Kotlin Structure

Kotlin

- runs on Java Virtual Machine.
- is an evolution of the Java syntax but is more concise and has cleaner syntax.
- is not syntax compatible with Java; but is interoperable with Java.
- relies on some Java Class Libraries e.g. Collections framework.
- is a statically-typed programming language.
- offers null safety.

Based on : https://en.wikipedia.org/wiki/Kotlin_(programming_language)

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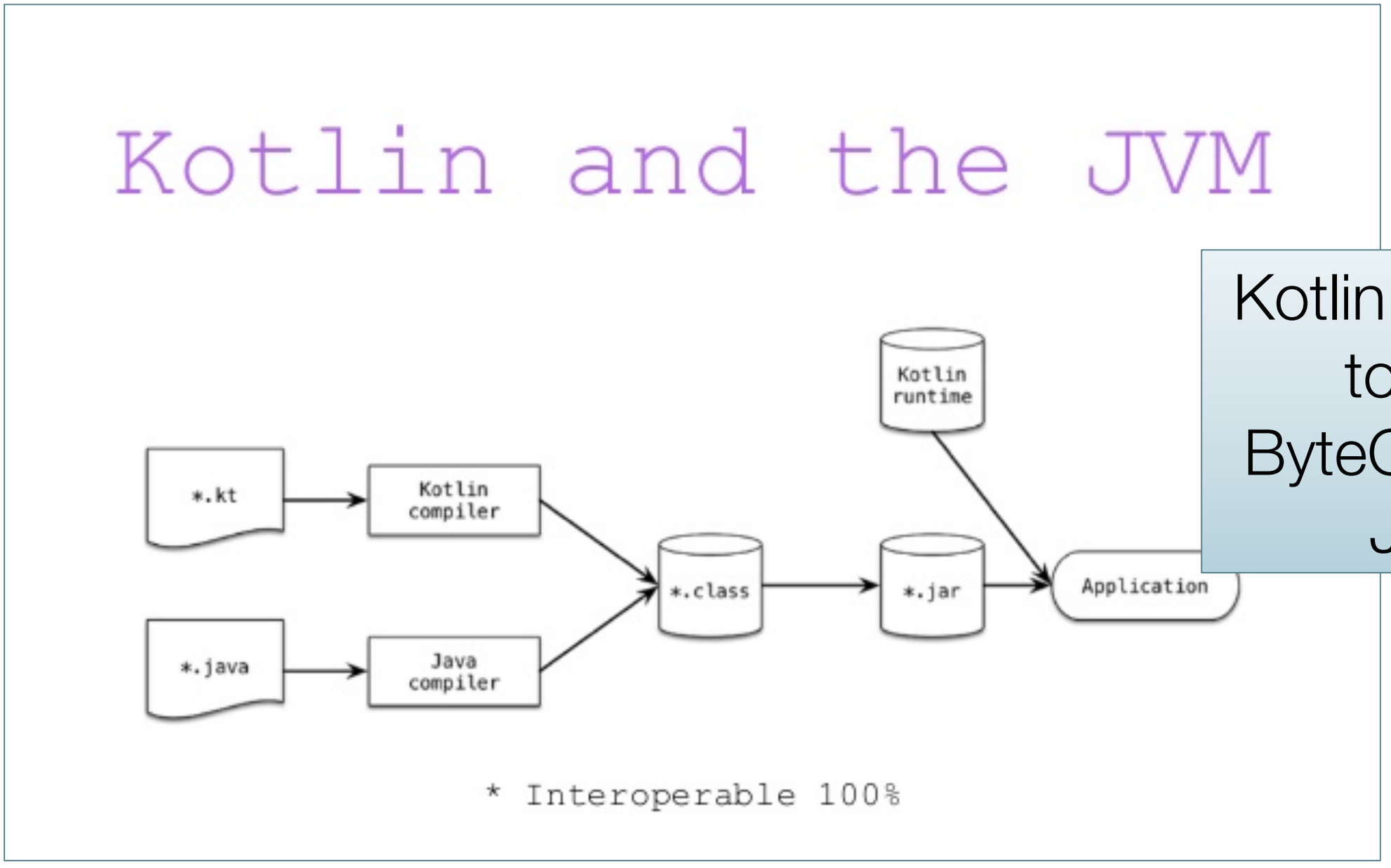
Runs on Java Virtual Machine



