Kotlin Census 2018

We're presenting the results of the Kotlin Census 2018 Survey, which was held between December 2018 and March 2019. 4300 developers (not just Kotlin users) shared their insights and feedback with us on how Kotlin fit into their world.

We are grateful to everyone who took part in the survey to help us get an accurate reflection of the incredible Kotlin community.

Kotlin Usage

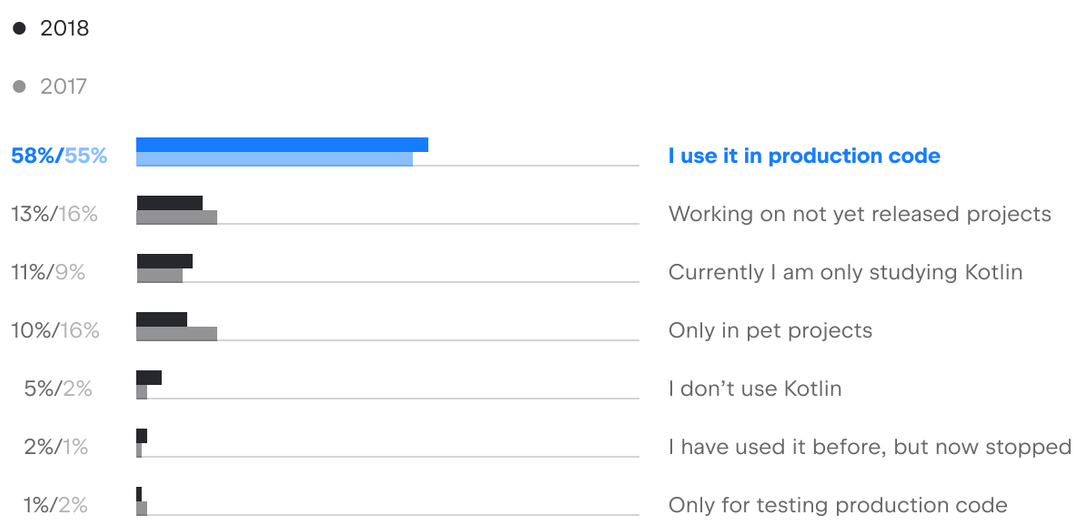
Kotlin is a multi-purpose language that is being used to develop almost every kind of application, be it server-side, desktop, mobile, or even embedded.

Designed and developed by JetBrains, Kotlin has seen significant growth and support from tech giants and developers. 2016 saw the release of Kotlin 1.0. Then in 2017, Google announced Kotlin as a first-class language for Android. In 2018, the language had already reached 1.5M+ users and had over 96,000 repositories on Github.

Today, over 70 members of the core Kotlin development team and more than 250 amazing contributors drive the language and ecosystem growth. In this report, you will find deeper insights on the trends, the state of Kotlin community, and use of the language.

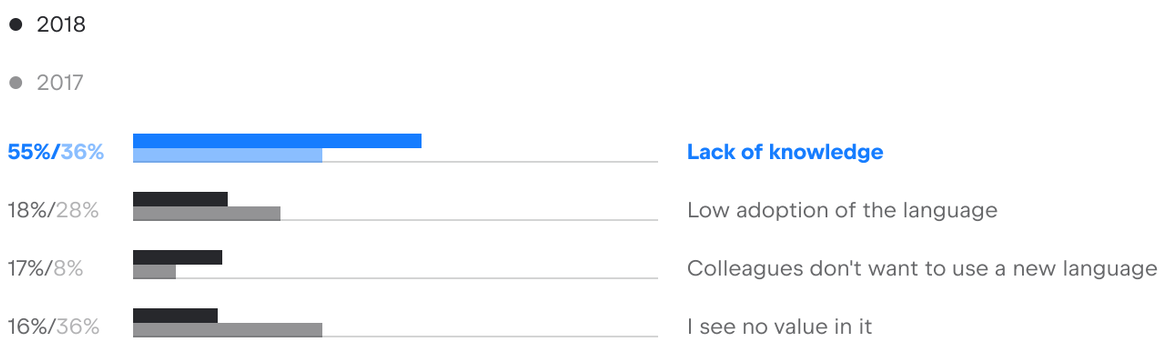
How do you mostly use Kotlin?

