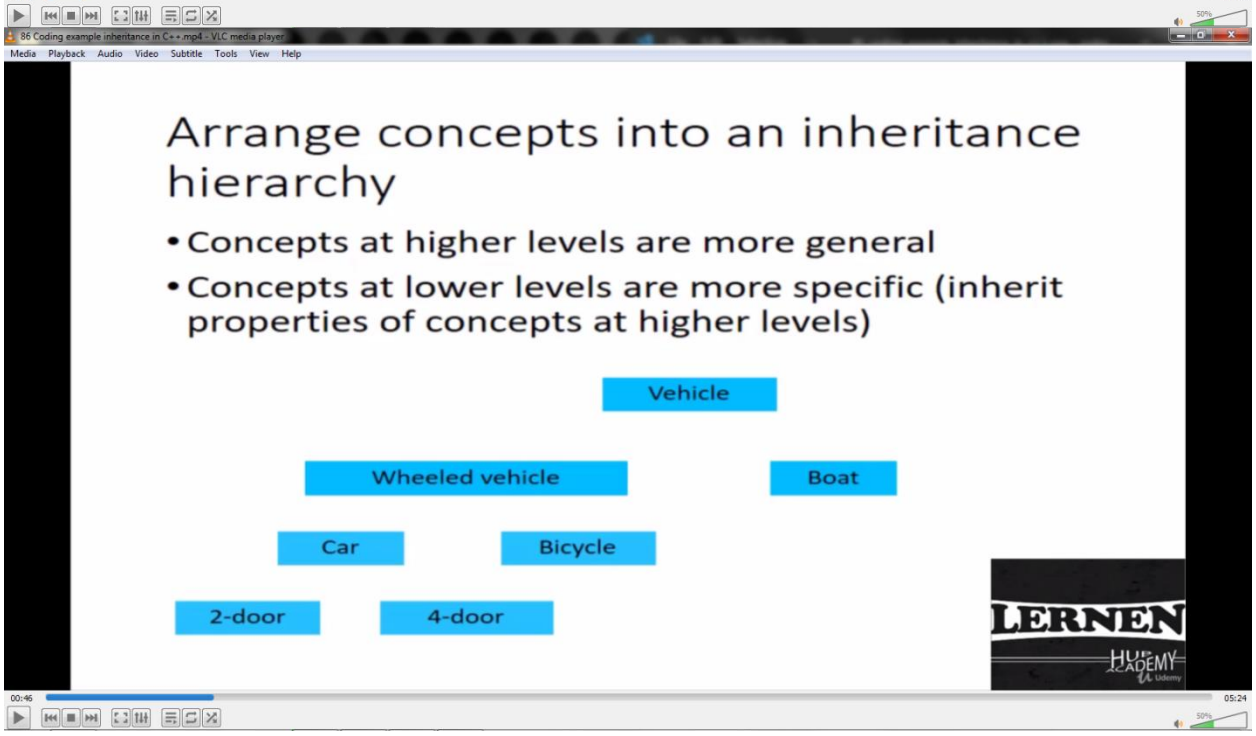
Inheritance
"the mechanism by which one class acquires
the properties of another class"
LERNEN
ACADEMY
00:10
05:24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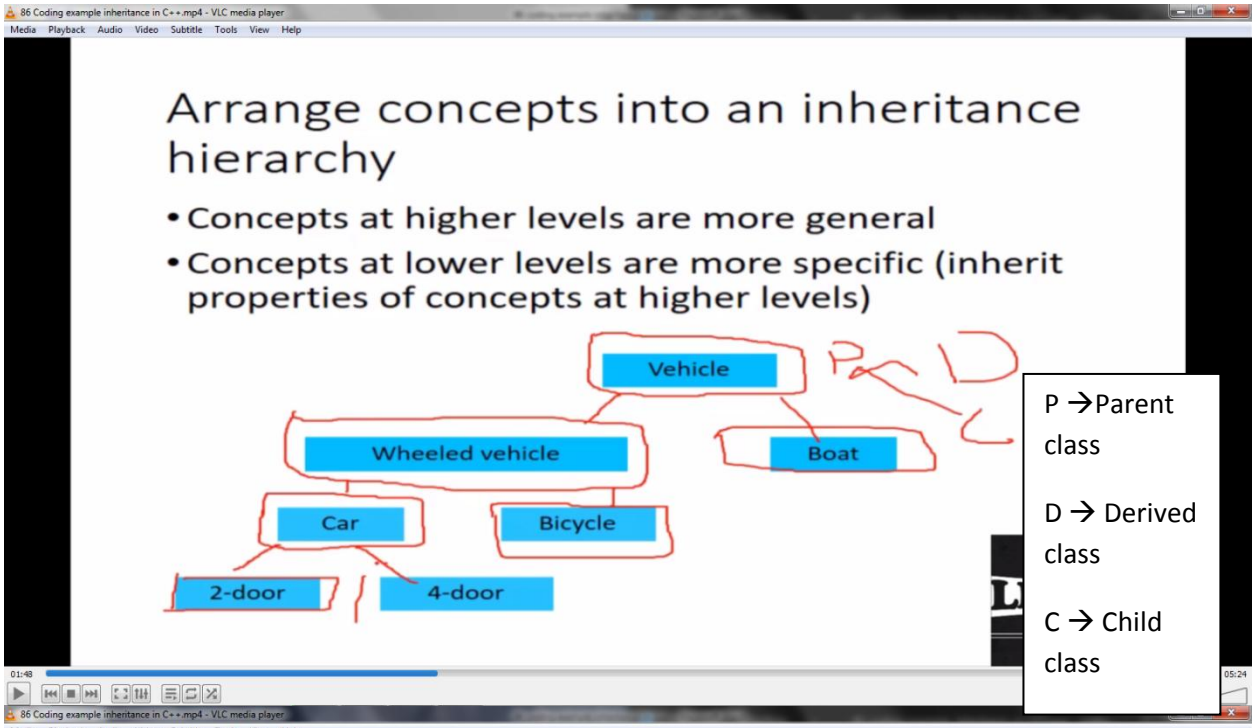
Arrange concepts into an inheritance hierarchy
• Concepts at higher levels are more general
• Concepts at lower levels are more specific (inherit properties of concepts at higher levels)
Vehicle
Wheeled vehicle
Boat
Car
Bicycle
2-door
4-door
LERNEN
ACADEMY
00:46
