Java Object-Oriented Programming

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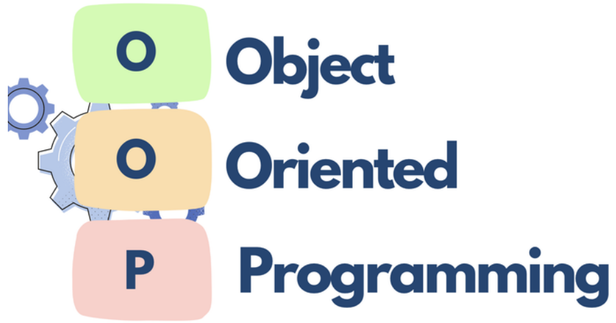

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What is Java?

Java is a programming language first released by Sun Microsystems in 1995.

Java is a high-level, general-purpose, object-oriented, and secure programming language.

Java is widely used for developing applications for desktop, web, and mobile devices.

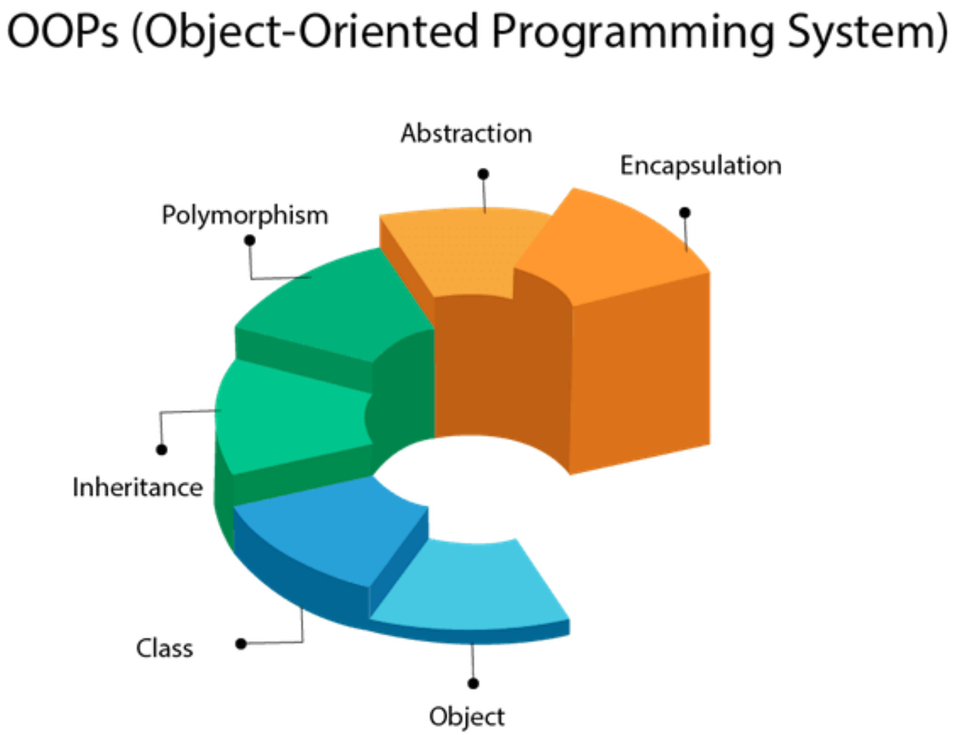
Java OOP concept

An object is a real-world entity.

Object-Oriented Programming is a methodology or paradigm to design a program using classes and objects.

It simplifies software development and maintenance by providing some concepts:

- Class: A class is a template or blueprint or prototype that defines data members and methods of an object. An object is the instance of the class.
- Object: An object is a real-world entity that can be identified distinctly.



In Java, everything is in the form of the object. It means it has some data and behavior. A program must have at least one class and object.

