

JVM.Languages.Compare ({Java, Kotlin, Groovy, Scala});

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About the Speakers

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About the Speakers

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About the Speakers

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Project leader at Eclipse Collections

Mechanical Engineer and Software Developer

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The Java Virtual Machine

What is the Java Virtual Machine?

- Cornerstone of Java technology
- Abstract computing machine
- First prototype was hosted by a handheld device
- Is tightly linked to but knows nothing about Java language!

Java & Virtual Machine (relevant) evolution

- 1997 – First version
- 1999 – Second version
- 2005 – Java 5 brought Generics
- 2011 – Java VM 7 brought invokedynamic with JSR292
- 2014 – Java 8 brought Lambdas
- 2018 – Java 10 brought “var” (Local Variable Type)

Java Virtual Machine Languages

Java Virtual Machine Languages

- Clojure, a functional Lisp dialect with focus on simplicity and concurrency
- **Apache Groovy, a dynamic programming and scripting language**
- JRuby, an implementation of Ruby
- Jython, an implementation of Python
- **Kotlin, a statically-typed language from JetBrains, the developers of IntelliJ IDEA**
- **Scala, a statically-typed object-oriented and functional programming language**

Apache Groovy

- Created in 2007 by Pivotal, moved to Apache in 2015
- Version 2 (2012) onwards can be compiled statically
- Syntax can be very similar to Java
- Added functionalities:
 - closures and builders,
 - runtime & compile-time meta-programming,
 - string interpolation/templates,
 - functional programming,
 - type inference, and
 - static and dynamic typing

Kotlin

- 1.0 released in 2016 by JetBrains (creators of IntelliJ IDE)
- Syntax is **NOT** similar to Java
- Added functionalities:
 - coroutines,
 - string interpolation / templates
 - functional programming,
 - strict null checks
 - **aggressive** type inference, and
 - static compilation to **JavaScript** and **Android** as well

Scala

- Created in 2001 at the École Polytechnique Fédérale de Lausanne (EPFL)
- Released to public in 2004, version 2 in 2006
- Very strong in functional programming since inception
- Added functionalities:
 - currying, type inference,
 - immutability,
 - lazy evaluation, pattern matching
 - operator overloading, optional parameters, named parameters,
 - raw strings

Compare (Java, Kotlin, Groovy, Scala);

? & !

Thanks!