Kotlin compiles to JVM ByteCode (like Java)

Note: Kotlin also compiles to JavaScript

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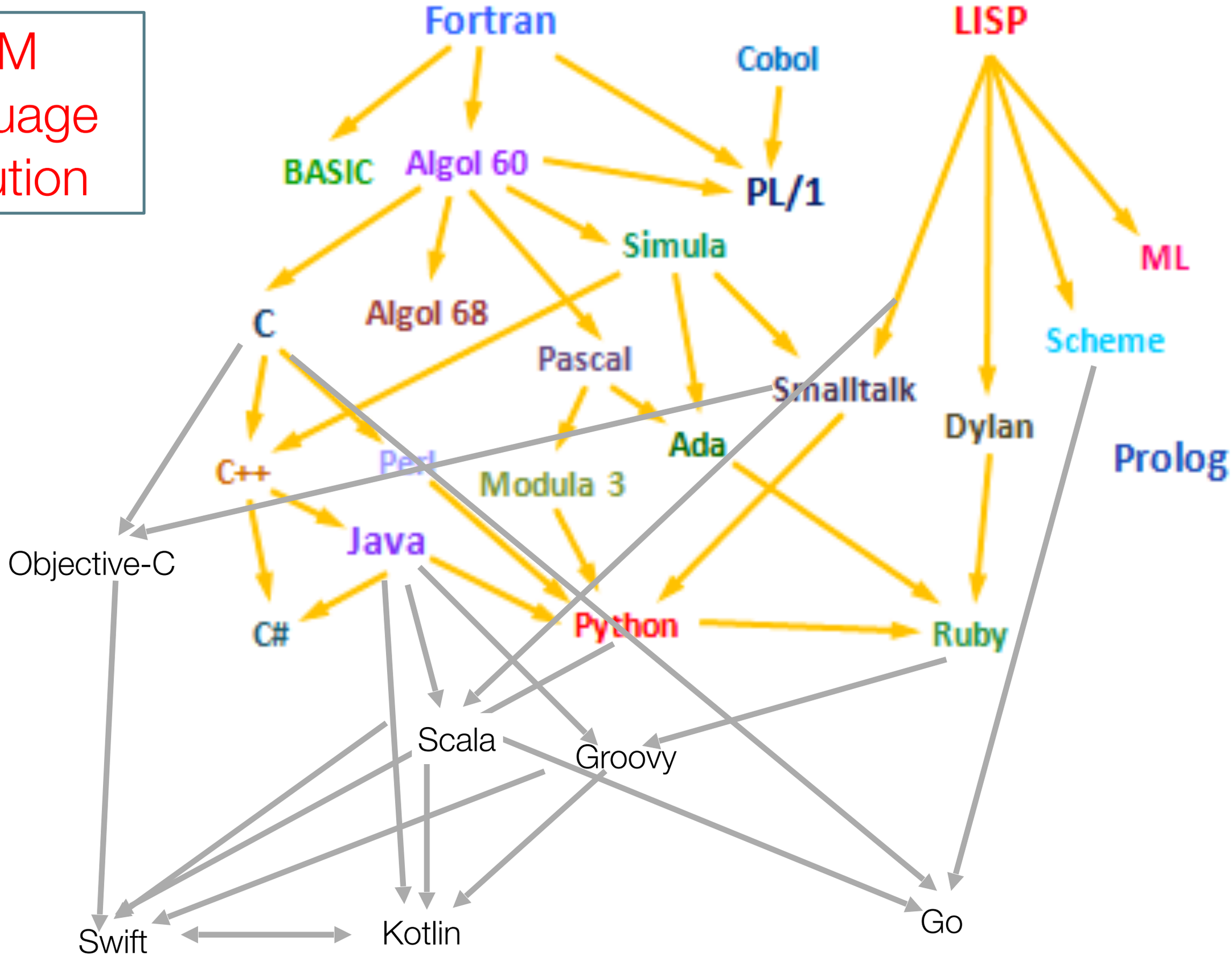
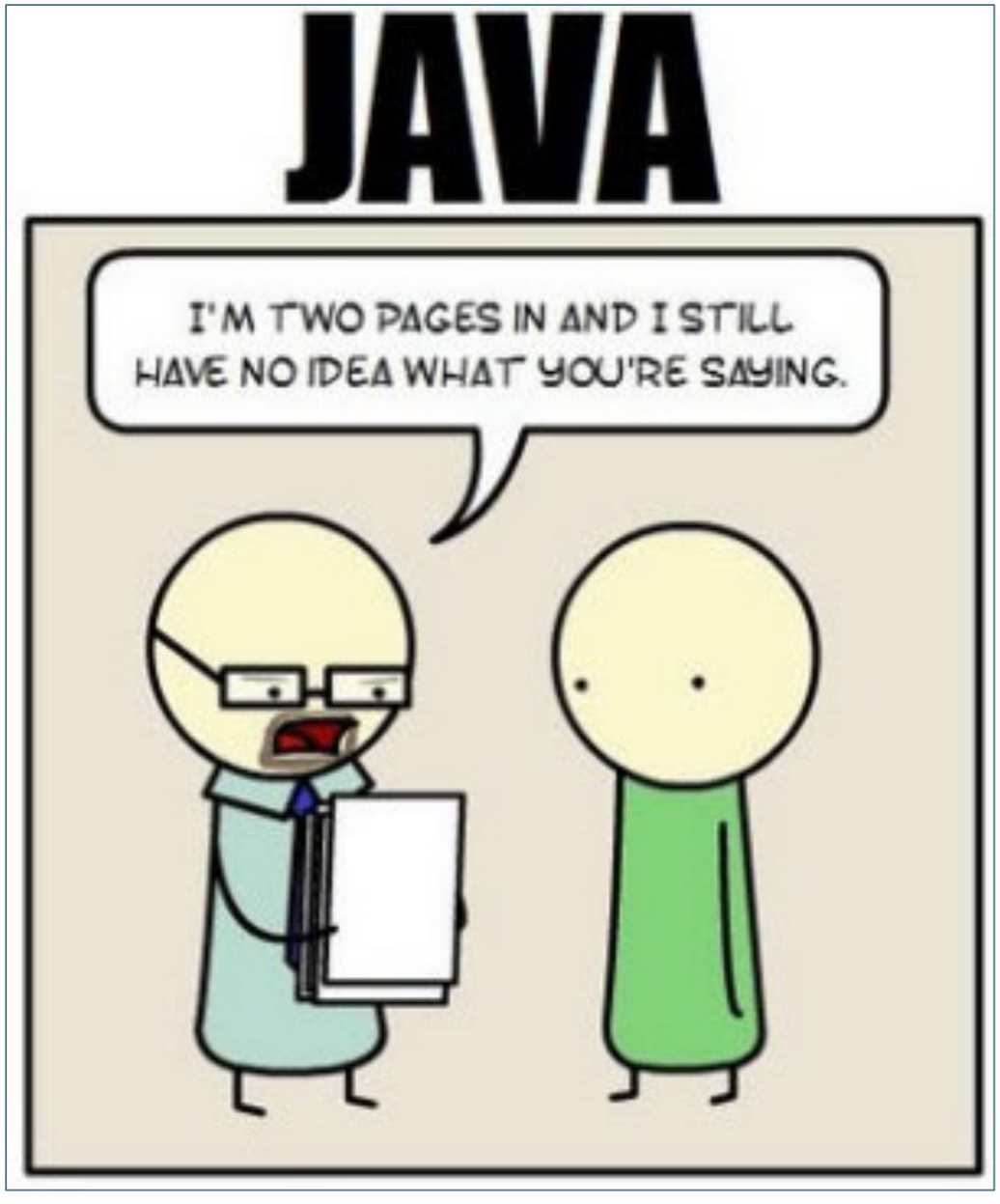
JVM Language Evolution



