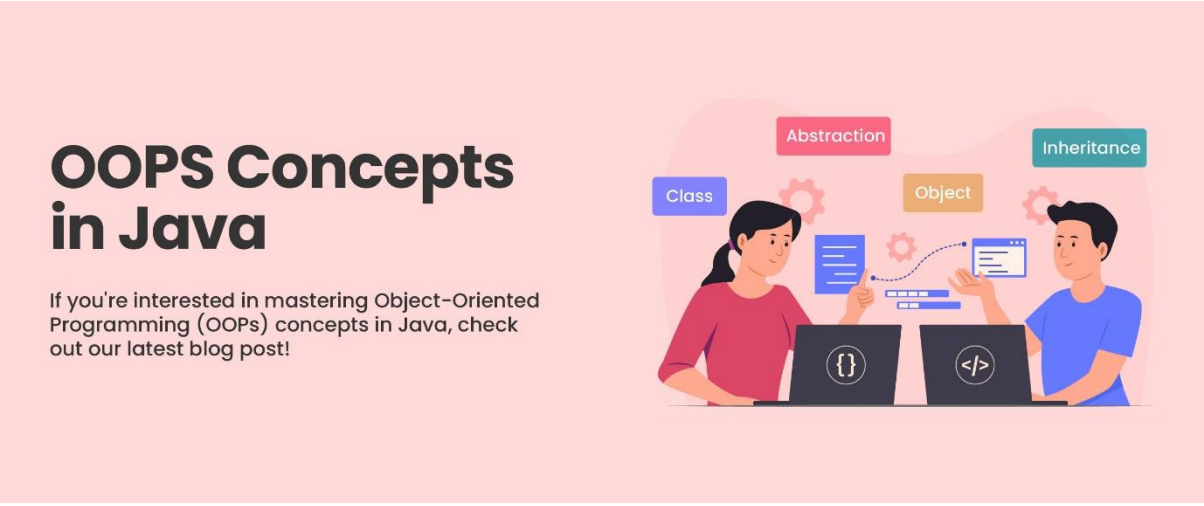
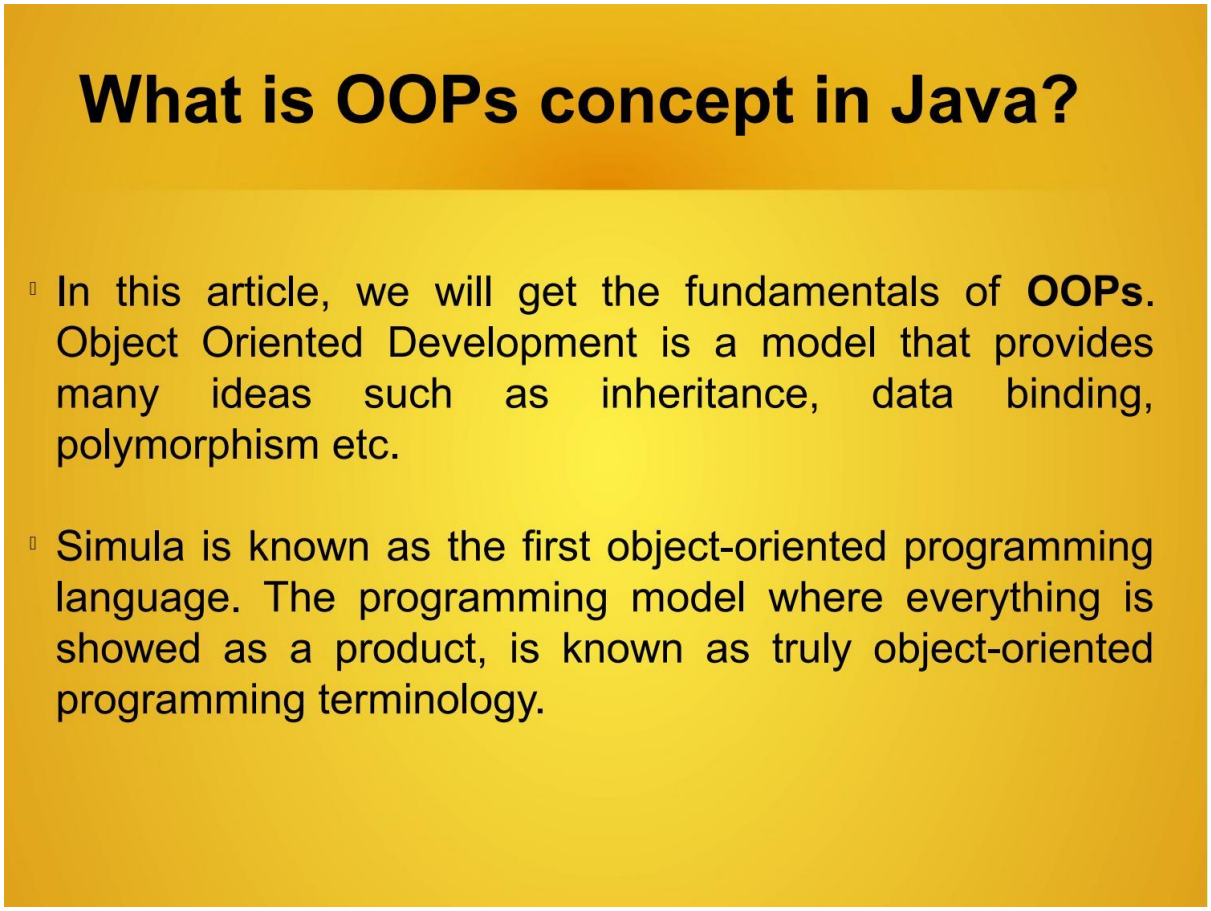


