Exploring Java: From Origins to OOP Principles

This presentation will delve into the world of Java, from its origins to its impact on modern software development, and explore the fundamentals of object-oriented programming (OOP).

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History of Java

Birth of Java

Created by James Gosling at Sun Microsystems in the early 1990s.

Initially called Oak, it aimed to be a platform-independent language for consumer electronics.

Evolution of Java

Java evolved to become a popular language for web development, enterprise applications, and mobile apps.

Sun Microsystems was later acquired by Oracle, which continues to maintain and develop Java.

Java's Impact on Software Development

1 Platform Independence

Java's "write once, run anywhere" nature made it a game-changer for software development.

2 Robust and Secure

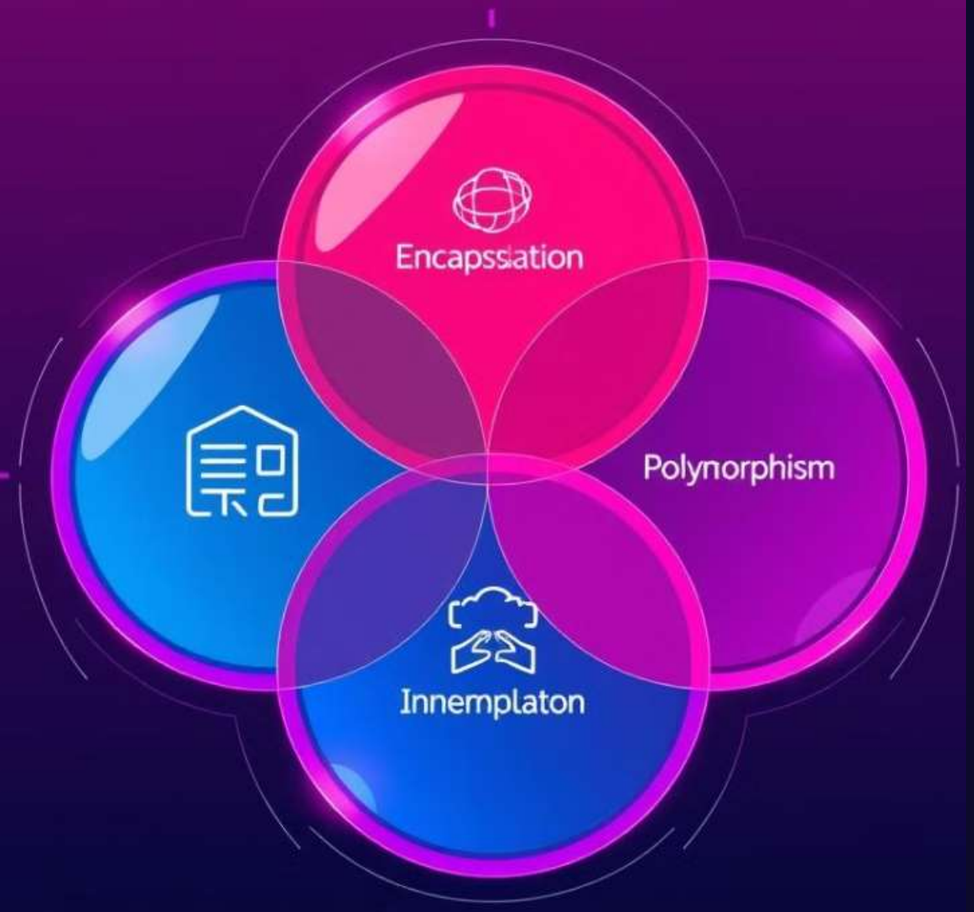
Java's strong typing and security features make it suitable for enterprise applications.

3 Rich Ecosystem

Java has a vast library of frameworks, tools, and libraries for various development needs.

4 Community Support

A large and active community provides support, resources, and continuous development.



Fundamental Concepts of Object-Oriented Programming (OOP)

Encapsulation

Bundling data and methods together to form objects.

Abstraction

Hiding complex implementation details to provide a simpler interface.

Inheritance

Creating new classes based on existing classes, promoting code reuse.

Polymorphism

Objects of different classes can be treated as objects of a common type.

