GANDHI SCHOOL OF
ENGINEERING,BHABANDHA,BERHAMPUR

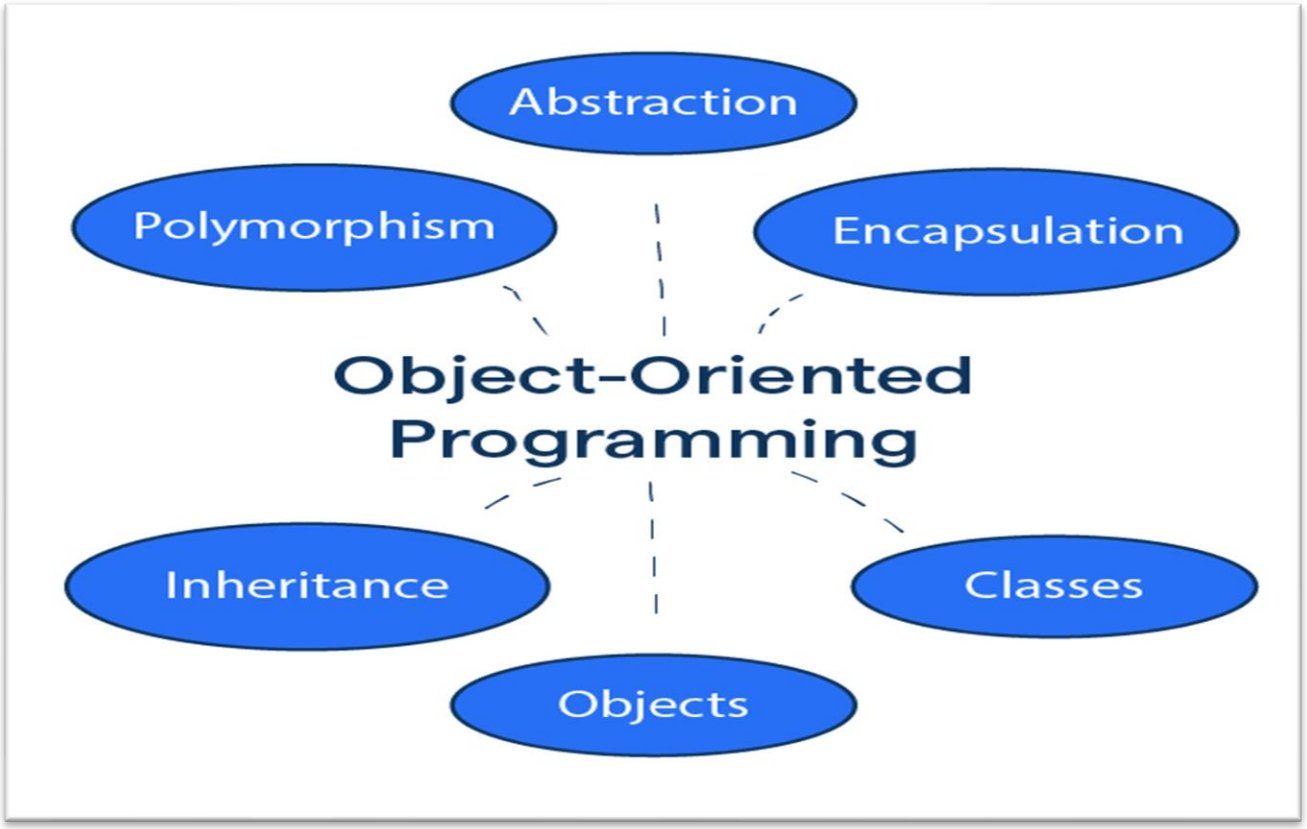
TEACHING AND LEARNING MATERIAL

SUBJECT: OBJECT ORIENTED METHODOLOGY
SEMESTER: 3RD

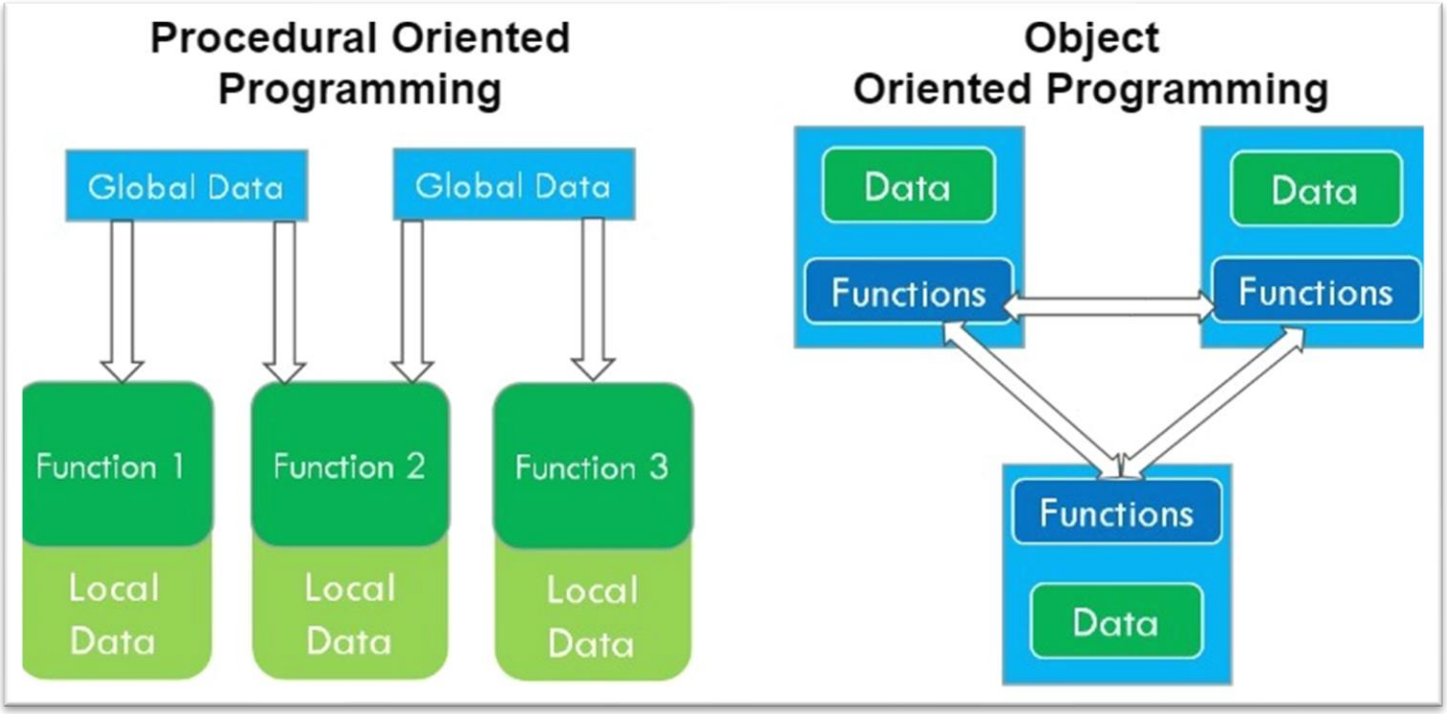
SUBMITTED BY:-ER.DEVI PRASAD MISHRA

CHAPTER-1

DIFFERENT TYPES OF OBJECTS ORIENTED CONCEPTS

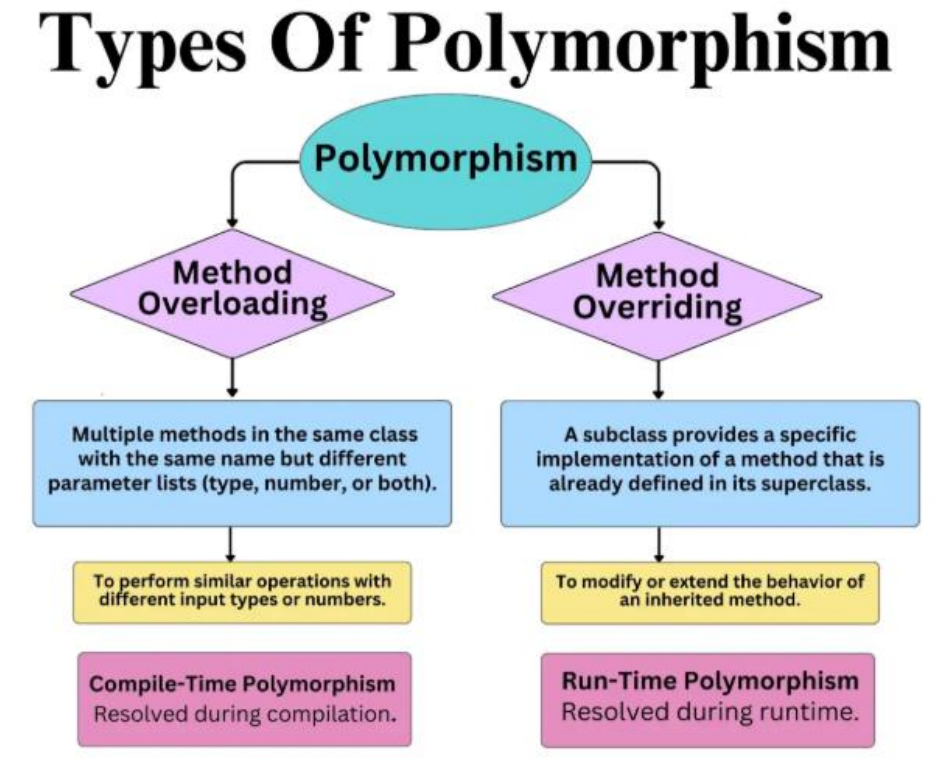


WHAT IS OBJECT ORIENTED PROGRAMMING-



DIFFERENCE BETWEEN OOPS IN JAVA & C++

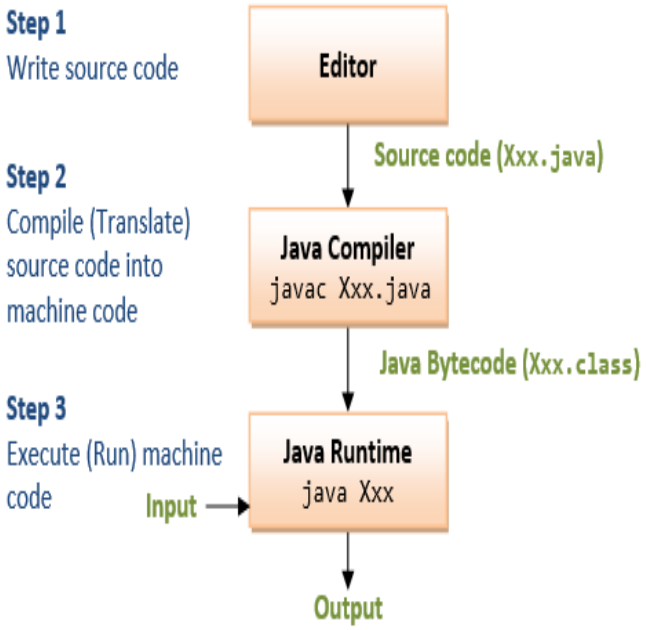
Java	C++
Java was developed by James Gosling at Sun Microsystems.	C++ was developed by Bjarne Stroustrup at Bell Labs in 1979 as an extension of the C language.
On May 23, 1995	In October 1985
Java SE 18 was released on 22 March 2022	C++20 released on 15th December 2020
oracle.com/java	isocpp.org
Java was Influenced by Ada 83, Pascal, C++, C#, etc. languages.	C++ was Influenced by Influenced by Ada, ALGOL 68, C, ML, Simula, Smalltalk, etc. languages.
Java was influenced to develop BeanShell, C#, Clojure, Groovy, Hack, J#, Kotlin, PHP, Python, Scala, etc. languages.	C++ was influenced to develop C99, Java, JS++, Lua, Perl, PHP, Python, Rust, Seed7, etc. languages.
Platform-independent, Java bytecode works on any operating system.	Platform dependent, should be compiled for different platforms.
It can run on any OS hence it is portable.	C++ is platform-dependent. Hence it is not portable.
Java is both Compiled and Interpreted Language.	C++ is a Compiled Language.
Memory Management is System Controlled.	Memory Management in C++ is Manual.

