

# OOPS - 2

# In This Lecture

1. Java Inheritance
2. Method overriding
3. super keyword
4. this vs super keyword
5. final keyword

# Java Inheritance

Inheritance is one of the key features of OOP that allows us to create a new class from an existing class.

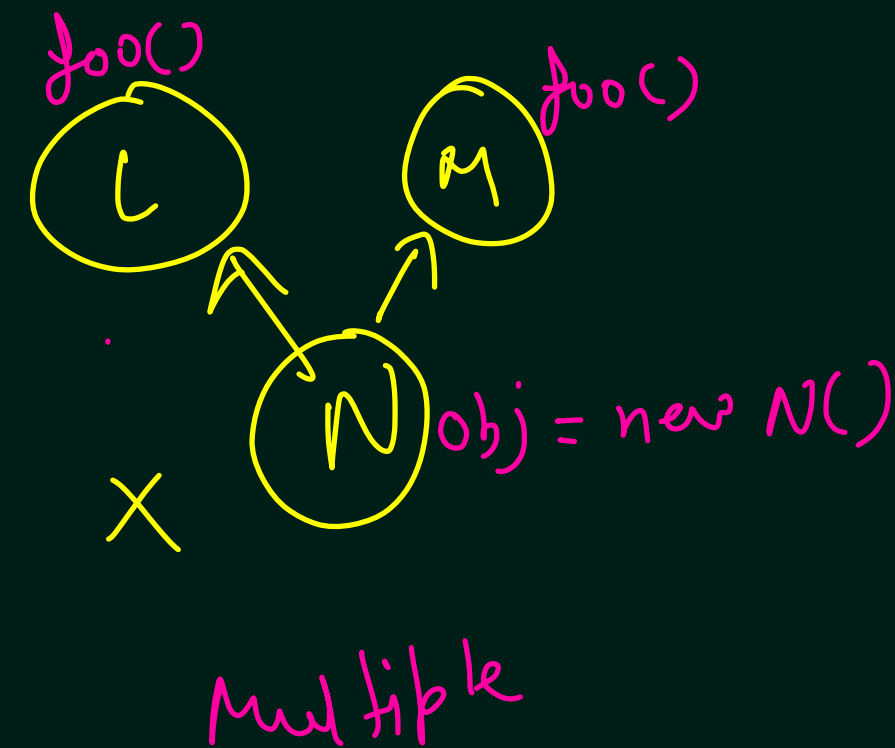
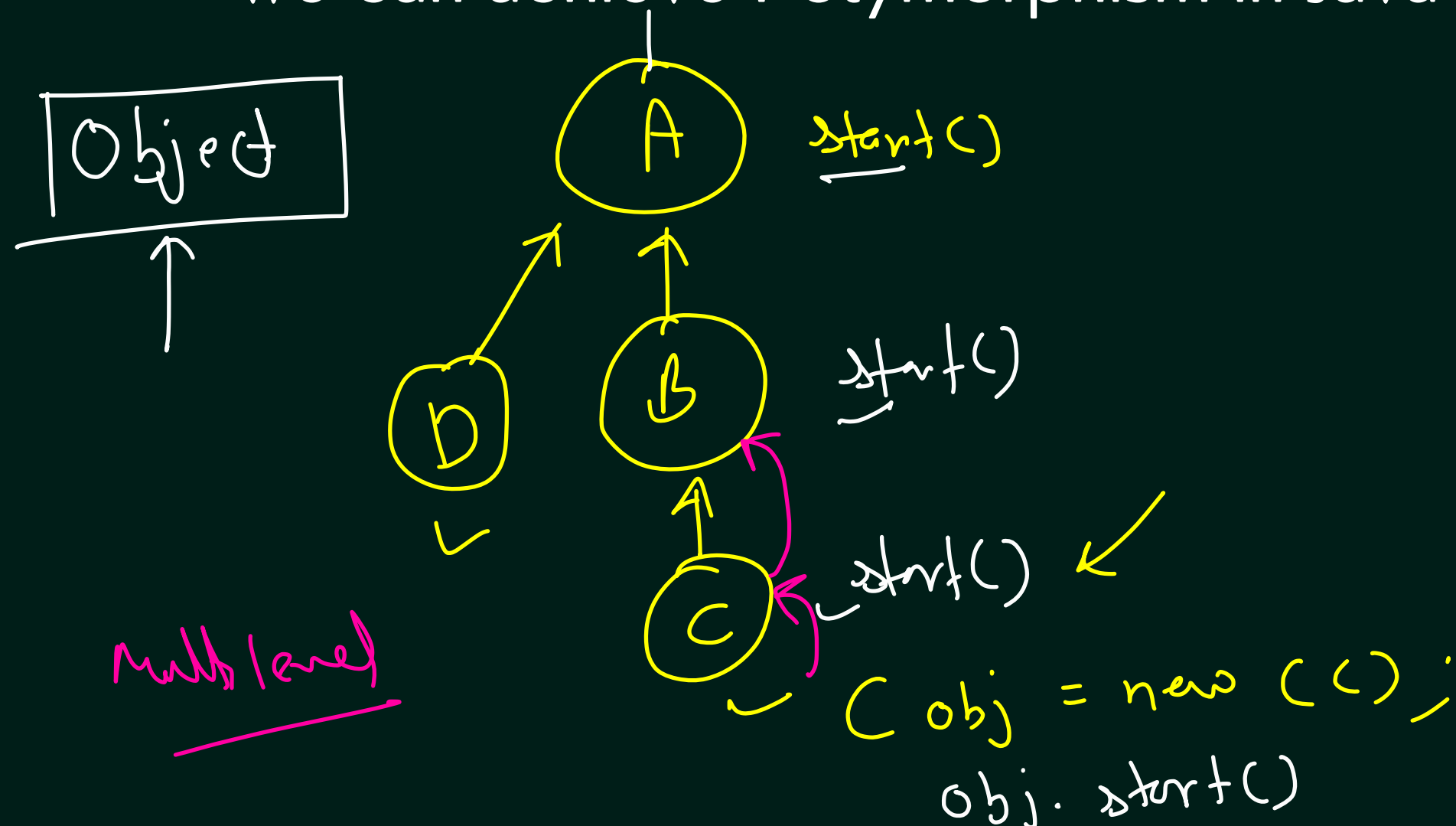
The new class that is created is known as subclass (child or derived class) and the existing class from where the child class is derived is known as superclass (parent or base class).



