



# Java in the Enterprise world

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# Agenda

## Introduction

- What is Java?

- What is JVM?

- Area of use

## Java ecosystem

- JavaEE and application servers

- Libraries

- Frameworks

- Tools

- Community

## Current state



# Introduction

## What is Java?

- Objective programming language
- First release in 1996
- Current version JDK 12
- Runtime environment - Java Virtual Machine (JVM)
- Backward compatible
- Distributions
  - JavaSE
  - J2E, JavaEE, Jakarta EE

# Introduction

## Java over the years

Version	Release date	End of Free Public Updates <sup>[5][6]</sup>	Extended Support Until
JDK Beta	1995	?	?
JDK 1.0	January 1996	?	?
JDK 1.1	February 1997	?	?
J2SE 1.2	December 1998	?	?
J2SE 1.3	May 2000	?	?
J2SE 1.4	February 2002	October 2008	February 2013
J2SE 5.0	September 2004	November 2009	April 2015
Java SE 6	December 2006	April 2013	December 2018
Java SE 7	July 2011	April 2015	July 2022
Java SE 8 (LTS)	March 2014	January 2019 for Oracle (commercial) December 2020 for Oracle (personal use) At least September 2023 for AdoptOpenJDK	March 2025
Java SE 9	September 2017	March 2018 for OpenJDK	N/A
Java SE 10	March 2018	September 2018 for OpenJDK	N/A
Java SE 11 (LTS)	September 2018	At least September 2022 for AdoptOpenJDK	September 2026
Java SE 12	March 2019	September 2019 for OpenJDK	N/A
Legend: <span style="color: #f08080;">■</span> Old version <span style="color: #ffff00;">■</span> Older version, still supported <span style="color: #90ee90;">■</span> Latest version			

JavaSE

Version	Date
J2EE 1.2	December 1999
J2EE 1.3	September 2001
J2EE 1.4	November 2003
Java EE 5	May 2006
Java EE 6	December 2009
Java EE 7	April 2013
Java EE 8	August 2017
Jakarta EE	February 2018*

JavaEE

# Introduction

## What is JVM?

- Computer program
- Described by specification - The Java® Virtual Machine Specification
- Different implementations: m.in. HotSpot, OpenJDK, AdoptOpenJDK, Corretto, GraalVM
- Uses bytecode as set of instructions
- Runtime environment for among others: Java, Groovy, Kotlin, Scala

# Introduction

## Area of use

- Rich domain
- Multithreading
- Data migration
- Data streaming
- Mobile apps
- Computer games
- Internet of Things

# Java ecosystem

## JavaEE and application server

- Set of API
  - Servlet
  - JAX-RS
  - JAX-WS
  - JAXB
  - EJB
  - JPA
  - CDI
  - And many others
- The application runs and executes on application servers
- Outdated technology, still used

# Java ecosystem

## Application containers - examples

- GlassFish
- WebLogic
- WildFly
- JBoss



# Java ecosystem

## Libraries

- A large database of libraries addressing many problems
- OpenSource
- User-friendly licenses
- Easy to start with by using dependency management tools

# Java ecosystem

## Libraries - examples

- Apache commons
- Open CSV
- JOOQ
- Failsafe
- Hystrix
- Ratpack
- Eureka
- Vavr
- OkHttp
- Retrofit
- Jackson
- Guava
- SLF4J
- Logback
- Deeplearning4j
- RxJava2
- Spock
- JUnit

... and many others

# Java ecosystem

## Frameworks

- Configurable application platform
- Set of ready-to-go functionalities
- High coupling
- Frequently uses controls via annotations