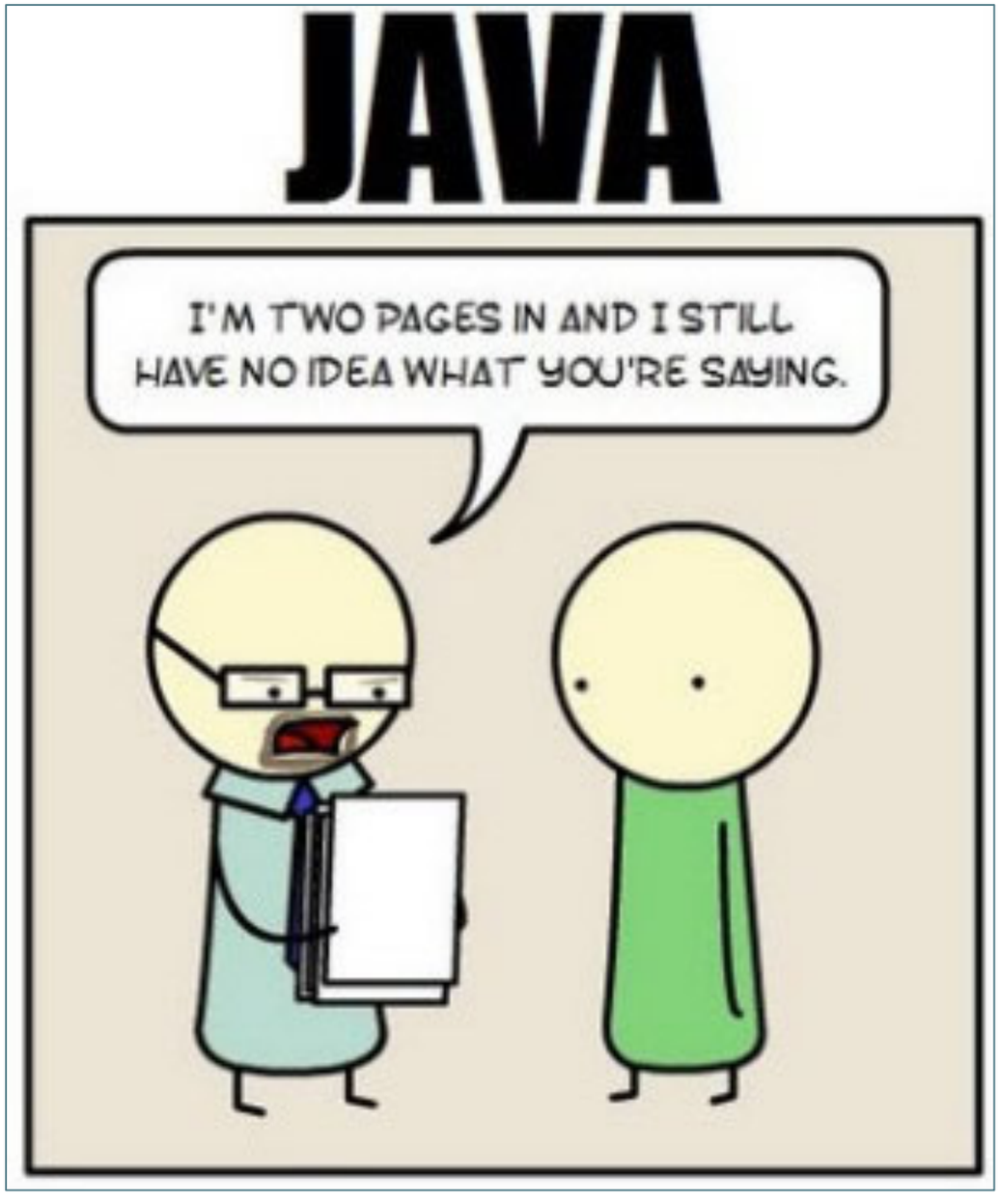
Kotlin (Concise) Vs Java (Overly Verbose)