Inheritance

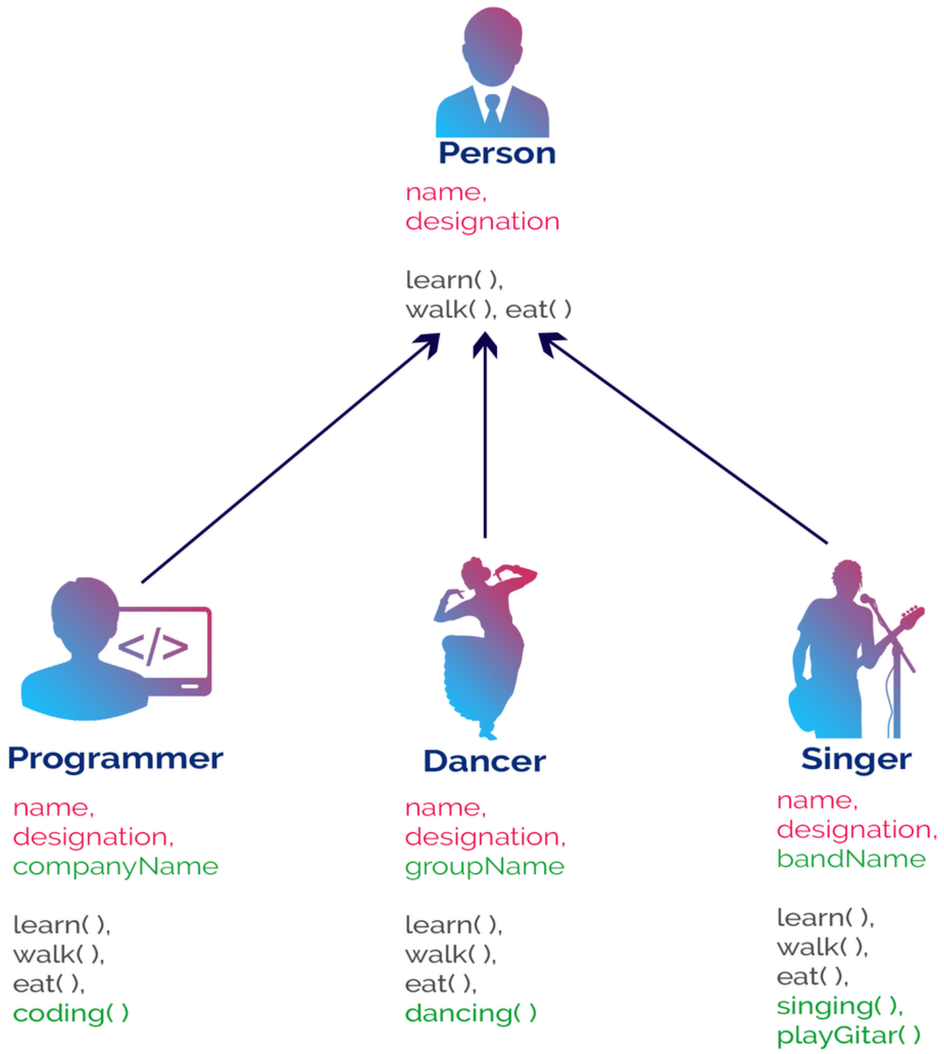
It is an **important part** of OOPs .

Inheritance in Java is a mechanism in which one object acquires **properties and behaviors of a parent object.**

The idea behind inheritance in Java is that you can **create new cl** that are **built upon existing classes.**

