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Kotlin

What, why, how?

Version 1.0

September 2018

A person with glasses and a dark t-shirt featuring a geometric logo is seated at a table, gesturing with their hands while speaking to two other people whose backs are to the camera. The scene is dimly lit, with a blue tint. Two horizontal teal lines are positioned above and below the main text.

**“Statically typed programming language
for modern multiplatform applications”**

Agenda

- Introduction to “Java 2.0”
- Make the right thing the easy thing
- A story about a little app



A group of people in a workshop setting. One person is standing and pointing at a wall covered in sticky notes. Several other people are sitting on stools, looking towards the speaker. The scene is dimly lit with a blue tint.

Java 2.0

What is Kotlin?

“Java 2.0”

- Compiles to JVM 6 / 8 bytecode, x86, and JS
- 100% interop with Java
- Feels like a modern language (reified generics, properties, extension methods, etc)
- Lessons learned from decades of Java
- Excellent tooling from JetBrains

Java Interop

Calling Java code from Kotlin

- Getters / Setters are translated into properties
- Operator overloading based on sensible conventions
- `src/main/kotlin` vs `src/main/java`
- `@Nullable` annotations are enforced

Calling Kotlin code from Java

- Properties become getters / setters
- Overloaded operators become method calls
- `@JvmXXX(...)` annotations to override default translation naming

Modern Language Features

Developer productivity AKA fun!

- Extension methods make for an extensive standard library on top of built-in java without subclassing
- Reified generics enable clean reflection-based apis
- Operator overloading makes the syntax lightweight
- Checked nullability prevents NullPointerExceptions

Best Practices

Effective Kotlin is shorter than Effective Java

- <https://blog.kotlin-academy.com/> has a series on Effective Java items which you no longer need to worry about
- Many common Java patterns simply require *less code*.
- More in the little app later

Tools

IntelliJ IDEA is the best kotlin IDE (duh)

- ~90% automatic conversion from Java to Kotlin
- Just a few lines in gradle to get started
- Auto converter recognizes common patterns and chooses best kotlin alternative
- Intentions gently nudge you towards the official style guide
- Deep integration with Java Spring just like Java

A group of people in a workshop setting. A man on the left is pointing at a wall covered in papers. A group of people is seated in the center, and another man is standing on the right. The image has a dark blue overlay.

Make it easy to do the right thing

The background of the slide is a teal-colored overlay of a photograph of the Golden Gate Bridge. The bridge's iconic towers and suspension cables are visible, stretching across the frame from the top right towards the bottom left.

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