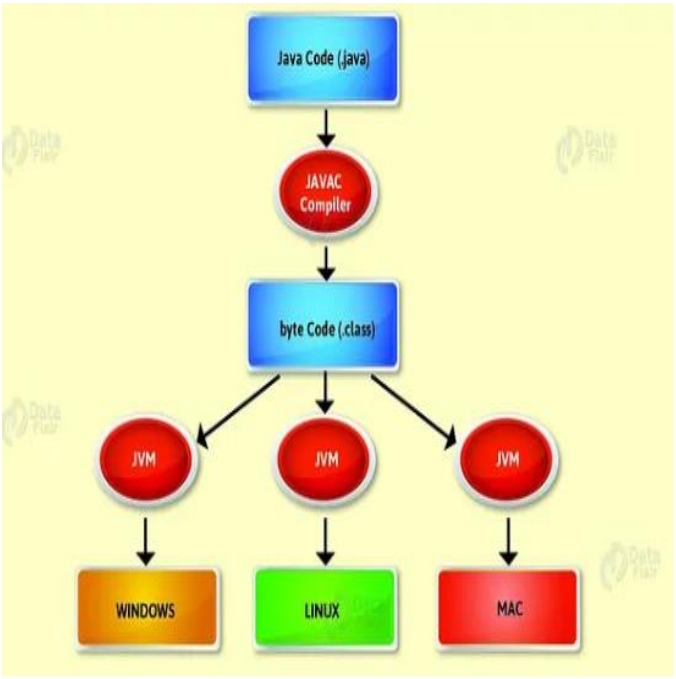


CHAPTER: -2

What is JAVA?

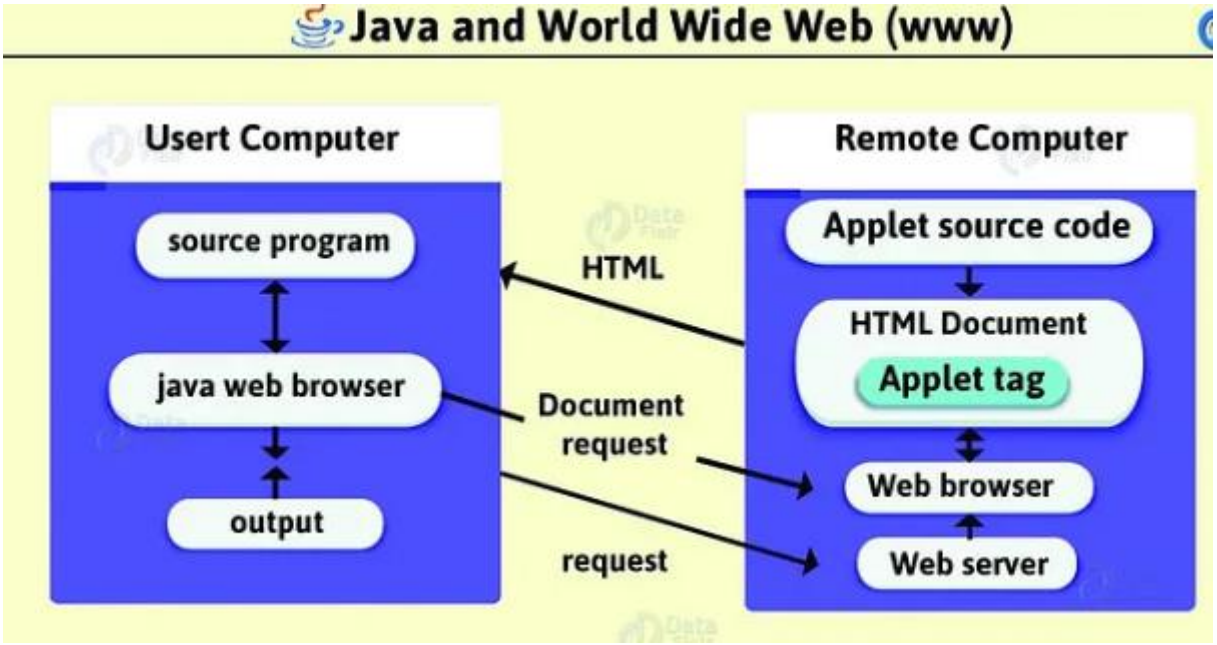
- Java is a **programming language** and a **platform**.
- Java is a high level, robust, secured and object-oriented programming language.
- **Platform**: Any hardware or software environment in which a program runs, is known as a platform. Since Java has its own runtime environment (JRE) and API, it is called platform.