"Java is extremely verbose and ceremonious. Programmers need to write reams of code to get a simple task done. There's a great deal of 'ceremony' in Java APIs, and Android aggravates this by forcing developers to go through many steps, in a specific order, to get things done."

Source: https://dzone.com/articles/why-you-should-consider-kotlin-for-android-develop?fromrel=true

Kotlin (Concise) Vs Java (Overly Verbose)



"Java code is verbose…"

"Kotlin provides a well thought-out syntax and extensive standard library that removes many of the pain points that exist in Java."

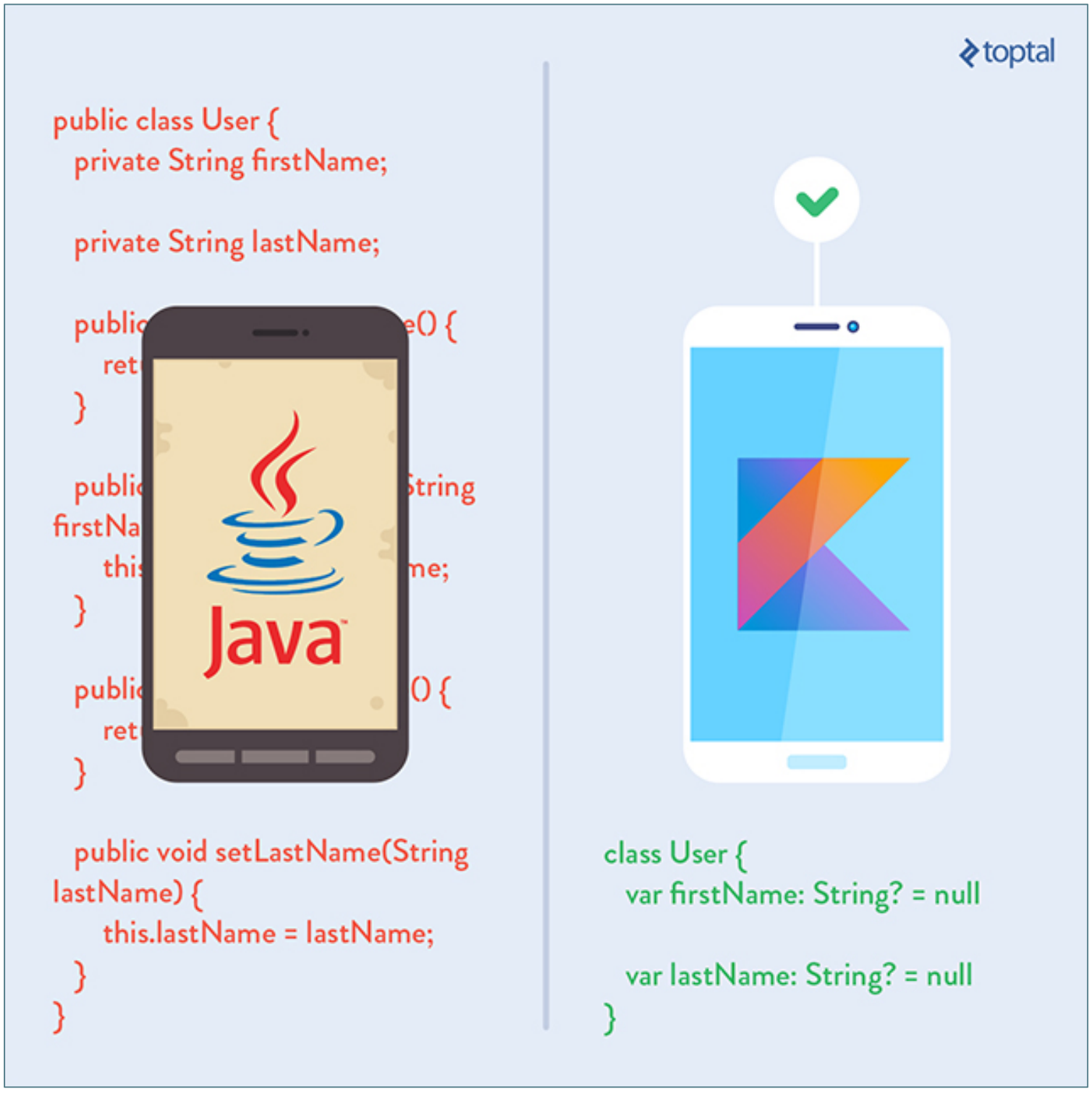
Source: https://medium.com/keepsafe-engineering/lessons-from-converting-an-app-to-100-kotlin-68984a05dcb6

Kotlin (Concise) Vs Java (Overly Verbose)

Rough estimates indicate approximately a 40% cut in the number of lines of code.

https://kotlinlang.org/docs/reference/faq.html

Kotlin (Concise) Vs Java (Overly Verbose)



Koltin drastically reduces the amount of boilerplate code you have to write.

The less code you write, the fewer mistakes you make, the less to test, the better the execution.

Easy(ish) learning curve for Java Developers

“Kotlin is approachable and can be acquired in a few hours by simply reading the language reference. It has a lean and intuitive syntax.”