More than half of the respondents use Kotlin in their production code. Gradle, Pinterest, Atlassian, Pivotal and many more companies are among those who use Kotlin in production.



Note this was a multiple-answer question. The total may be greater than 100%.

What's stopping you from using Kotlin in production? 100+%



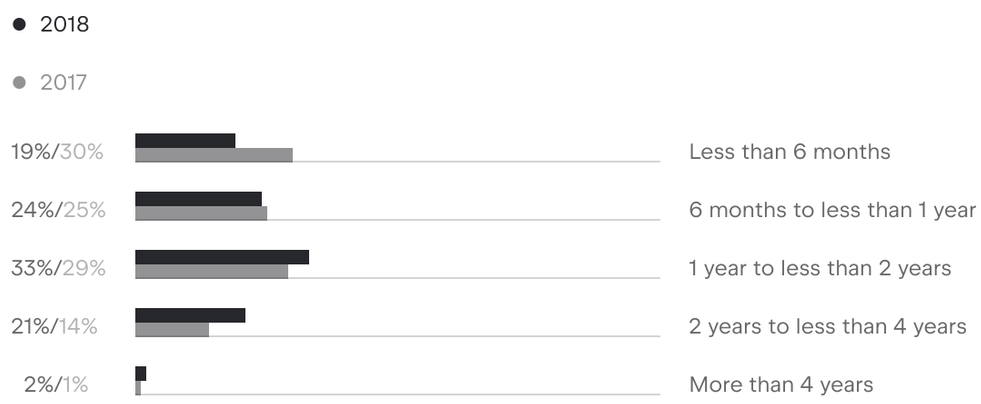
55% of respondents report a lack of knowledge as the main barrier stopping them from using Kotlin in production. We have compiled a list of useful material to help anyone start learning Kotlin.

- Official website
- Kotlin for Java Developers video course on Coursera
- Atomic Kotlin the book and associated learning resources
- Kotlin Playground an online sandbox to explore Kotlin
- Kotlin Edu by JetBrains. Free tools to learn, teach, and practice programming

Stay in touch with the community on Stack Overflow or the Kotlin forum, and join our Slack.

How long have you been using Kotlin?

Users are sticking with Kotlin. People are reaching higher levels of experience with Kotlin. If they have used Kotlin for over a year, it looks like they usually stick with it.



Host a Kotlin/Everywhere event

Help your community learn the essentials and best practices of using Kotlin on all platforms. For more info go to everywhere.kotlinlang.org

Kotlin Flavors

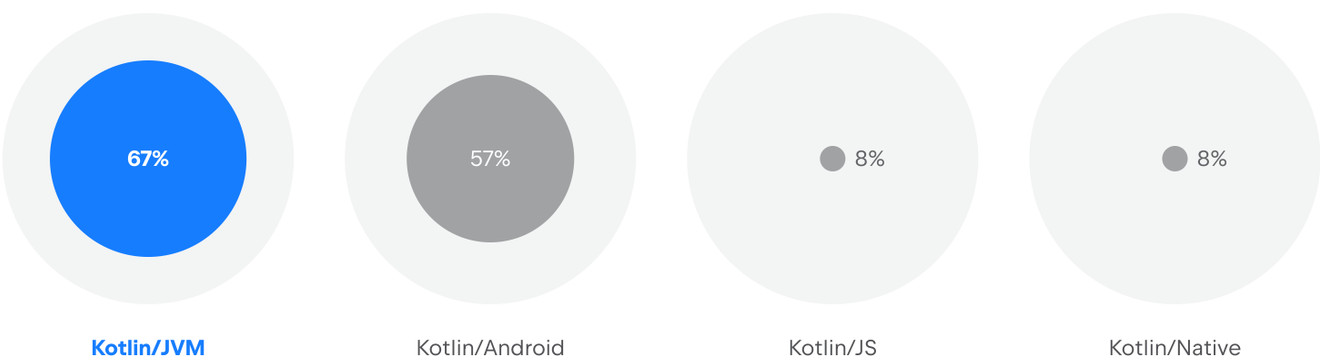
There are four main flavors of Kotlin to help make the coding process easier and provide more opportunities for cross-platform development. Kotlin targets JVM, JavaScript, Android, and Native. This makes the language a great tool to develop all types of applications and run them on popular operation systems, like iOS, macOS, Windows, and Linux.