05:24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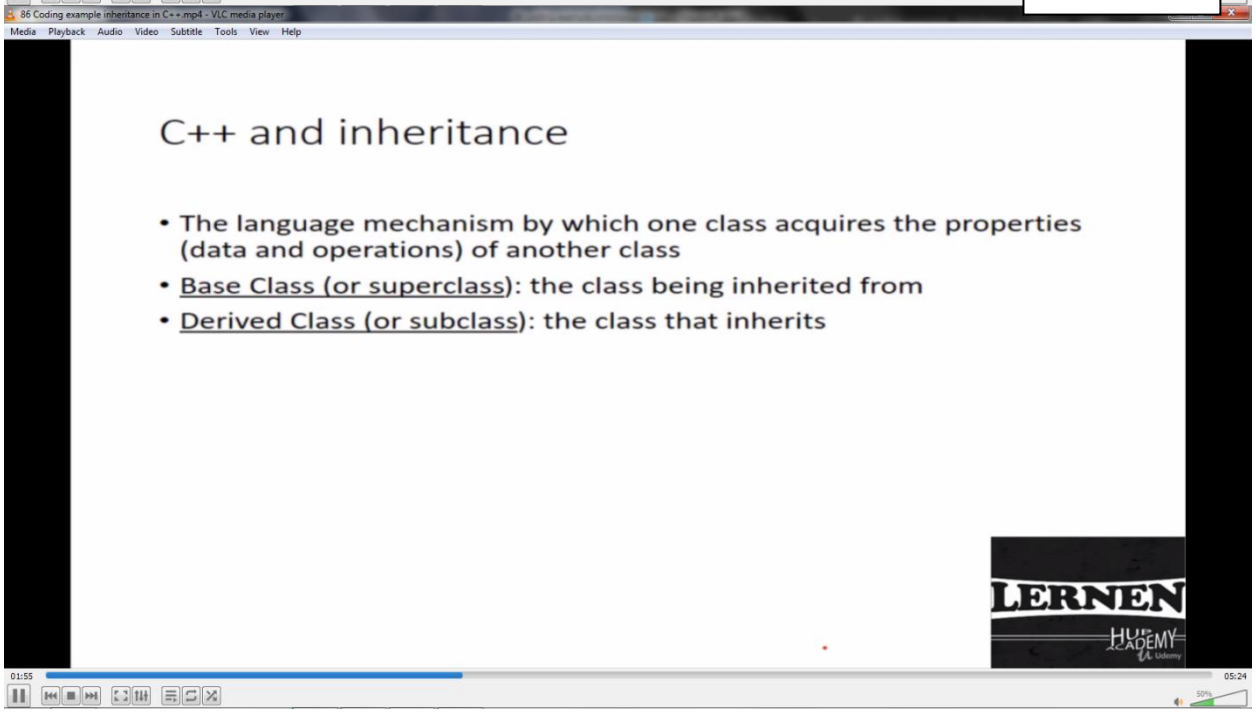
Arrange concepts into an inheritance hierarchy
• Concepts at higher levels are more general
• Concepts at lower levels are more specific (inherit properties of concepts at higher levels)
Vehicle
Wheeled vehicle
Boat
Car
Bicycle
2-door
4-door
P → Parent class
D → Derived class
C → Child class
01:48
05:24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C++ and inheritance
• The language mechanism by which one class acquires the properties (data and operations) of another class