Java OOPs Concepts

1. Object-Oriented Programming
2. Advantage of OOPs over Procedure-oriented programming language
3. Difference between Object-oriented and Object-based programming language.

In this page, we will learn about the basics of OOPs. Object-Oriented Programming is a paradigm that provides many concepts, such as **inheritance**, **data binding**, **polymorphism**, etc.

Simula is considered the first object-oriented programming language. The programming paradigm where everything is represented as an object is known as a truly object-oriented programming language.



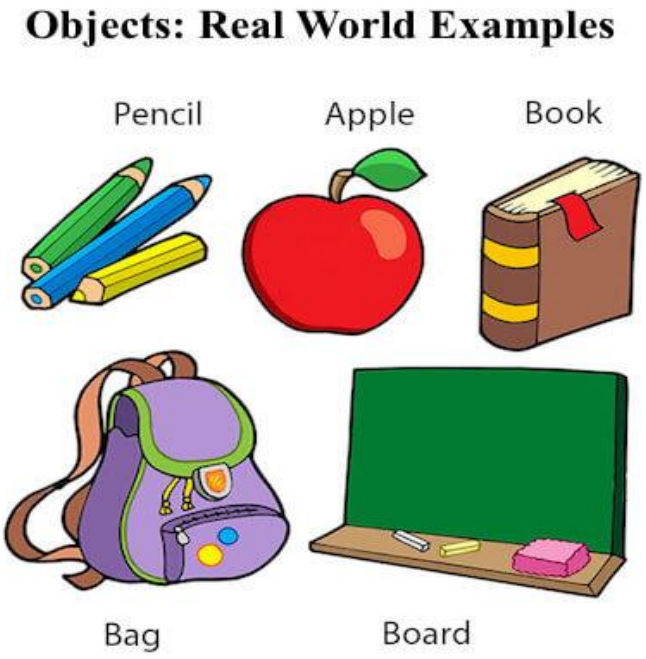
Objects and Classes in Java

1. Object in Java
2. Class in Java
3. Instance Variable in Java
4. Method in Java
5. Example of Object and class that maintains the records of student
6. Anonymous Object