# Java ecosystem

## Frameworks - examples

- Spring
- Play!
- Vaadin
- Vert.x
- Apache Spark
- Hibernate

# Java ecosystem

## Tools

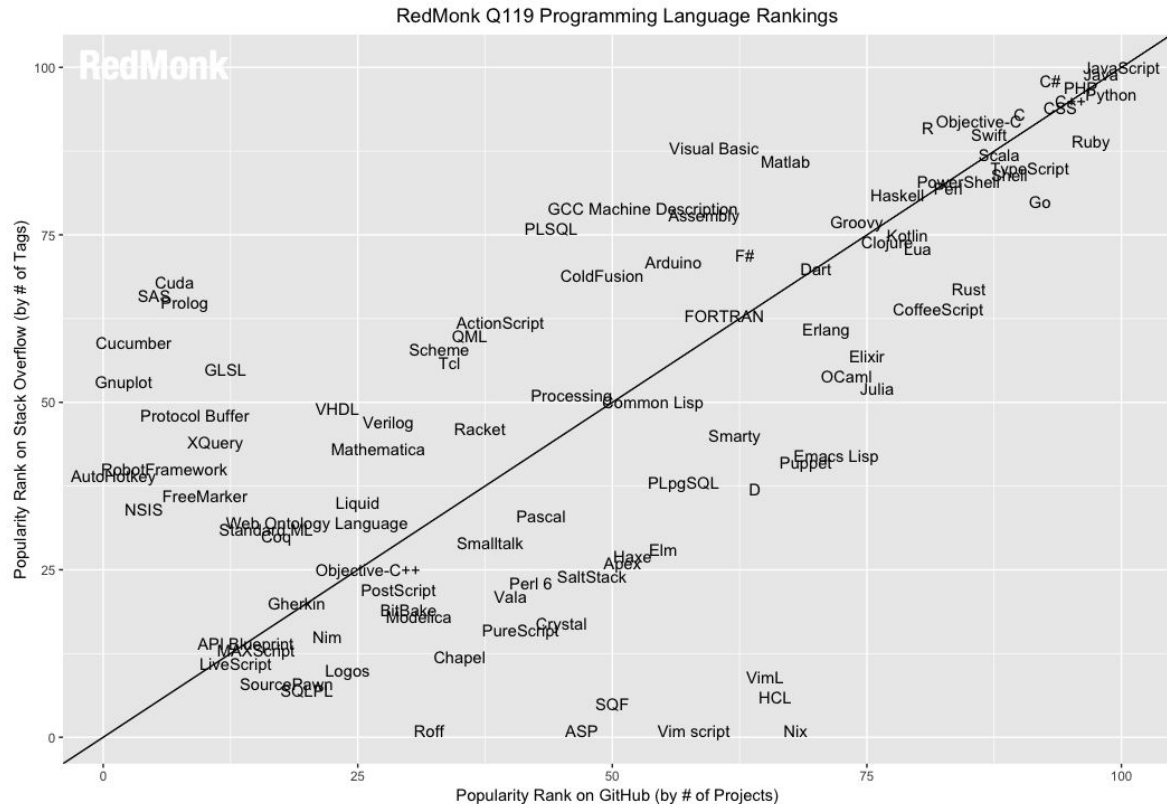
- Dependency management
  - Maven
  - Gradle
- IDE
  - IntelliJ IDEA
  - Eclipse
  - NetBeans

# Java ecosystem

## Community

- JDK Enhancement Proposal (JEP)
- Java User Groups
- Conferences
  - Confitura
  - GeeCon
  - Devovx
- .... Stackoverflow ;)

# Current state

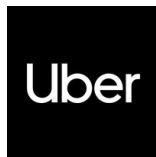


## Current state

### Companies using JVM-based solutions



allegro





# Summary

## Factors that influenced the popularity of Java

- Simple syntax
- JVM as an efficient environment
- Versatility of available libraries and frameworks
- Available tools, peripherals
- Integration with existing solutions
- Community

# Sources

[https://en.wikipedia.org/wiki/Java\\_version\\_history](https://en.wikipedia.org/wiki/Java_version_history)

<https://www.baeldung.com/java-enterprise-evolution>

<https://github.com/akullpp/awesome-java>

<https://stackshare.io/java>

<https://redmonk.com/sogrady/2019/03/20/language-rankings-1-19/>

# Q & A

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