• Base Class (or superclass): the class being inherited from
• Derived Class (or subclass): the class that inherits
LERNEN
ACADEMY
Udemy
01:55
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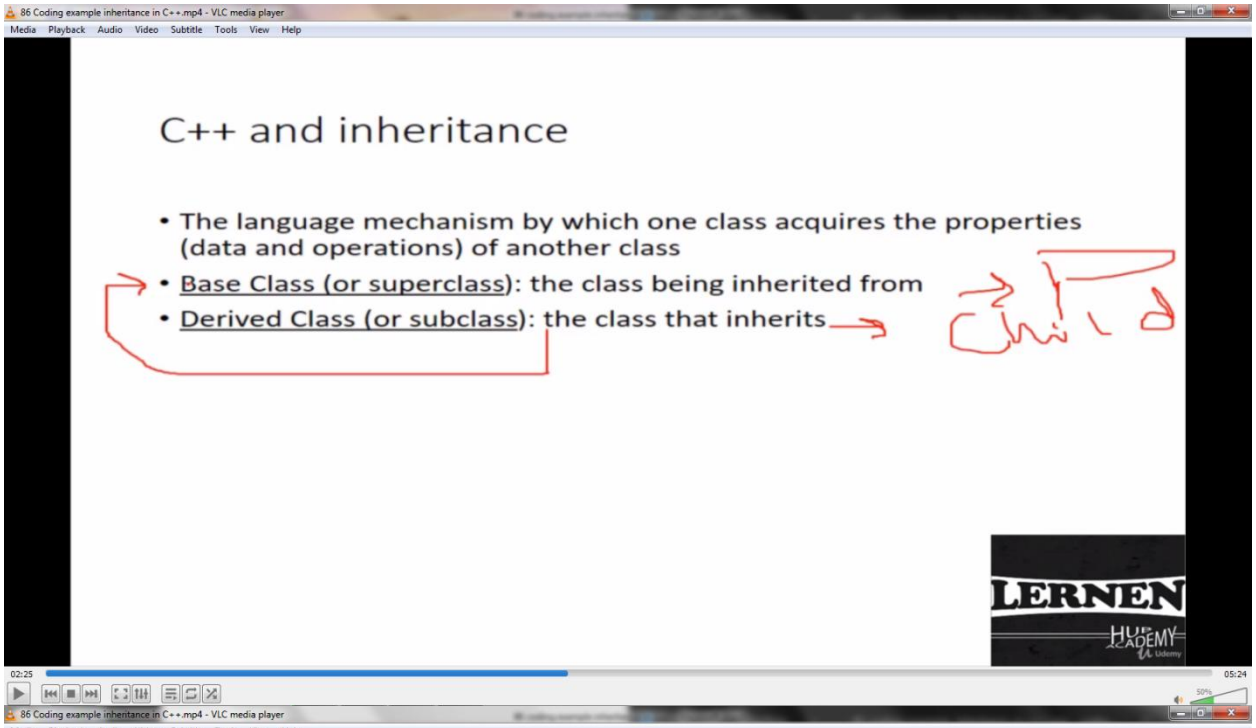
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C++ and inheritance
• The language mechanism by which one class acquires the properties (data and operations) of another class
• Base Class (or superclass): the class being inherited from