# Method Overriding

If a subclass provides the specific implementation of the method that has been declared by one of its parent class, it is known as method overriding.

- Method overriding is also known as runtime polymorphism. Hence, we can achieve Polymorphism in Java with the help of inheritance.

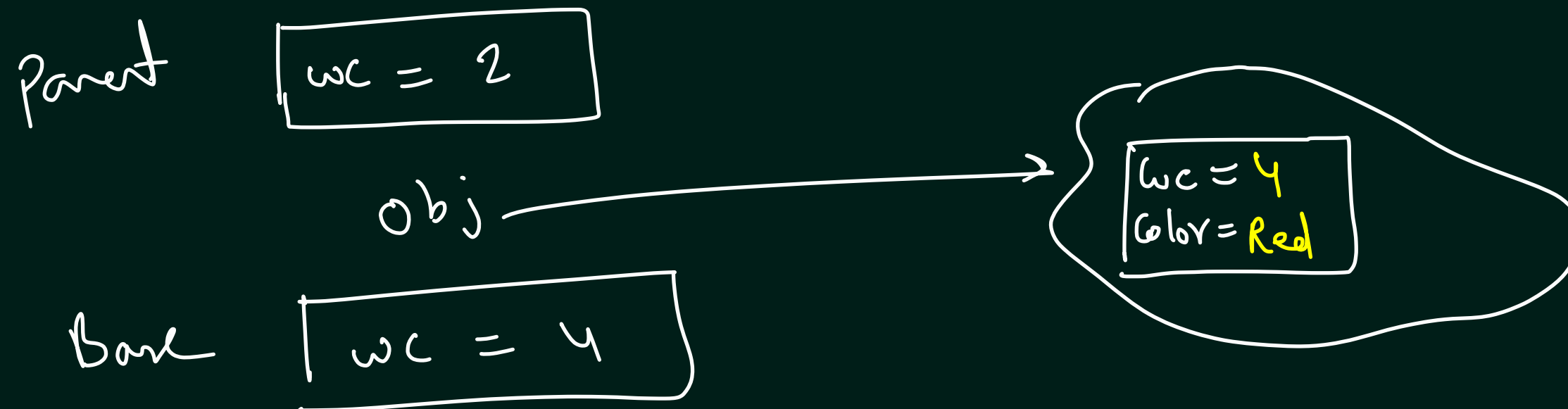


# super Keyword in Java

**super** is a special keyword in Java that is used to refer to the instance of the immediate parent class.

## Uses of super Keyword in Java

- It is used to refer to an instance variable of the immediate parent class.
- It is used to invoke a method of the immediate parent class.
- It is used to invoke a constructor of immediate parent class.



# this vs super

this keyword in Java	super keyword in Java
✓ <b>this</b> is an implicit reference variable keyword used to represent the current class.	✓ <b>super</b> is an implicit reference variable keyword used to represent the immediate parent class.
<b>this</b> is to invoke methods of the current class.	<b>super</b> is used to invoke methods of the immediate parent class.
<b>this</b> is used to invoke a constructor of the current class.	<b>super</b> is used to invoke a constructor of the immediate parent class.
✓ <b>this</b> refers to the instance and static variables of the current class.	<b>super</b> refers to the instance and static variables of the immediate parent class.
✓ <b>this</b> can be used to return and pass as an argument in the context of a current class object.	✓ <b>super</b> can be used to return and pass as an argument in the context of an immediate parent class object.

# final Keyword in Java

↳ In Java, the final keyword is a non-access modifier that is used to define entities that cannot be changed or modified.

Type	Description
✓ Final Variable	Variable with <b>final</b> keyword cannot be assigned again ]
✓ Final Method	Method with <b>final</b> keyword cannot be overridden by its subclasses ]
✓ Final Class	Class with <b>final</b> keywords cannot be extended or inherited from other classes ]