“Kotlin is also designed to have a gentle learning path for Java developers. Java programmers will find that most of the Kotlin syntax feels familiar.”

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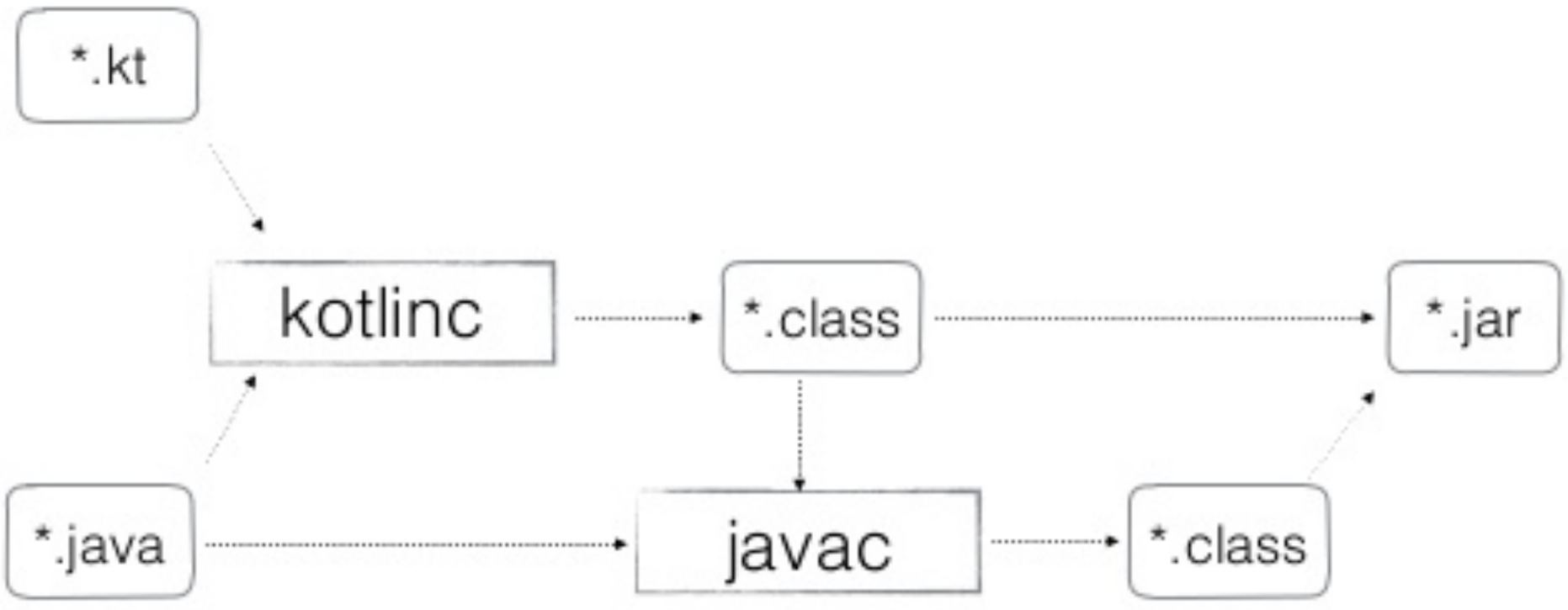
Kotlin / Java Interoperability

Compilation of a mixed project



Kotlin / Java Interoperability

- Kotlin and Java are 100% interoperable; Java and Kotlin code can co-exist very well in the same project and compile perfectly.

- Kotlin can be called from Java and Java from Kotlin.

- Both .java and .kt files are compiled to .class bytecode.

- When a project containing both Java and Kotlin is compiled, it would be difficult to tell which parts were created in Java and which in Kotlin.

- You can start using Kotlin in an existing Java project, without having to convert the project to Kotlin.

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Kotlin and the Java Class Libraries

Interoperability advantages:

- you can use any of the vast number of Java Libraries and Frameworks in a Kotlin project.

- Kotlin can also easily integrate with Maven, Gradle and other build systems.

https://dzone.com/articles/why-you-should-consider-kotlin-for-android-develop?fromrel=true
https://www.xenonstack.com/blog/overview-of-kotlin-comparison-between-kotlin-java

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