• Derived Class (or subclass): the class that inherits
LERNEN
HUB ACADEMY
02:25
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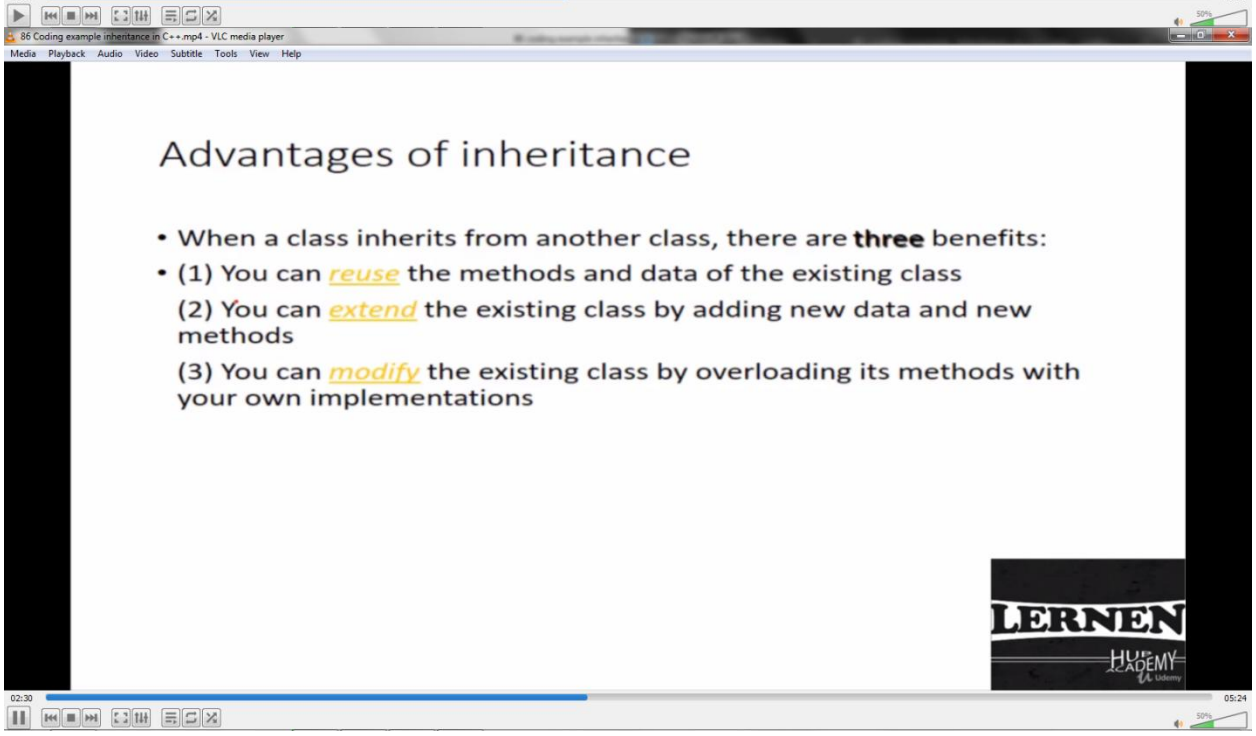
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Advantages of inheritance
• When a class inherits from another class, there are three benefits:
• (1) You can reuse the methods and data of the existing class
(2) You can extend the existing class by adding new data and new methods
(3) You can modify the existing class by overloading its methods with your own implementations