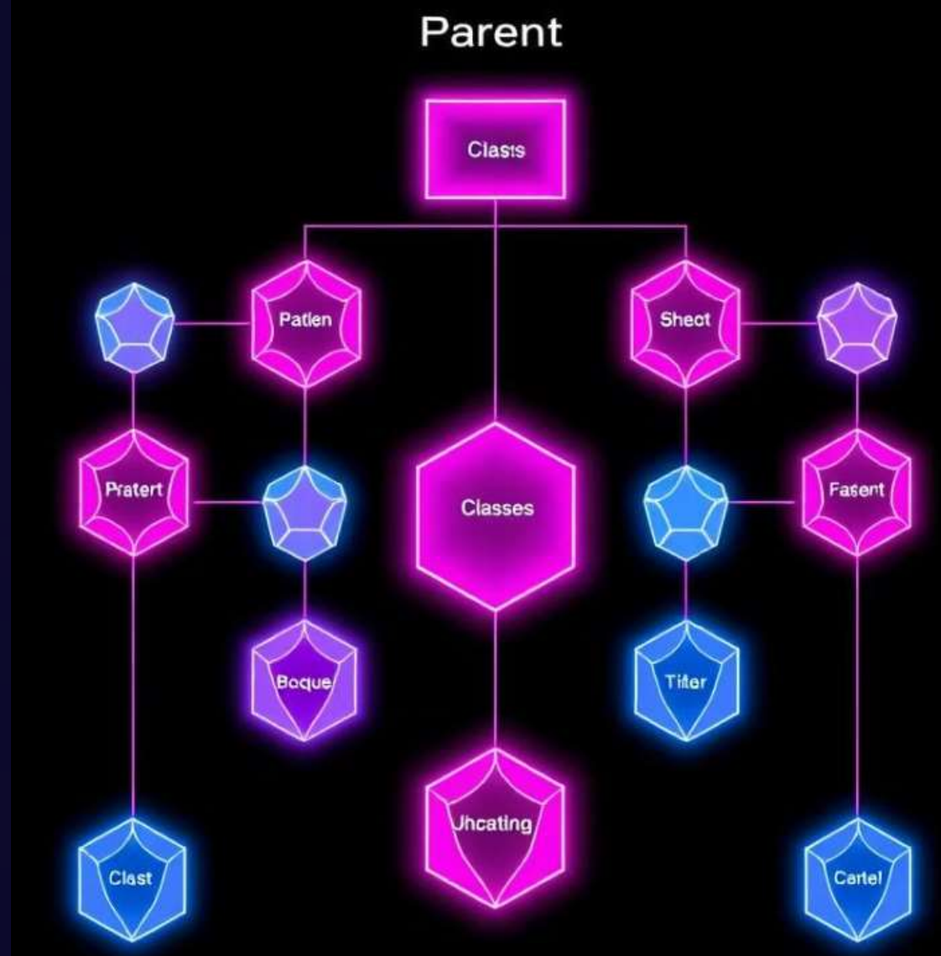
Inheritance and Polymorphism in Java

Inheritance

Child classes inherit properties and methods from their parent classes.

Polymorphism

Objects can take on different forms depending on their type.



Encapsulation and Abstraction in Java

Encapsulation

Data is hidden within objects and accessed through methods.

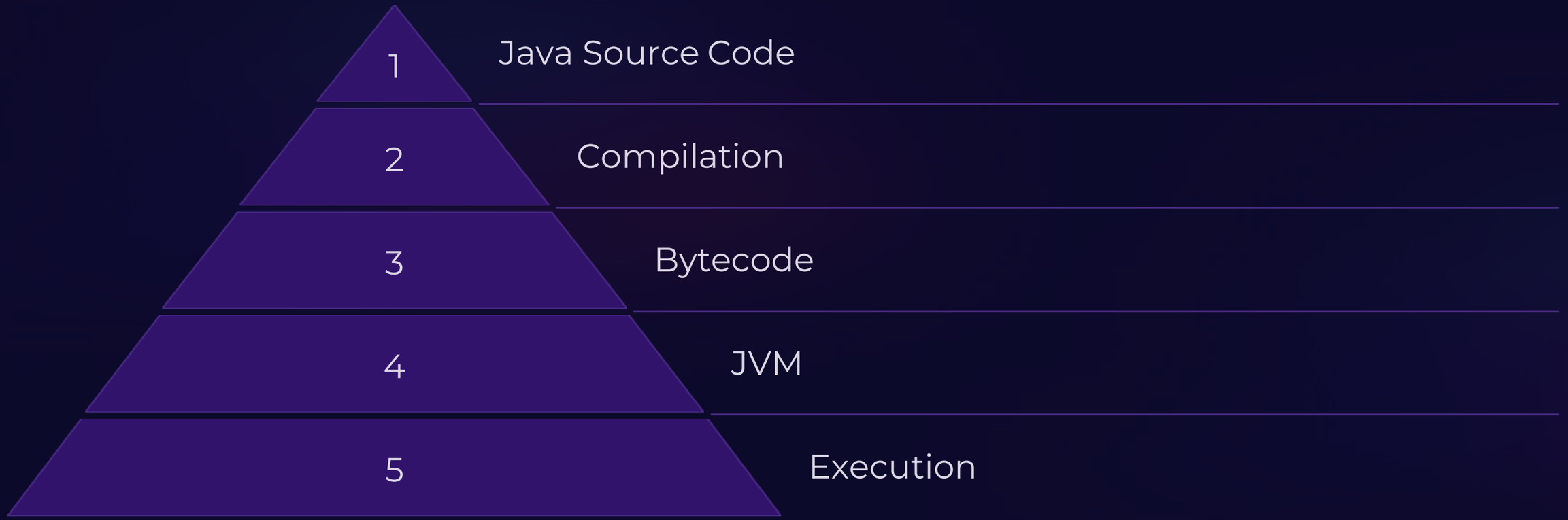
1

2

Abstraction

Simplifies complex operations by hiding implementation details.

Java's Execution Model and the JVM



Conclusion and Future Directions of Java

25

Years

Java has been a cornerstone of software development for over 25 years.

10M

Developers

Java has a vast community of over 10 million developers worldwide.

5M

Applications

Millions of applications rely on Java's reliability and performance.