Read about:

- Kotlin/JVM
- Kotlin/Native
- Kotlin/Android
- Kotlin/JS

Note this was a multiple-answer question. The total may be greater than 100%.

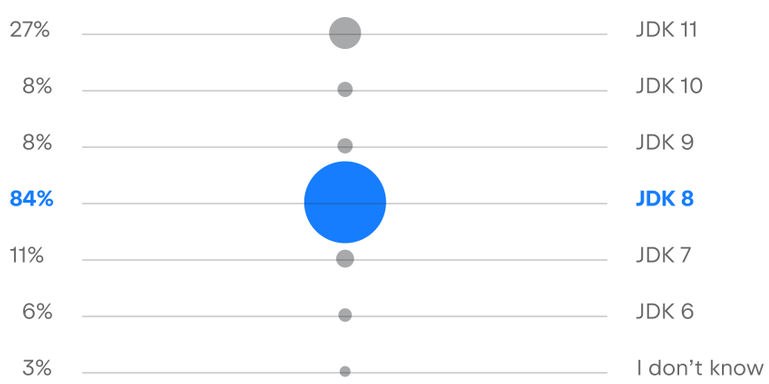
Which flavor of Kotlin do you use? 100+%



The most popular usage for Kotlin is JVM at 67%, with Android coming in a pretty close second at 57%.

Note this was a multiple-answer question.
The total may be greater than 100%.

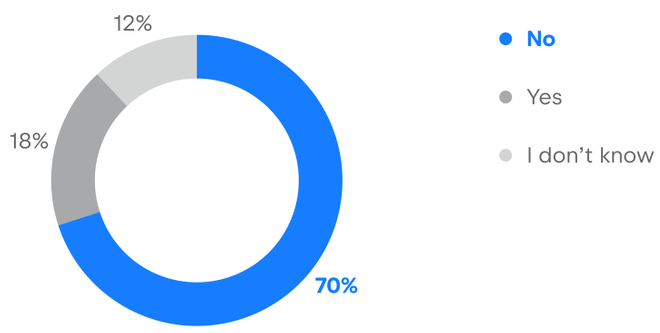
Which JDK version(s) do you develop for? 100+%



Interesting fact

84% of Kotlin users target JDK 8. The second most popular version is JDK 11 with 27%, whereas JDK 9 and 10 are lagging behind with 8% each.

Do you use Java Modules?