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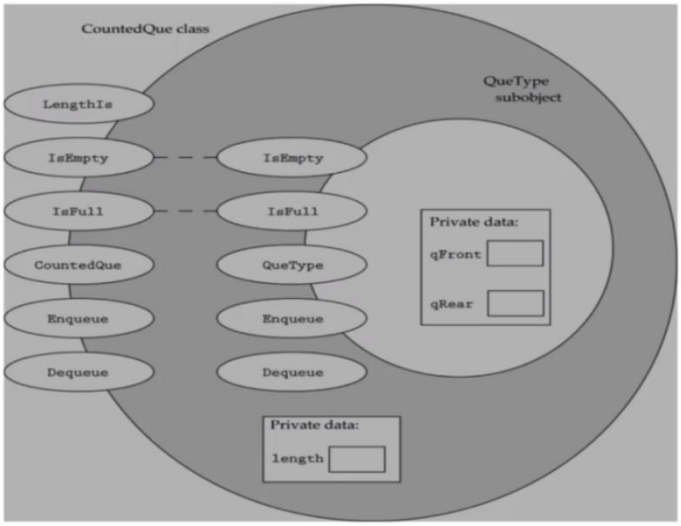
Deriving One Class from Another



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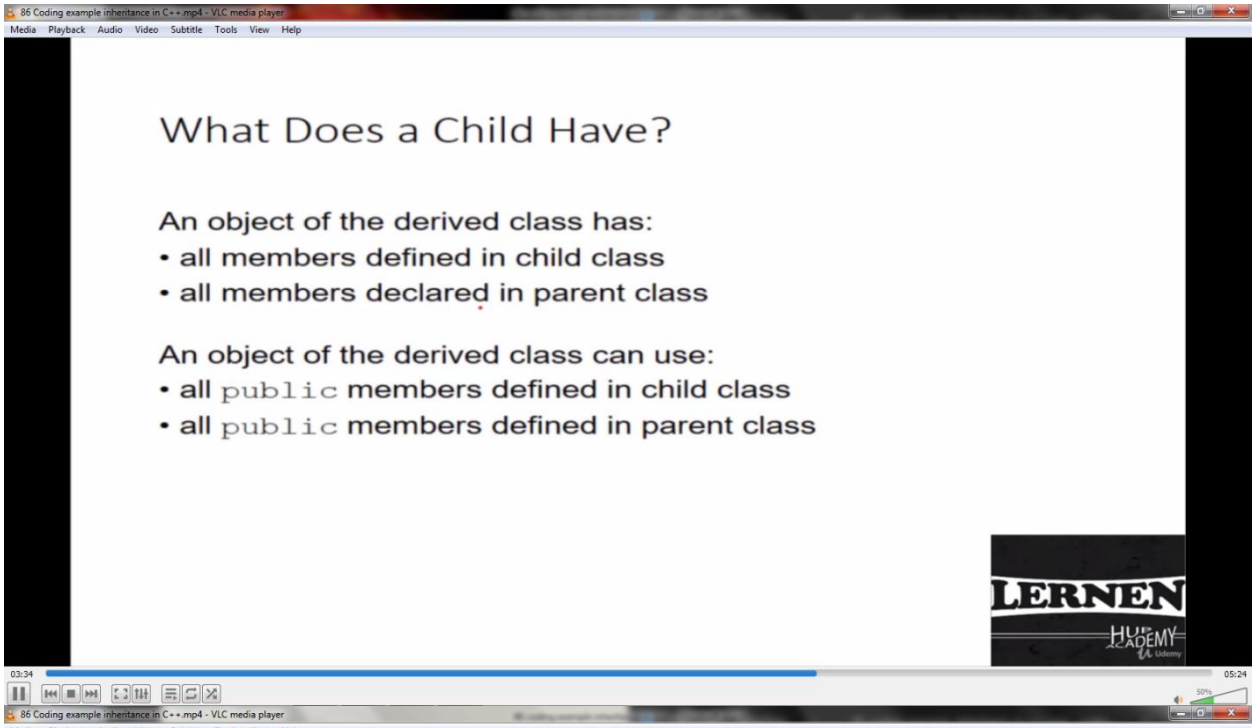
Inheritance and accessibility

- A class inherits the *behavior* of another class and enhances it in some way
- Inheritance *does not* mean inheriting access to another class' private members

03:18 05:24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What Does a Child Have?
