JAVA Programming

Introduction and history of java

OOPs in java

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Introduction to java :-

Java is a popular programming language, primarily used for building enterprise-level web applications and mobile applications. It is owned by Oracle Corporation.

Key features in java:-

- Platform independence
- Object oriented programming
- High performance
- Memory management and Exceptional Handling
- JDBC and JNDI
- Vast library and communication support
- Concurrency and Multithreading

History of java

- Java is a popular and widely used programming language, which was created by James Gosling at Sun Microsystems, and was first released in 1995. The name “Java” was named because it is the smaller version of c++.
- Java's early history includes being called Oak, then Green, and eventually "Java" in 1995.
- Java 1.0 was first released in 1996.
- Nowadays the Java consisted of exceptional handling,Memory management and many more...
- There are 16 editions of Java Programming from the year 1996 to the 2024.

Origins:-

- Javas origin was traced back in the 1990s with team of sun microsystems, led by “James Gosling” to create a suitable language of Embedded Systems
- “Oak” was later renamed as the “Java” inspired by Coffee consumed in large quanities by the Team of Development , the first version was released in 1996 which is known as Java 1.0

OOPs in java

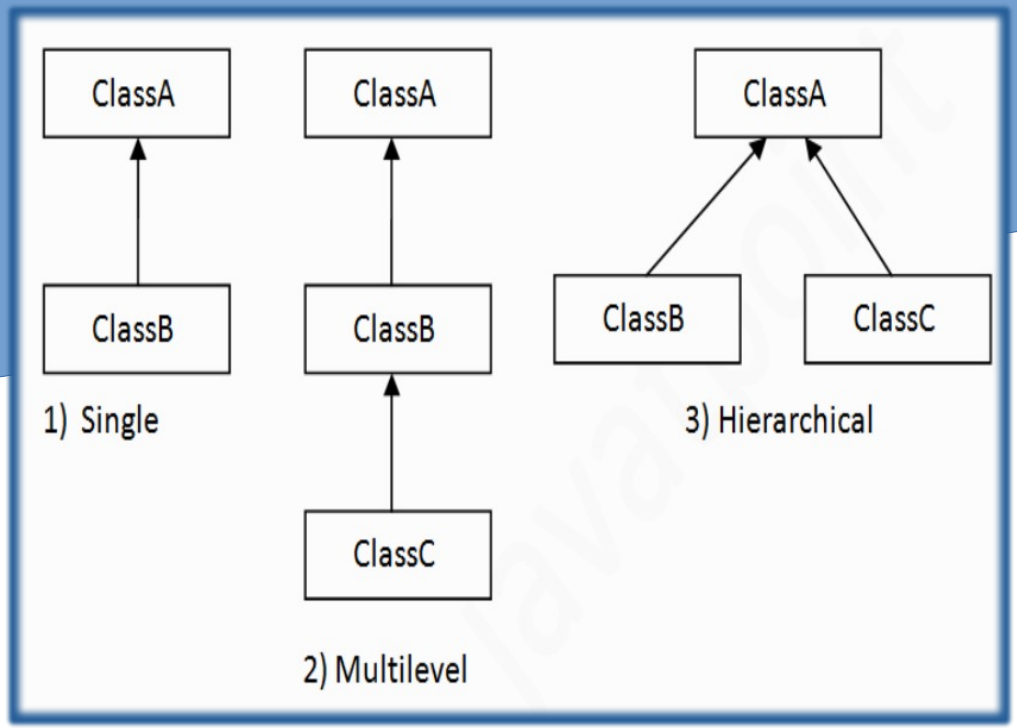
OOPs is known as the Object Oriented Programming . It has 4 key feautes .

They are:--

1. Inheritance
2. Encapsulation
3. Polymorphism
4. Abstration

Inheritance

- Inheritance allows one class to inherit properties from another class. The class that is being inherited from is known as the superclass, and the class that is inheriting is known as the subclass. In inheritance there are different types.They are
  1. Single Inheritance
  2. Multiple Inheritance
  3. Multilevel Inheritance
  4. Hierairical Inheritance
  5. Hybrid Inheritance



Encapsulation

- Encapsulation involves the bundling of data and methods within a single class. This bundling helps to control access to the object's data. Encapsulation promotes data integrity by hiding its implementation details.

