



OOP using Java

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Java Text Books

- Java, The complete reference, Herbert Schildt
- Core and Advanced Java Black Book
- Head First Java: A Brain-Friendly Guide , by Kathy Sierra



Version History

Version	Date
JDK Beta	1995
JDK1.0	January 23, 1996 ^[39]
JDK 1.1	February 19, 1997
J2SE 1.2	December 8, 1998
J2SE 1.3	May 8, 2000
J2SE 1.4	February 6, 2002
J2SE 5.0	September 30, 2004
Java SE 6	December 11, 2006
Java SE 7	July 28, 2011
Java SE 8	March 18, 2014
Java SE 9	September 21, 2017
Java SE 10	March 20, 2018
Java SE 11	September 25, 2018 ^[40]
Java SE 12	March 19, 2019
Java SE 13	September 17, 2019
Java SE 14	March 17, 2020
Java SE 15	September 15, 2020 ^[41]
Java SE 16	March 16, 2021

- The first version was released on January 23, 1996.
- The acquisition of Sun Microsystems by Oracle Corporation was completed on January 27, 2010
- As of September 2020, Java 8 and 11 are supported as Long Term Support (LTS) versions
- In September 2017, Mark Reinhold, chief Architect of the Java Platform, proposed to change the release train to "one feature release every six months".
- OpenJDK (Open Java Development Kit) is a free and open source implementation of the (Java SE). It is the result of an effort Sun Microsystems began in 2006.
- Java Language and Virtual Machine Specifications: <https://docs.oracle.com/javase/specs/>



SDK, JDK, JRE, JVM

- **SDK** = Development Tools + Documentation + Libraries + Runtime Environment.
- **JDK** = Java Development Tools + Java Docs + **rt.jar** + **JVM**.
 - JDK : Java Development Kit.
 - It is a software, that need to be install on developers machine.
 - We can download it from oracle official website.
- **JRE**[**rt.jar** + **JVM**].
 - JRE : Java Runtime Environment.
 - rt.jar and JVM are integrated part of JRE.
 - JRE is a software which comes with JDK. We can also download it separately.
 - To deploy application, we should install it on client's machine.
 - rt.jar file contains core Java API in **compiled form**.
- **JVM** : An engine, which manages execution of Java application. (also called as Execution Engine)



- **Java Development Kit (JDK)**

1. Java Developmet Tools

- a. Javac
- b. Java
- c. Javap
- d. jar
- e. Jarsigner

2. Java RunTime Environment (JRE)

- I. Java API library

- a. Bundled package classes
- b. Jre/lib/rt.jar

- II. Java Virtual Machine (JVM)

- a. Load and Execute java application



Simple Hello Application using command line

```
//File Name : Program.java
class Program{
    public static void main(String[] args) {
        System.out.println("Hello World");
    }
}
```

```
Compilation=> javac Program.java //Output : Program.class
Execution=>    java Program
```

```
System      : Final class declared in java.lang package
out         : public static final field of System class. Type of out is PrintStream
println     : Non static method of java.io.PrintStream class
```

To view class File :

javap -c Program.class

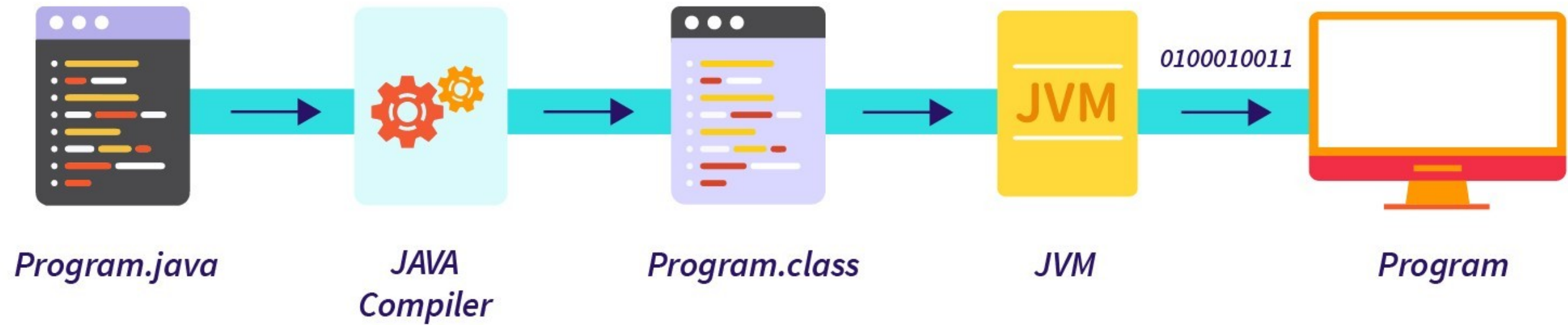


Using STS

- Open the STS and chose the workspace where you want to store the projects
- Change the perspective to java
- Create a new java project by giving the proper name
- Create a new file named 'Program.java' inside src folder.
- The class will be automatically created.
- Write the entry point function main inside your class and write the hello world program.
- Execute the code.



Flow of Execution



Java Buzzwords

1. Simple
2. Object Oriented
3. Architecture Neutral
4. Portable
5. Robust
6. Multithreaded
7. Dynamic
8. Secure
9. High Performance
10. Distributed
11. Compiled and Interpreted





Thank you!

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