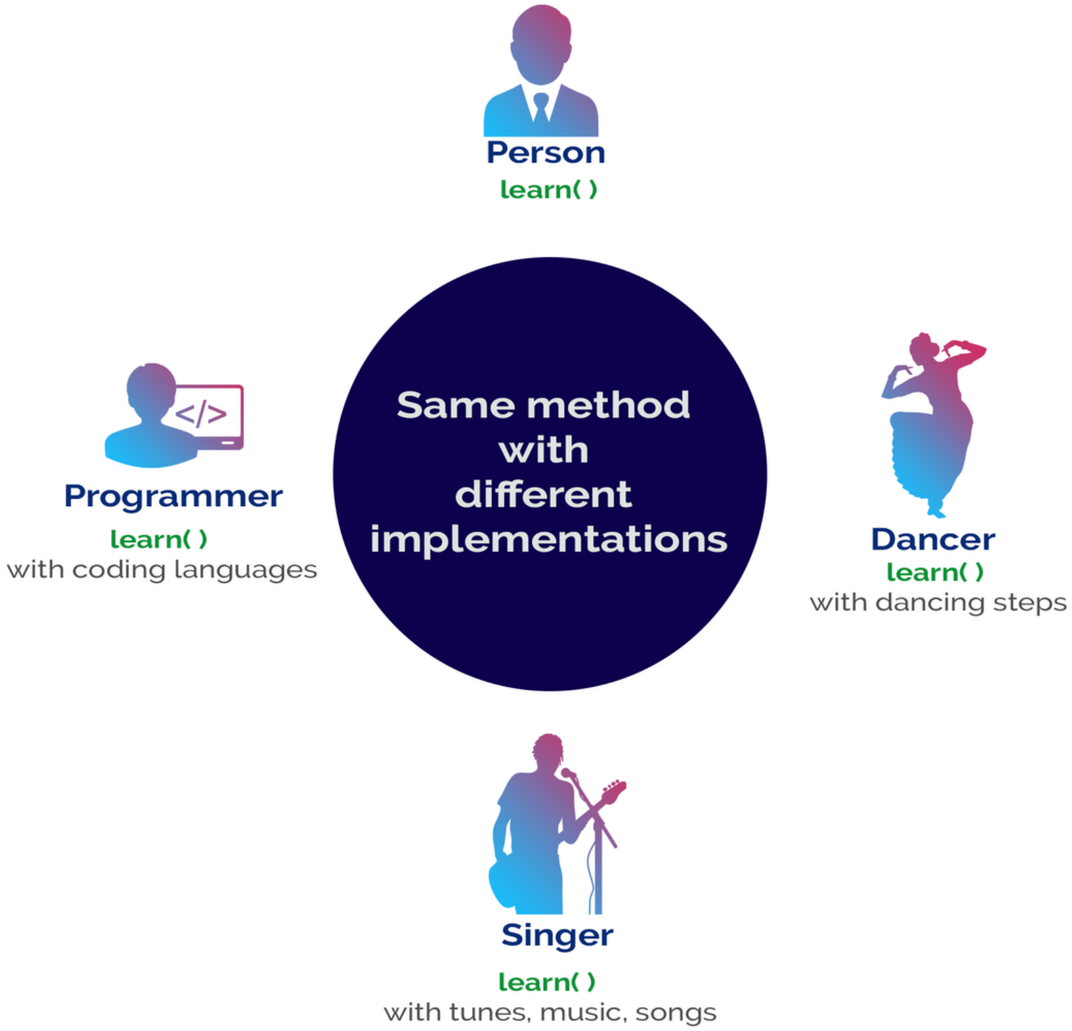
Why use Inheritance???

- Achieve Polymorphism through Overriding
- Code Reusability



Polymorphism

Polymorphism in Java is a concept by which we car **perform a single action in different ways.**