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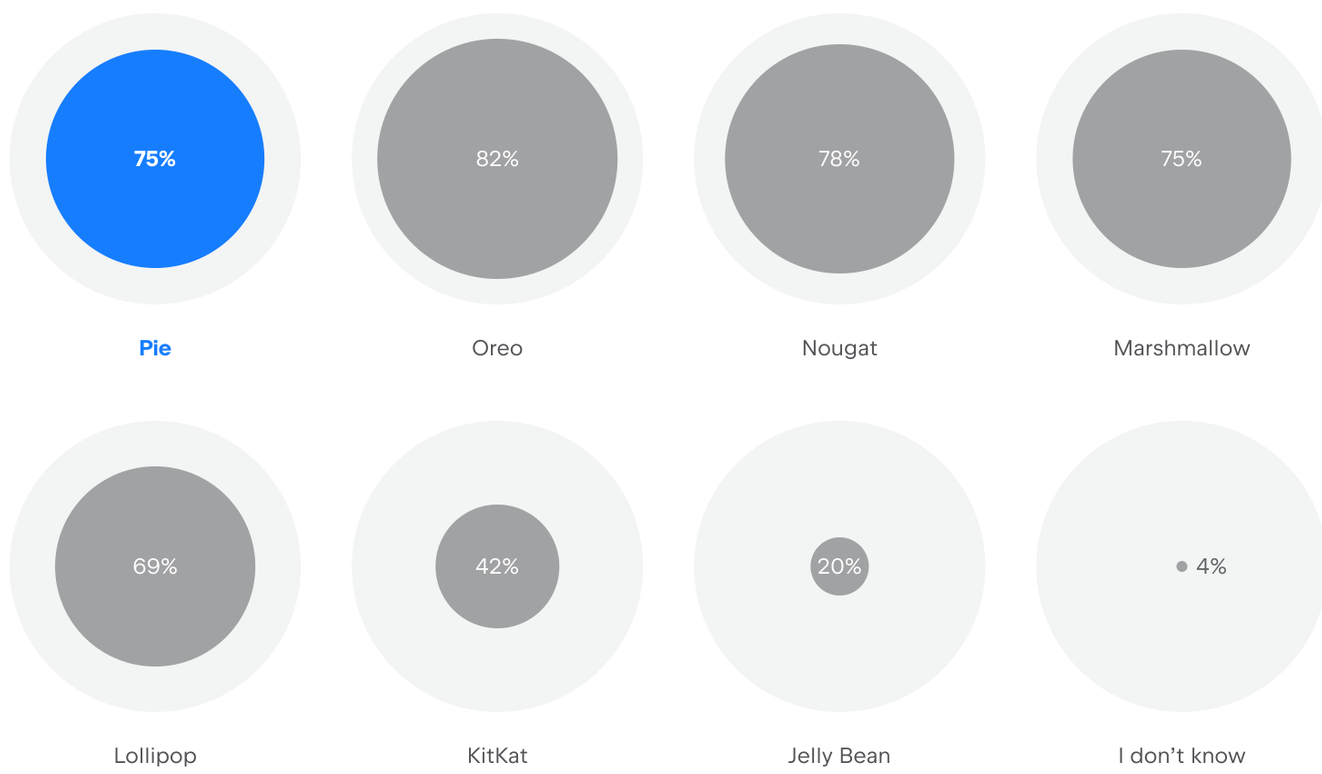
Which Android versions do you develop for? 100+%



