

Dmitriy Miroshnychenko

Kyiv National University of Technologies and Design

(Kyiv)

Scientific supervisor – PhD Maria Chernets

THE VALUE OF KOTLIN IN MODERN MOBILE DESIGN

In the modern world, mobile development has become a necessity for many services and enterprises, and this market needs new approaches to software developing speed and quality. Kotlin has become such an approach.

Kotlin is a new programming language developed by JetBrains. The language is developed on the basis of Java Virtual Machine (JVM), there is also support for JavaScript, and this allows Kotlin to be used in developing client-side browser applications. Language developers also created a platform that allows you to compile native apps that don't use VM [1].

Since 2012 JetBrains has been open source. Today, the language development team has 20 permanent members from JetBrains, and the Kotlin project on GitHub has about 100 members. JetBrains uses Kotlin for almost all its products, including IntelliJ Idea [2].

For JVM, Kotlin is compiled into Java bytecode and the language itself is fully compatible with Java. Thereby you can use Kotlin and Java in one project, and they will work together without interfering with each other. IntelliJ (Java IDE developed by JetBrains) even allows direct conversion of Java code to Kotlin.

For the majority of modern developers, Kotlin has become a language that fixed all flaws and sins of Java. In Java, many language functions (which are already in C #, Python) that could facilitate asynchronous development have been missing for a long time. Kotlin is a salvation for those who can no longer rub the Java.

Java and JVM have been proven and reliable tools for many years, but there are many other modern languages with more extensive set of functions such as C # and Python. Today, developers want to write less code and at the same time make it more efficient, logical and laconic. It's quite useful for Android developers, because

extension functions allowed them to use abstractions (e.g. Kotlin Android extensions) that make the code more readable, concise and compact. Thanks to such a wide range of functions, a large number of developers started building applications and switched to developing on Kotlin even before Google made it an officially supported language for development for Android. Possibly that made Google accept this language as the official development language for Android.

Kotlin supports higher order functions, anonymous functions, lambda expressions, built-in functions, closures, tail recursion, and generalizations. Kotlin acquired many features of functional languages. The fact that it has the ability to write top-level functions is only one of functional features in Kotlin.

Functions embedded in Kotlin JDK were designed to avoid common mistakes and boilerplate. Also Kotlin has strict nullability policy. The developer has to mark types as nullable explicitly.

To conclude, if there was a choice between Kotlin or Java for a new project, then it would be more reasonable to take into account that Kotlin code is safer and more concise than Java code, and they can coexist in Android applications. Therefore Kotlin is useful not only for new applications, but also for existing ones.

REFERENCES

1. Janice J. Heiss The Advent of Kotlin: A Conversation with JetBrains' Andrey Breslav. Oracle Technology Network (April 2013).
2. Kotlinlang [Electronic resource].-Electronic data. Mode of access: <https://www.kotlinlang.org> - Title from the screen.