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Introduction to Java

What is Java ?

- Java is a **high-level object-oriented programming language**.
- Development by Sun Microsystems.
- Follow principle WORA (WRITE ONCE, RUN EVERYWHERE).

Feature of Java

- **Object-oriented** - everything is based on classes & objects.
- **Platform Independent** – runs on any OS using JVM.
- **Robust** – strong memory management and exception handling
- **Multithreaded** – supports parallel execution.
- **Portable** – same code works across systems.

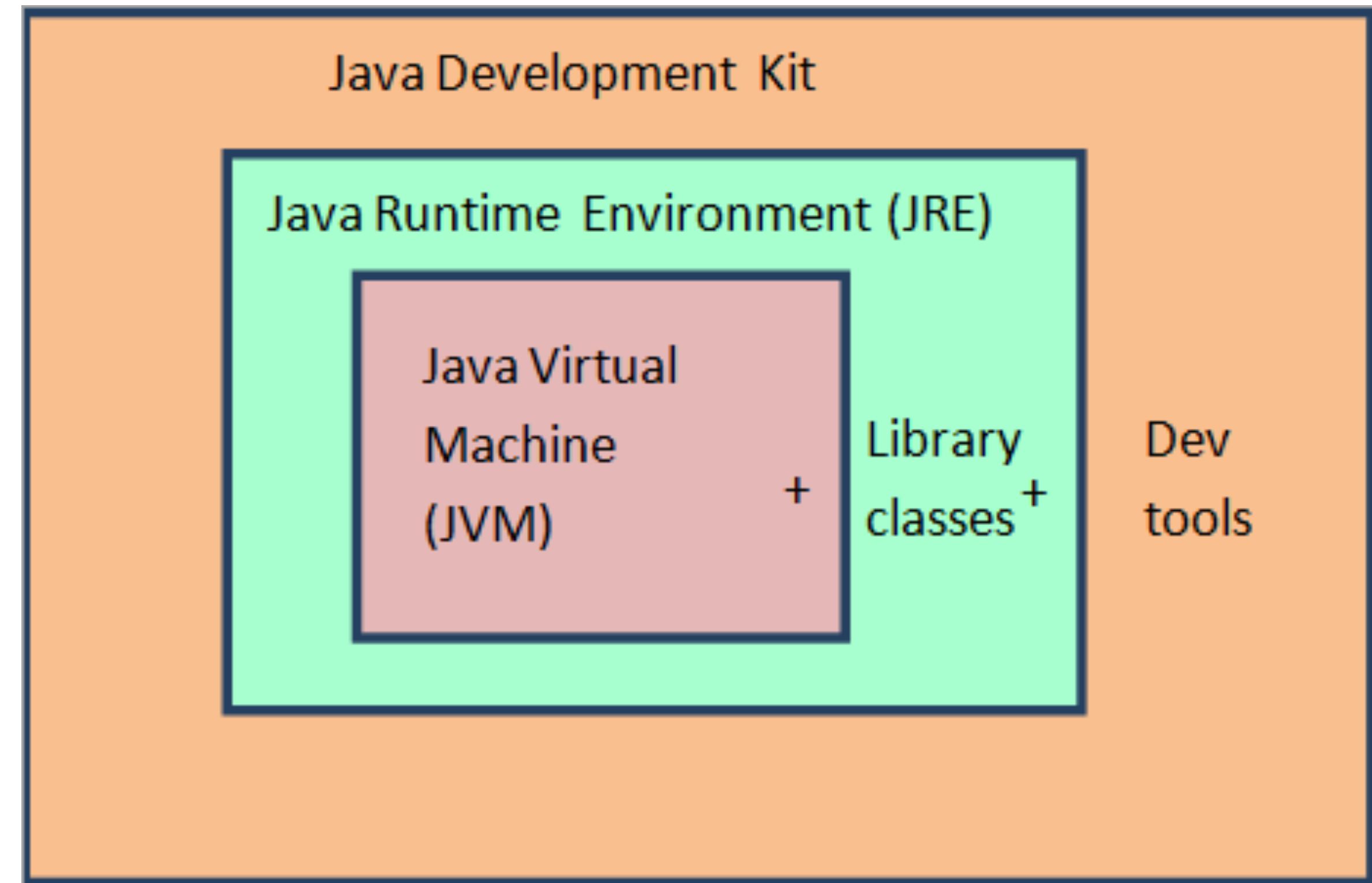
Where is Java Used?