Note this was a multiple-answer question.
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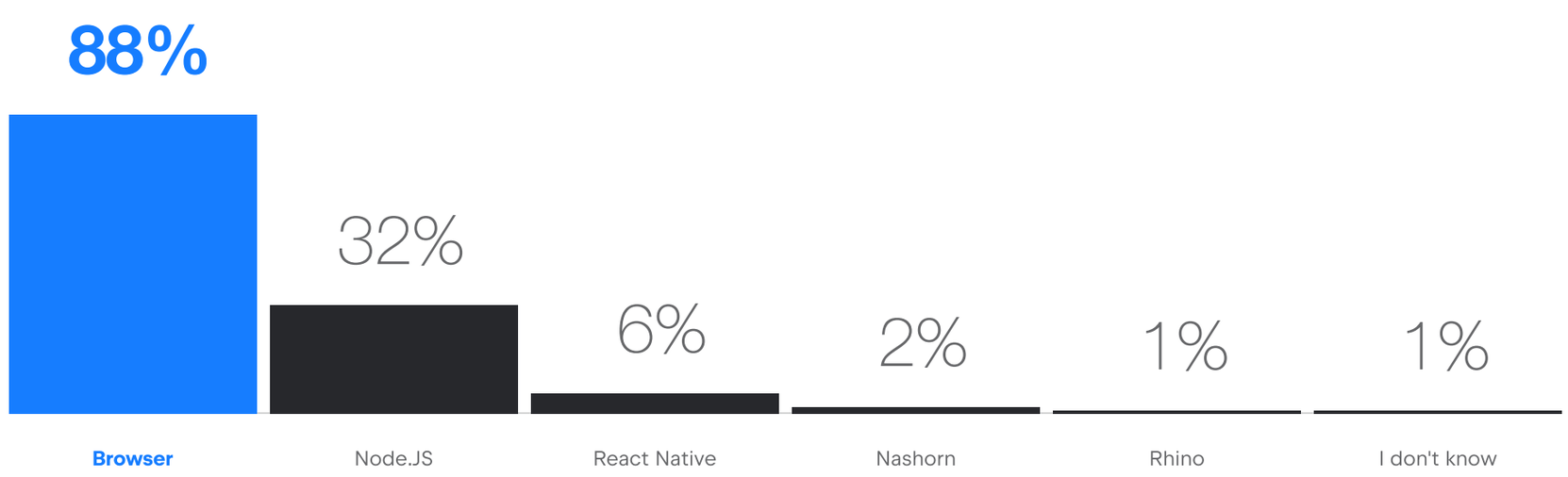
Where do you run the JavaScript code which you compile from Kotlin? 100+%



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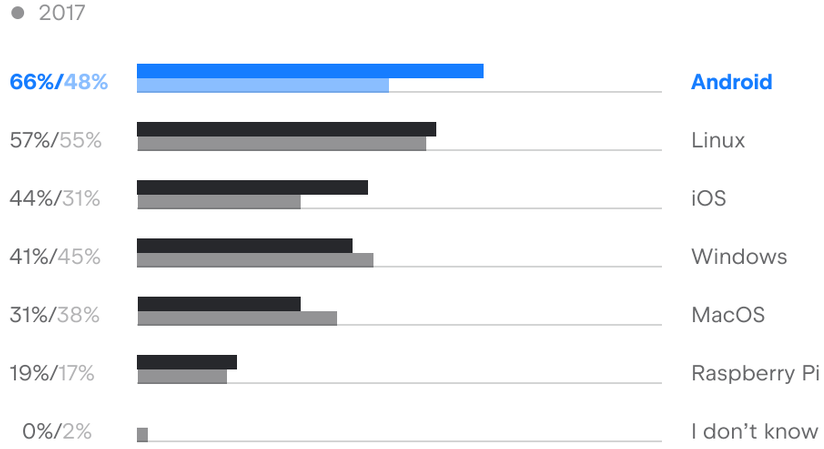
Which platforms / operating systems do you develop for? 100+%

- 2018



Interesting fact

Developers have been using Kotlin to develop for more platforms on average in 2018 (2.7) than in 2017 (2.3), showing a rising trend in the adoption of its cross-platform capability.