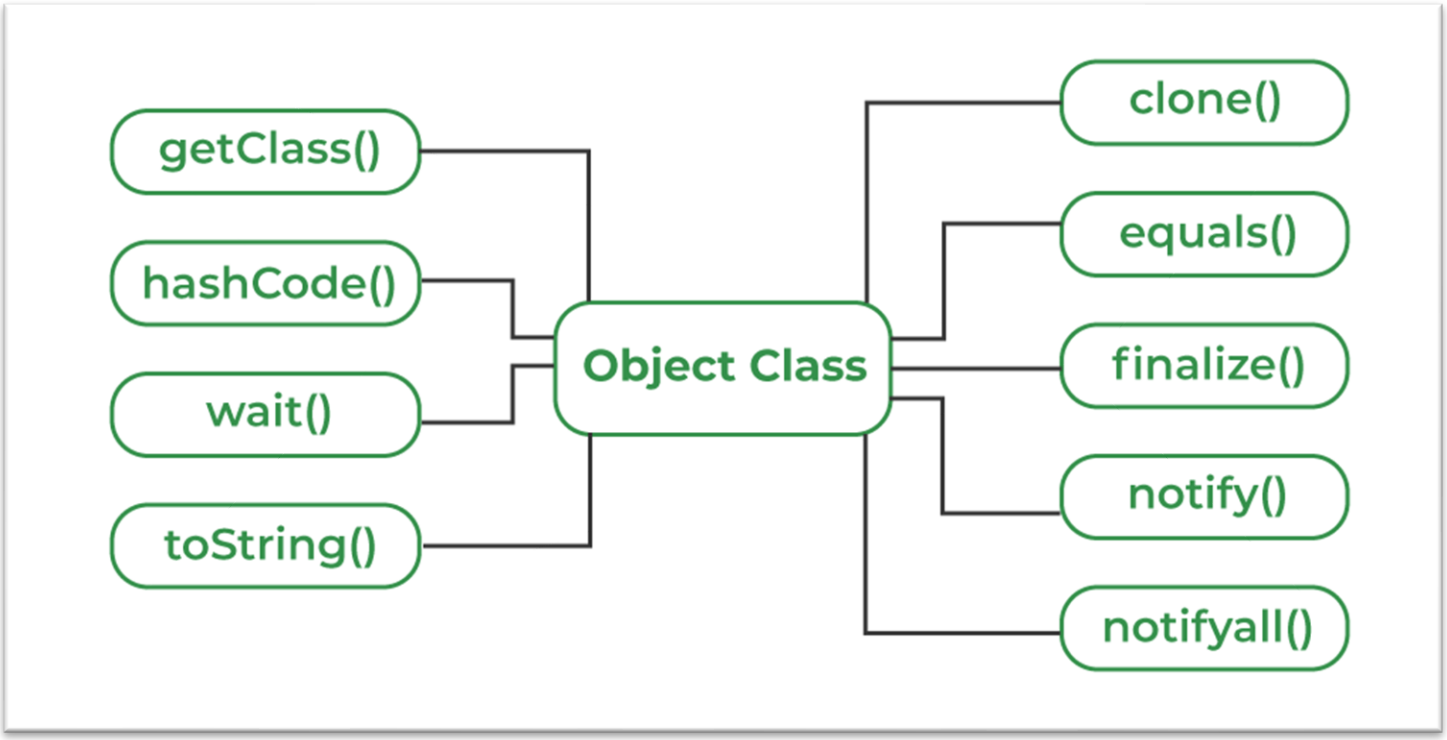
FEATURES OF JAVA PROGRAMMING

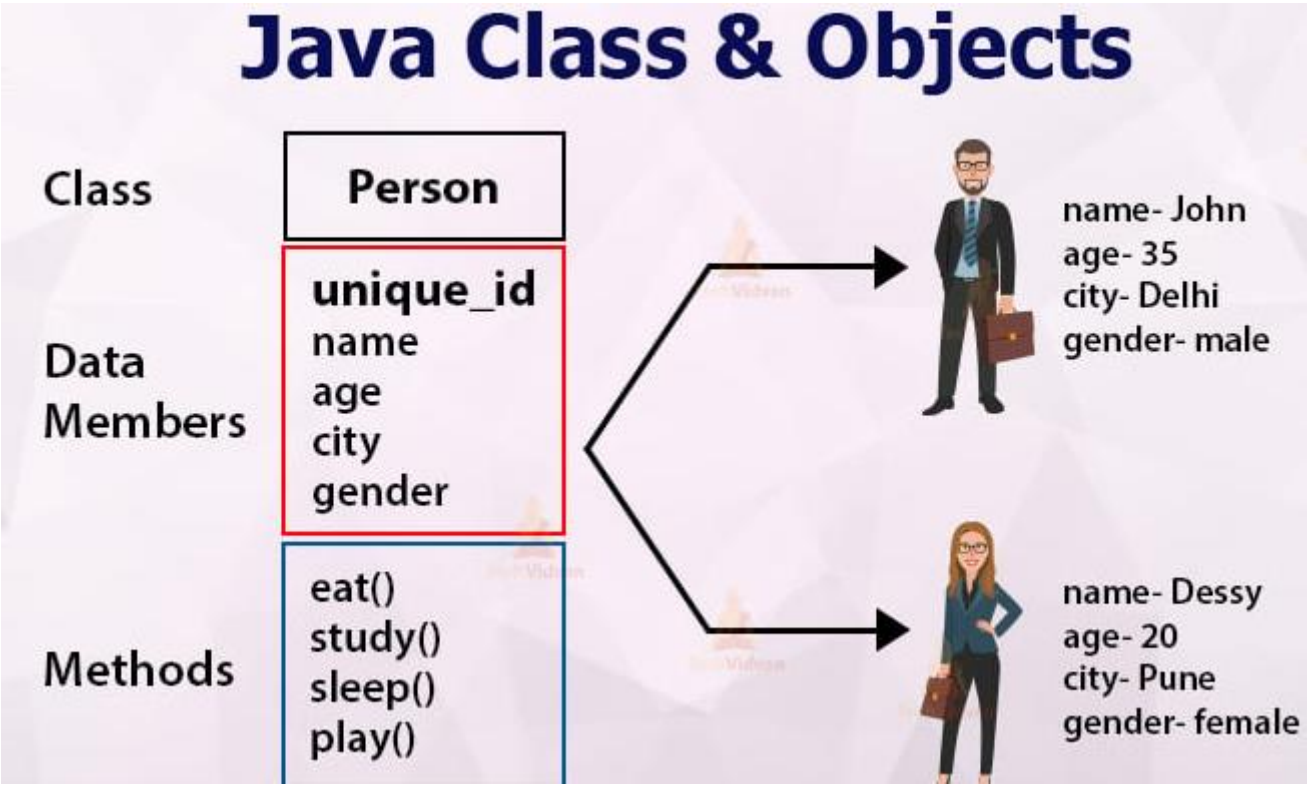
Java Programming and World Wide Web



CHAPTER:-3

OBJECT CLASS IN JAVA





Inheritance and polymorphism in Java

Inheritance and polymorphism are two core concepts in Object-Oriented Programming (OOP) in Java that are closely related and work together to enhance code reusability, flexibility, and extensibility.

DIFFERENCE BETWEEN INHERITANCE & POLYMORPHISM IN JAVA-

	INHERITANCE	POLYMORPHISM
1.	Inheritance is one in which a new class is created (derived class) that inherits the features from the already existing class (Base class).	Whereas polymorphism is that which can be defined in multiple forms.
2.	It is basically applied to classes.	Whereas it is basically applied to functions or methods.
3.	Inheritance supports the concept of reusability and reduces code length in object-oriented programming.	Polymorphism allows the object to decide which form of the function to implement at compile-time (overloading) as well as run-time (overriding).
4.	Inheritance can be single, hybrid, multiple, hierarchical and multilevel inheritance.	Whereas it can be compiled-time polymorphism (overload) as well as run-time polymorphism (overriding).
5.	It is used in pattern designing.	While it is also used in pattern designing.