An object of the derived class has:
• all members defined in child class
• all members declared in parent class
An object of the derived class can use:
• all public members defined in child class
• all public members defined in parent class
LERNEN
ACADEMY
03:34
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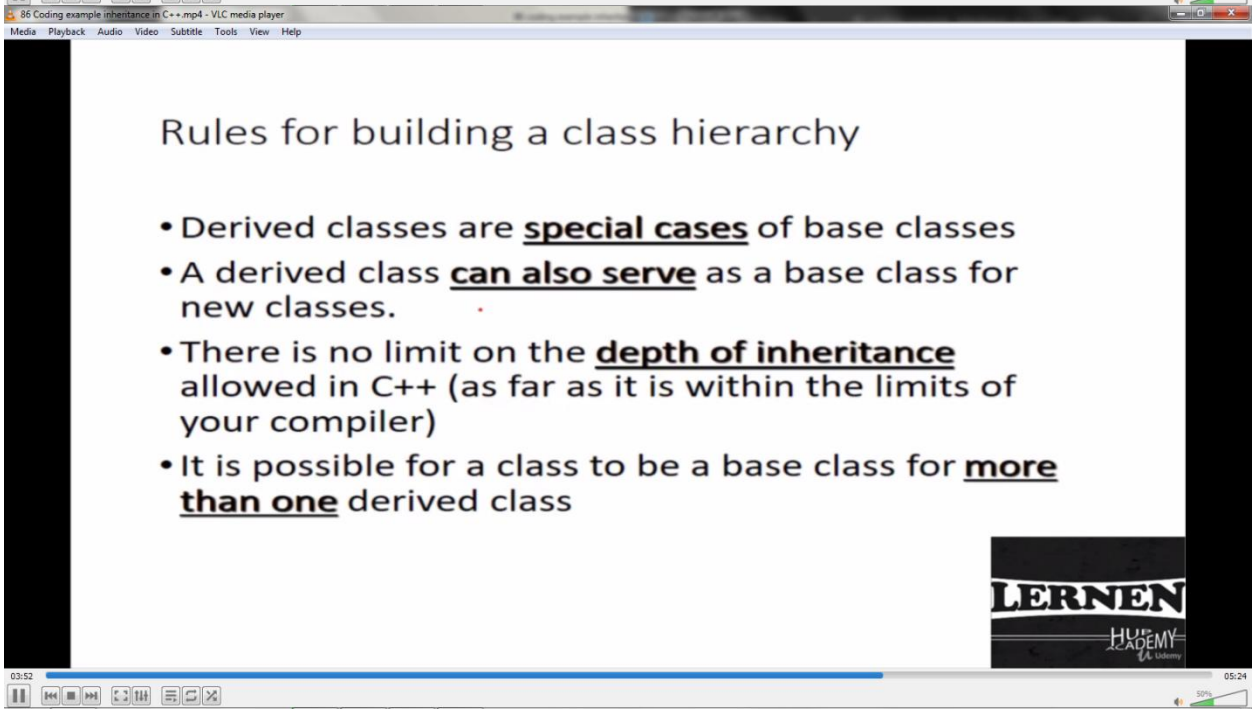
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Rules for building a class hierarchy
• Derived classes are special cases of base classes
• A derived class can also serve as a base class for new classes.
• There is no limit on the depth of inheritance allowed in C++ (as far as it is within the limits of your compiler)
• It is possible for a class to be a base class for more than one derived class
LERNEN
ACADEMY
03:52