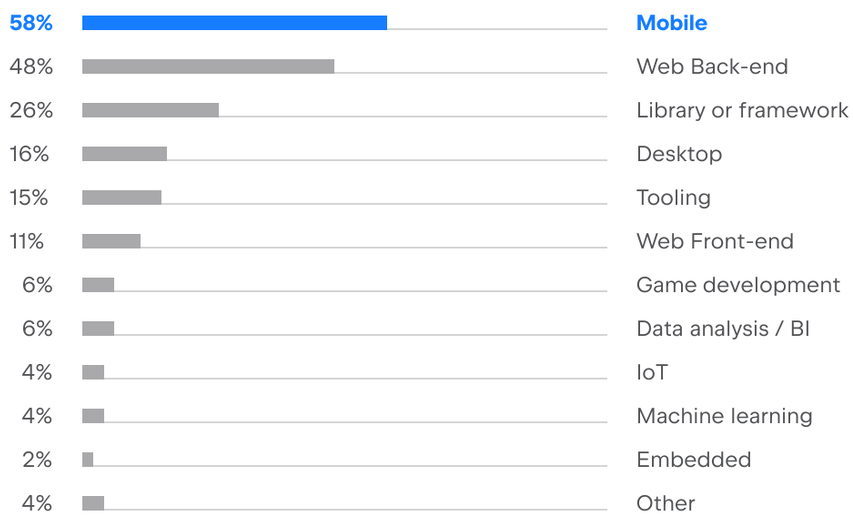
App Types

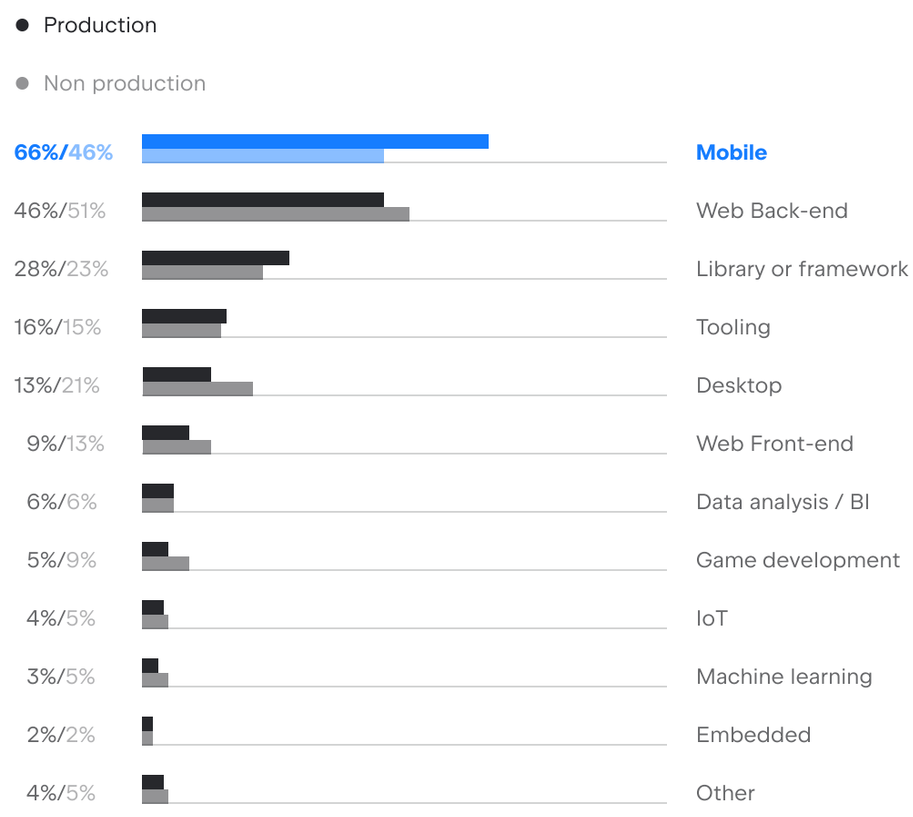
25% of users are developing 2 types of apps with Kotlin.

15% develop 3 types of apps, but still most developers use Kotlin in production for just one type of app. The most popular combinations are Web Back-end with Mobile and Web Back-end with Library or framework.

Note this was a multiple-answer question. The total may be greater than 100%.