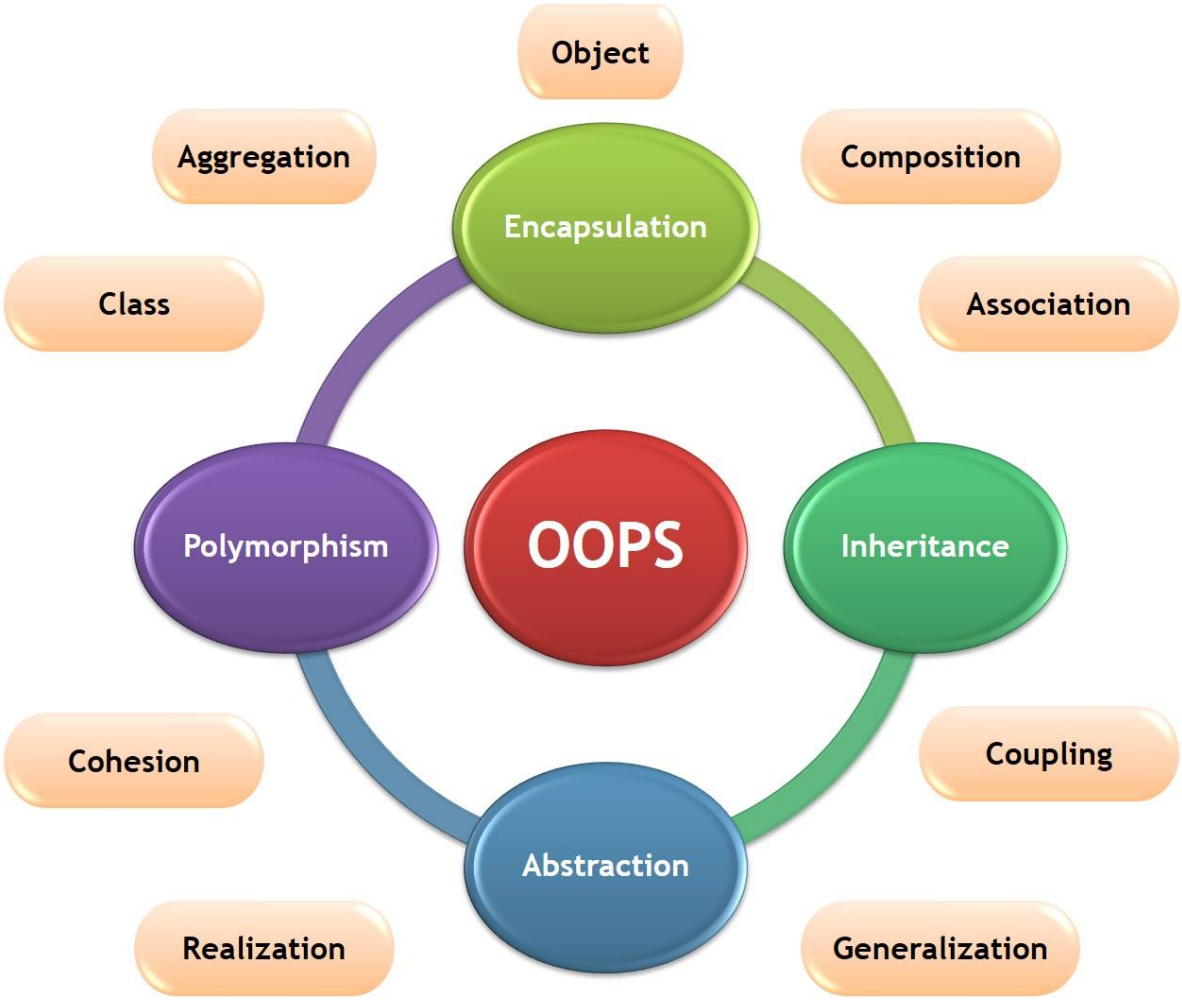
In this page, we will learn about Java objects and classes. In object-oriented programming technique, we design a program using objects and classes.

An object in Java is the physical as well as a logical entity, whereas, a class in Java is a logical entity only.

What is an object in Java



An entity that has state and behavior is known as an object e.g., chair, bike, marker, pen, table, car, etc. It can be physical or logical (tangible and intangible). The example of an intangible object is the banking system.