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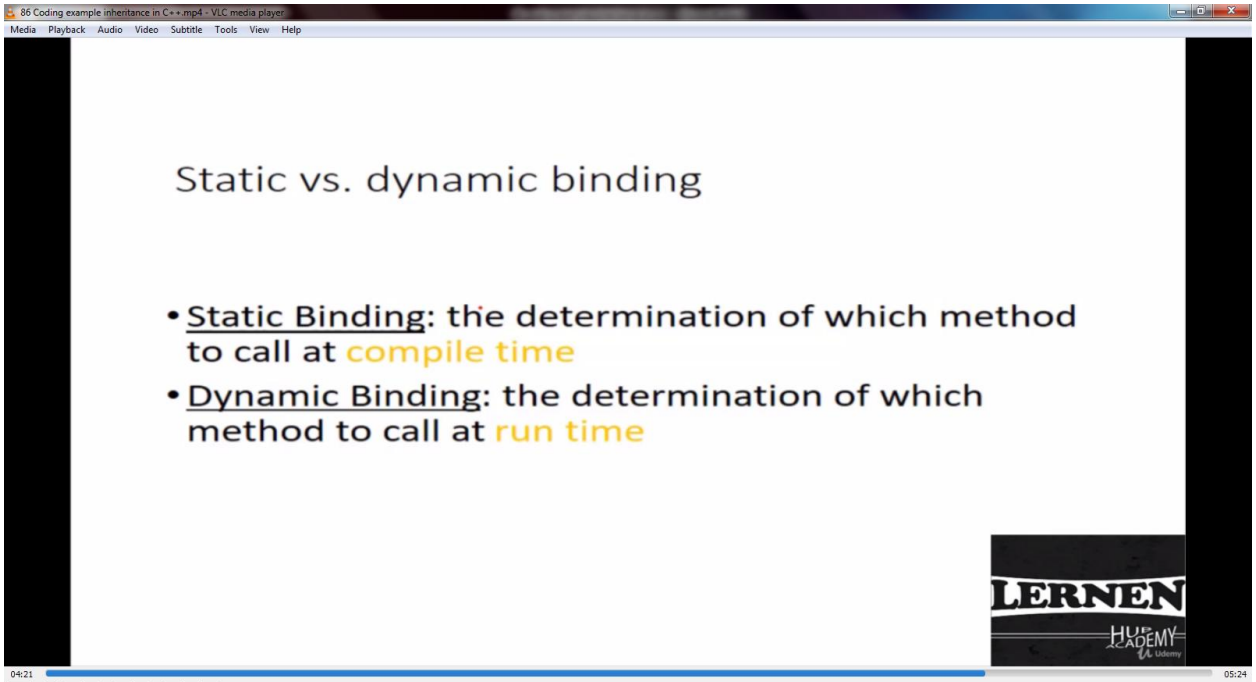
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Static vs. dynamic binding
• Static Binding: the determination of which method to call at compile time
• Dynamic Binding: the determination of which method to call at run time
LERNEN
HUB ACADEMY
Udemy
04:21
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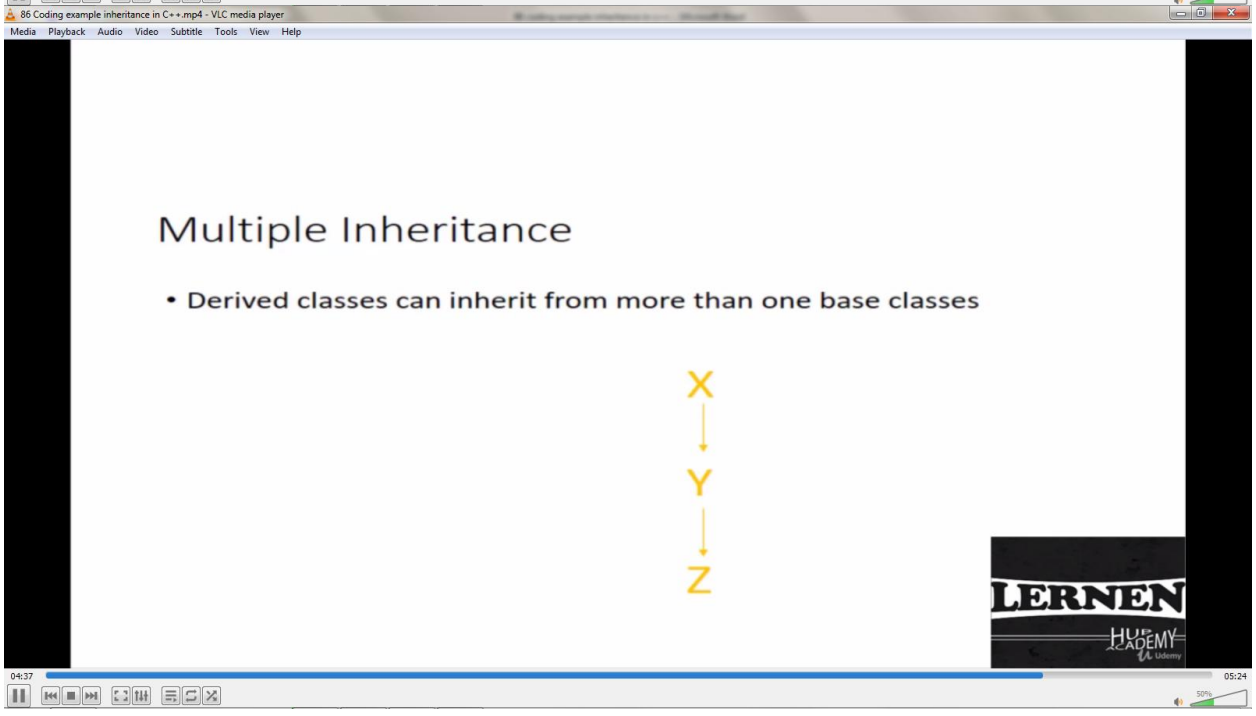
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Multiple Inheritance
• Derived classes can inherit from more than one base classes
X
Y
Z
LERNEN
HUB ACADEMY
Udemy
04:37
05:24

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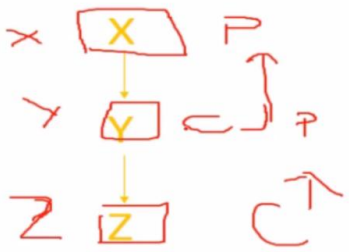
Multiple Inheritance

- Derived classes can inherit from more than one base classes



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