What types of apps do you develop in Kotlin? 100+%





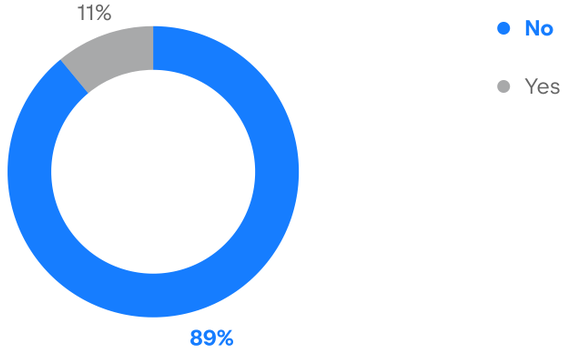
Multiplatform Projects

Multiplatform Projects first appeared in Kotlin 1.2 and it was then significantly improved upon for the Kotlin 1.3 release. It includes a set of specific libraries to help you write multiplatform code.

Multiplatform Projects first appeared in Kotlin 1.2 and the feature was drastically improved in Kotlin 1.3. A set of specific libraries is provided to help you write your multiplatform code.

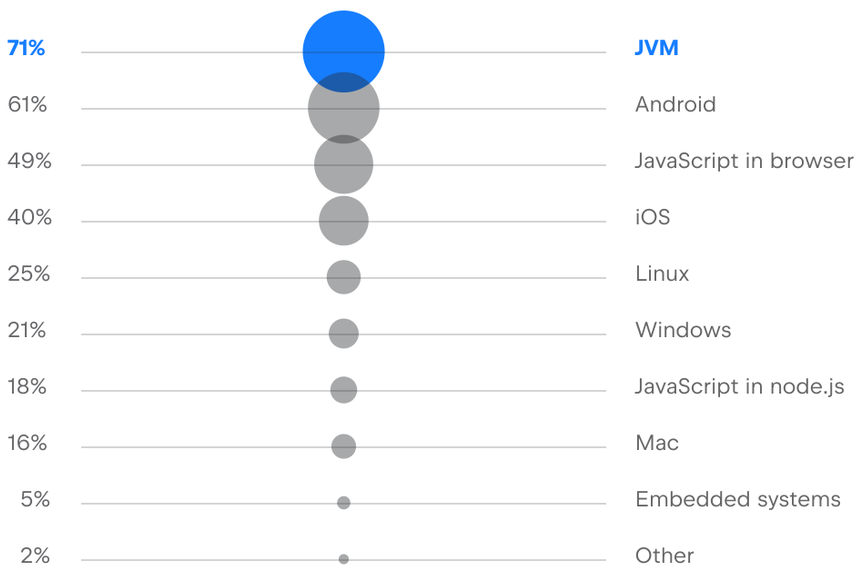
Learn more about how to start sharing code across platforms with MPP.

Do you use the Multiplatform Projects (MPP) feature?



Note this was a multiple-answer question.
The total may be greater than 100%.

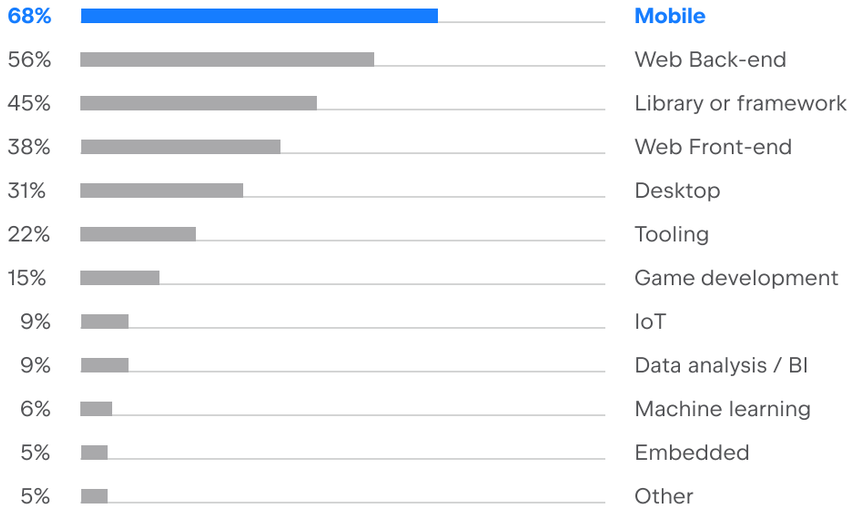
Which platforms do you use MPP for? 100+%



Interesting fact

The most common combinations of platform stacks are JVM together with JavaScript, and Android together with iOS.