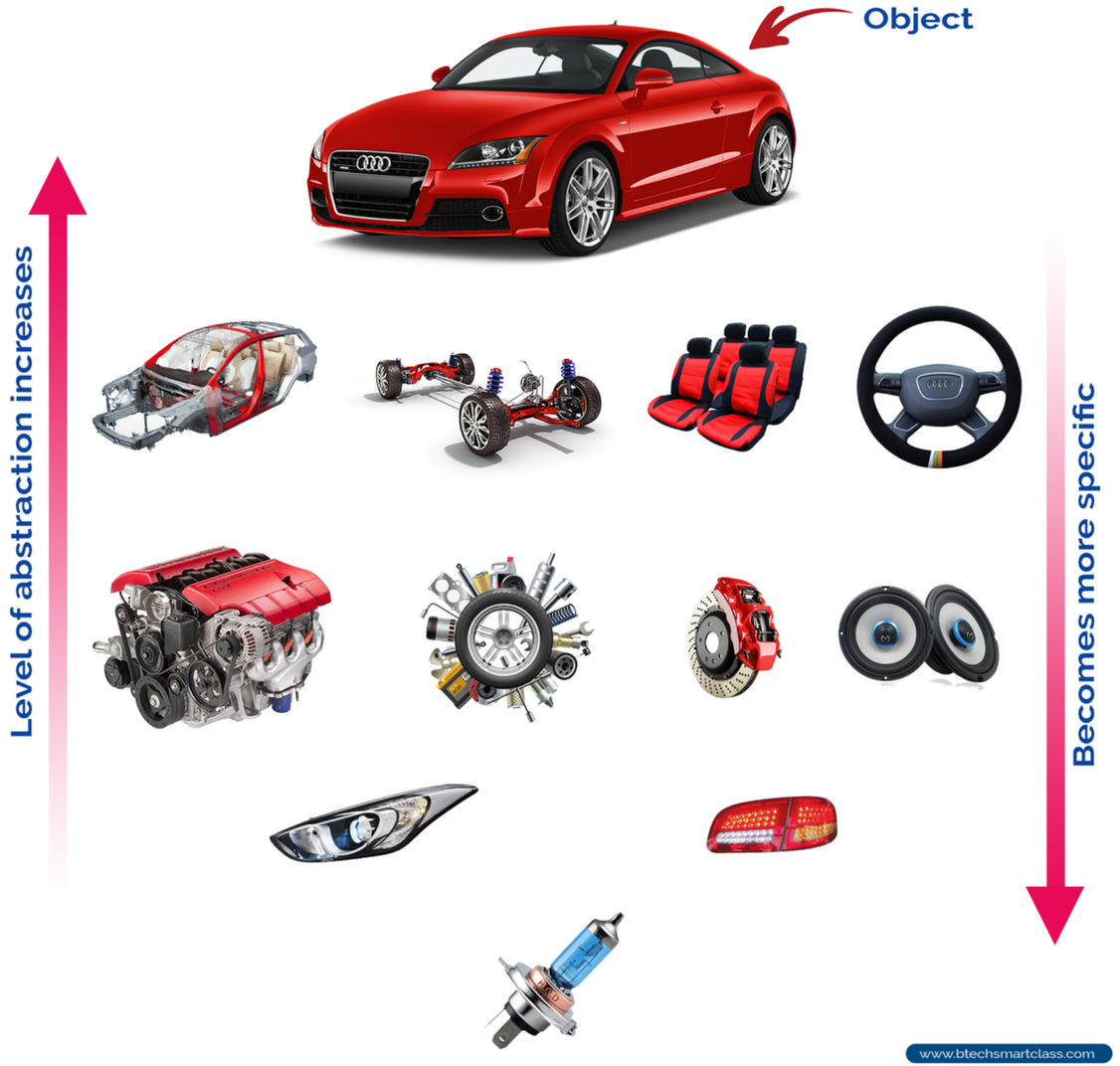
Abstraction

Abstraction is hiding the internal details and showing only esential functionality.

In the abstraction concept, we do not show the actual implemention to the end user, instead we provide only esential things.

Ways to achieve abstraction:

- Abstract class: 0 - 100%
- Interface: 100%



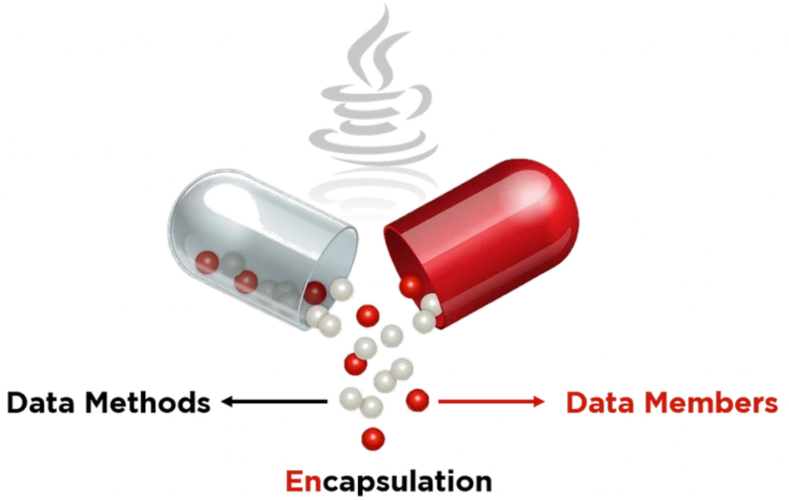
For example, if we want to drive a car, we does not need to know about the internal functionality like how wheel system works? how brake system works? how music system works?

Encapsulation

Encapsulation in Java is a process of wrapping code and data together into a single unit

The access modifiers in Java specifies the accessibility or scope of a field, method, constructor, or class.

There are four types of Java access modifiers:



Access Modifier	within class	within package	outside package by subclass only	outside package
Private	Y	N	N	N
Default	Y	Y	N	N
Protected	Y	Y	Y	N
Public	Y	Y	Y	Y

THANK YOU SO MUCH!!!

For watching my presentation.