- **E-Commerce & Retail** - Inventory & supply chain systems
- **Enterprise & Corporate Applications** - CRM ERP systems
- **Banking & Finance** - Core banking systems (CBS)
- **Big Data & Analytics** - Hadoop ecosystem components, ETL tools

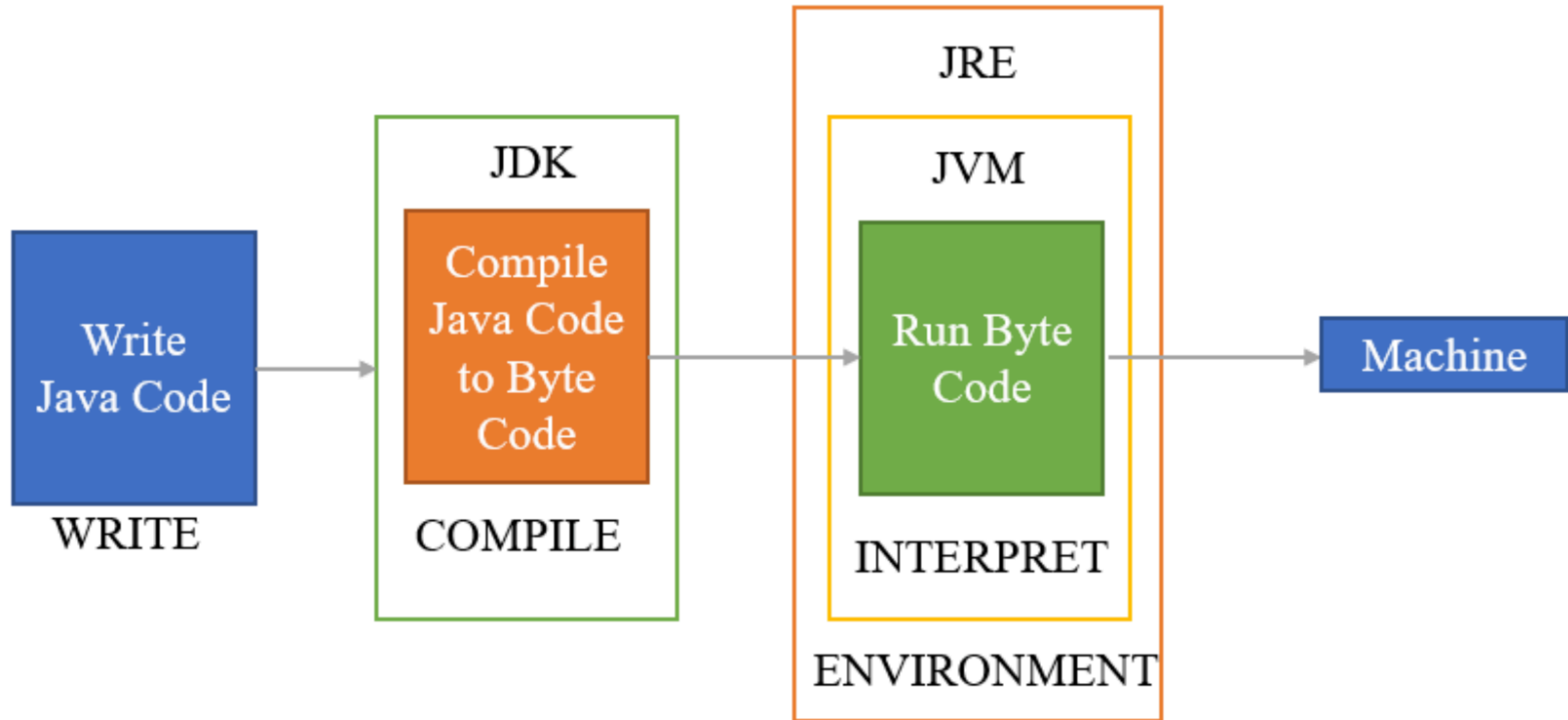
Java Overview

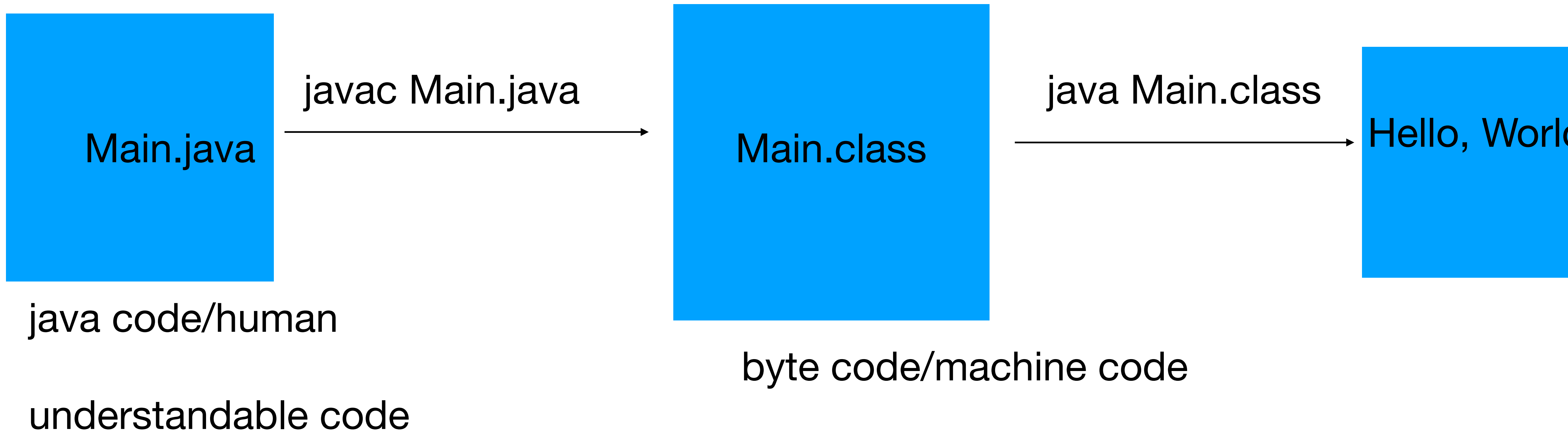
Java Component

- JDK (Java Development Kit)
- JRE (Java Runtime Environment)
- JVM (Java Virtual Machine)



Java Architecture





Java Installation

Links

- <https://www.oracle.com/in/java/technologies/javase/jdk11-archive-downloads.html>

Set Env Variable

- Add JAVA_HOME
 - [key] JAVA_HOME
 - [value] C:\Program Files\Java\jdk-21
- Add Java to PATH
 - %JAVA_HOME%\bin
- Verify version
 - java -version: checks runtime (JRE/JVM)
 - javac -version: checks compiler (JDK)

Setup IDE

Links


- <https://www.jetbrains.com/idea/download/?section=mac>
- Go to “IntelliJ IDEA Community Edition” and download

First Java Program



Code

java

 Copy

```
public class HelloWorld {  
    public static void main(String[] args) {  
        System.out.println("Hello, World!");  
    }  
}
```

How to Run

- Save file HelloWorld.java
- `javac HelloWorld.java`
- `java HelloWorld`

Folder Structure