

Real Life Example

Like a man at the same time is a father, a husband, an employee. So the same person possesses different roles. This is called polymorphism.

Inheritance

Inheritance is a feature of OOPs which allows subclasses to inherit properties from the parent class.

Types of Inheritance

- **Single inheritance** - When a class inherits from a single class, it is known as a single inheritance.
- **Multiple inheritances** - Multiple inheritances come into the picture when a class inherits from multiple parent classes.

Parent 1 & Parent2 → child

- **Multilevel inheritance** - When there is a chain of inheritance, it is known as multilevel inheritance.

Example: Animal → Dog → Puppy

Puppy Inherits from the Dog Class, Dog class inherits from the Class Animal.

- **Hierarchical inheritance** - When two or more classes inherit a single class, it is known as hierarchical inheritance.

Example: Animal → Dog = Cats

- **Hybrid inheritance** - Hybrid inheritance is a combination of multiple and multi-level inheritances.

Advantages

The main advantages of inheritance are code reusability and readability. When a child class inherits the parent class, we need not to write the same code again in the child class. This makes it easier to reuse code and the code becomes much more readable.

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If there is a class such as 'vehicle', other classes like 'car', 'bike', etc can inherit common properties from the vehicle class.

What is Overloading and Overriding?

When two or more methods in the same class have the same name but different parameters, it's called method overloading.

When the method name and parameters are the same in the superclass and the child class, it's called method overriding.

SL	Overloading	Overriding
1	Method overloading is a compile-time polymorphism.	Method overriding is a run-time polymorphism.
2	It helps to increase the readability of the program.	It is used to grant the specific implementation of a method that is already provided by its parent class.