Method Overloading in Java

1. Different ways to overload the method
2. By changing the no. of arguments
3. By changing the datatype
4. Why method overloading is not possible by changing the return type
5. Can we overload the main method
6. method overloading with Type Promotion

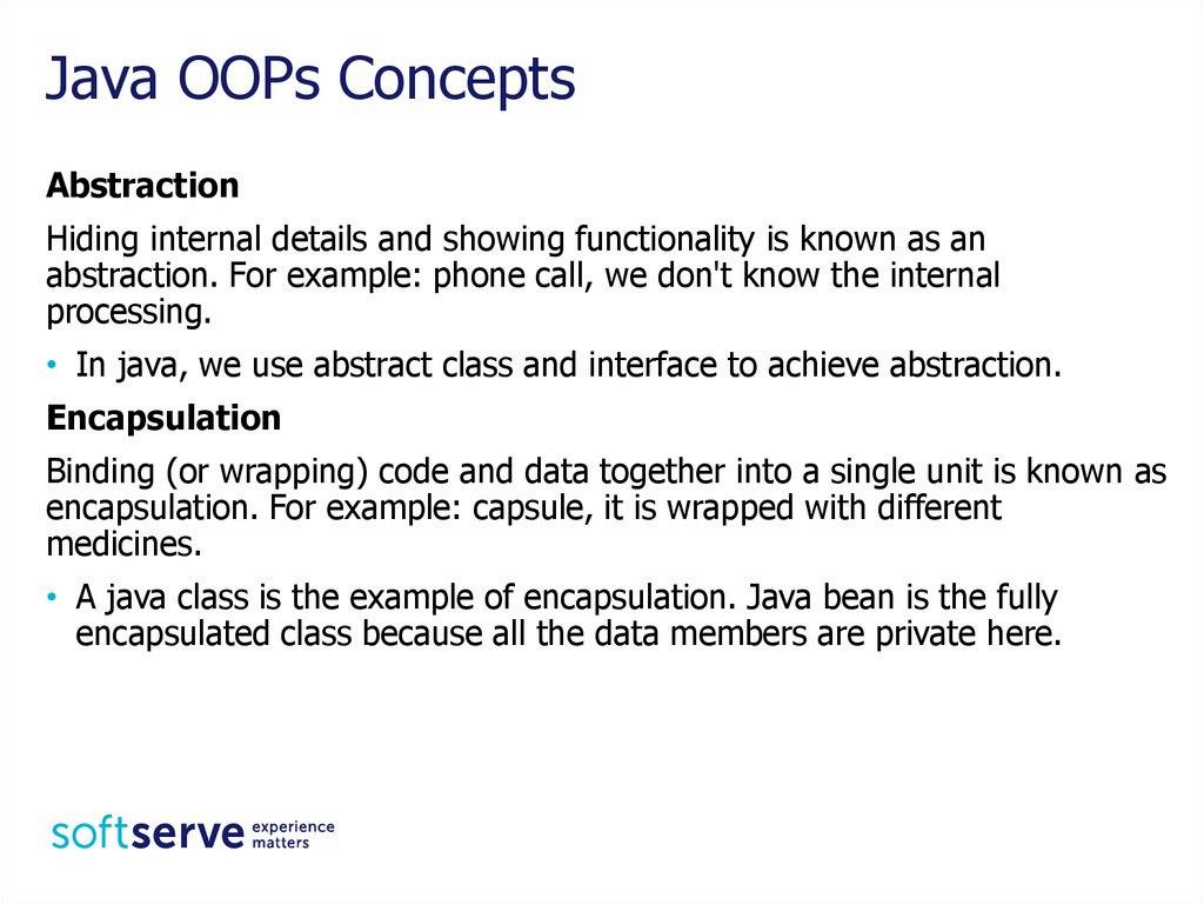
If a class has multiple methods having same name but different in parameters, it is known as **Method Overloading**.

If we have to perform only one operation, having same name of the methods increases the readability of the program.

Suppose you have to perform addition of the given numbers but there can be any number of arguments, if you write the method such as a(int,int) for two parameters,

and b(int,int,int) for three parameters then it may be difficult for you as well as other programmers to understand the behavior of the method because its name differs.

So, we perform method overloading to figure out the program quickly.



Exceptions in Java

- Checked vs. Unchecked exceptions
  - Checked exceptions
    - If a method does NOT handle these, the method MUST state that it throws them
      - Done in a throws clause in the method header
    - These include IOException, and InterruptedException (and their subclasses)
  - Unchecked exceptions
    - Method not required to explicitly "throw" these
    - These include RunTimeException and Error