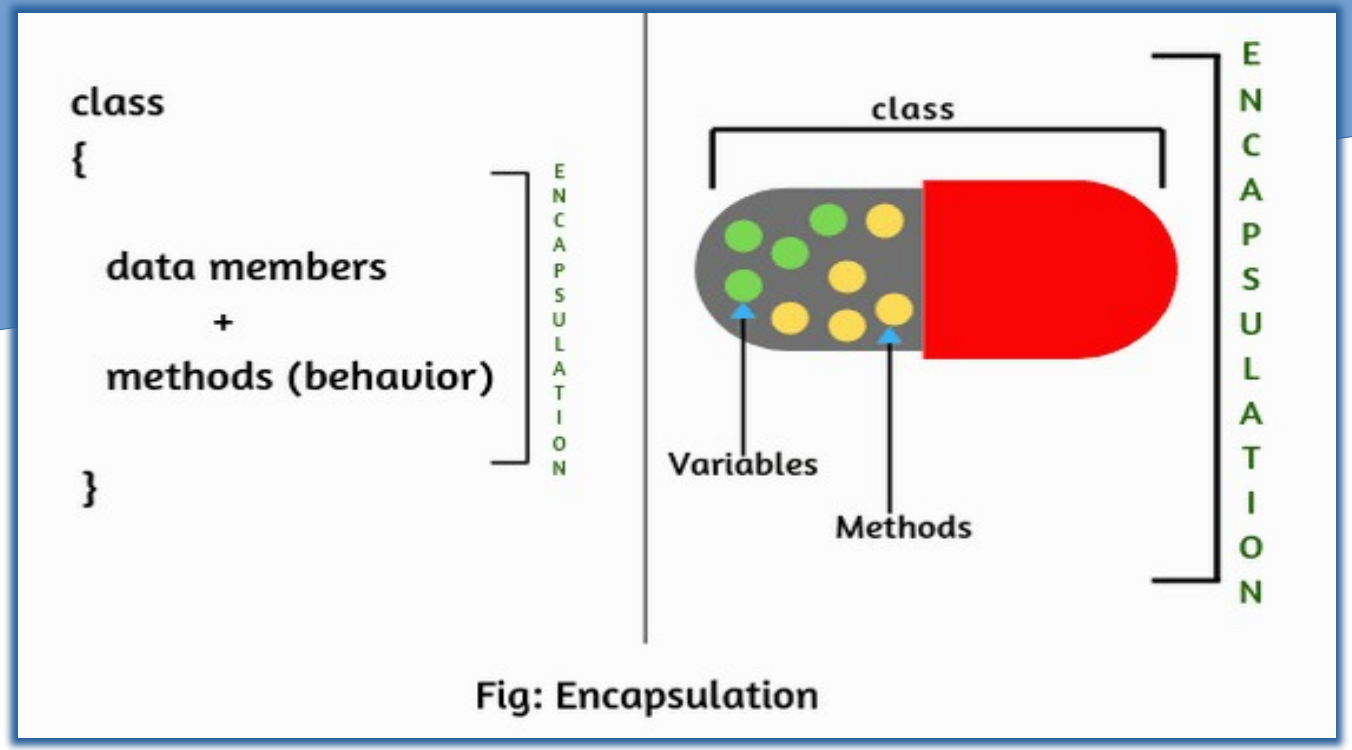
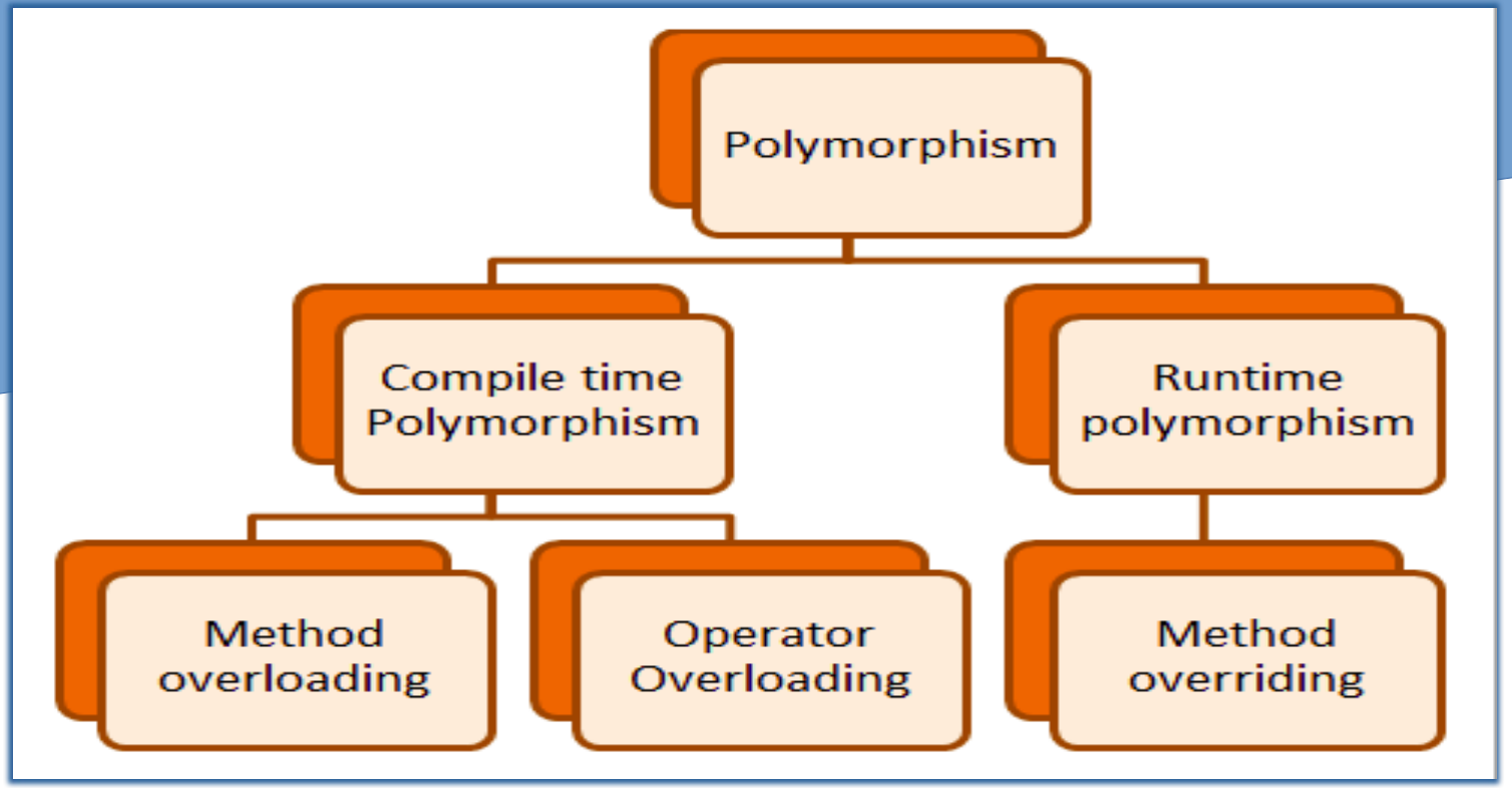


Fig: Encapsulation

Polymorphism

- Polymorphism is a feature in Java that allows a variable or a method to take on different forms. This enables one method to handle different types of parameters or a variable to hold different types of objects.



Abstraction

- Abstraction in Java involves creating abstract classes or interfaces and providing partial implementations. These abstract classes or interfaces act as blueprints for other classes, specifying which methods they must have and how they should behave.