App types of MPP users



Note this was a multiple-answer question.
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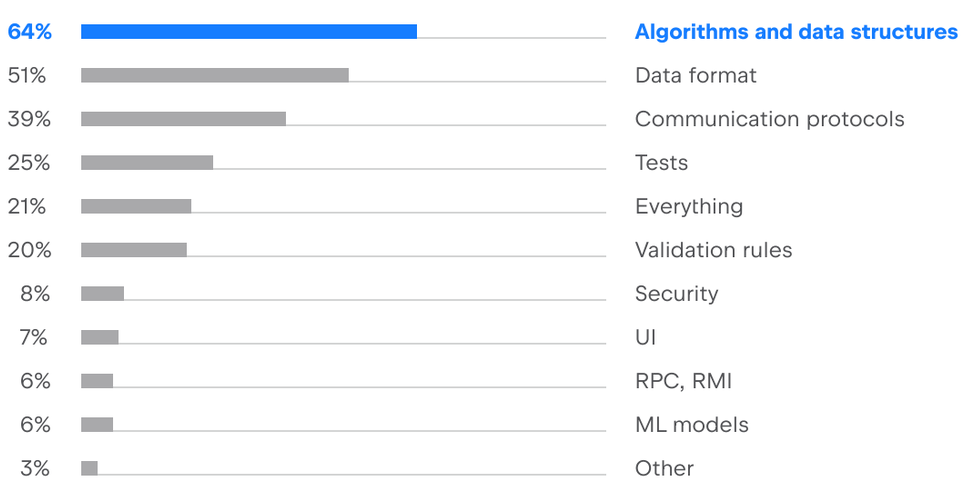
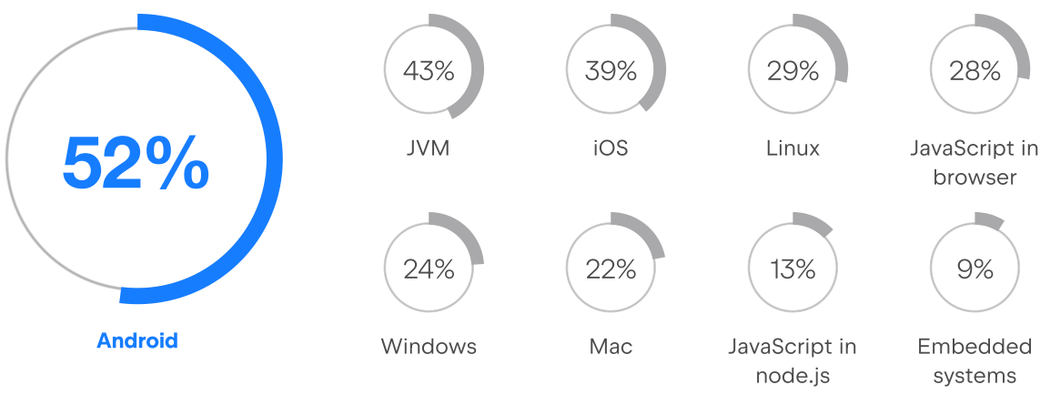
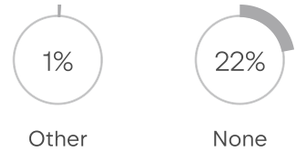
What parts of your current project do you share across multiple platforms? 100+%



Note this was a multiple-answer question.
The total may be greater than 100%.

Which platforms would you like to use MPP for? 100+%





Note this was a multiple-answer question.
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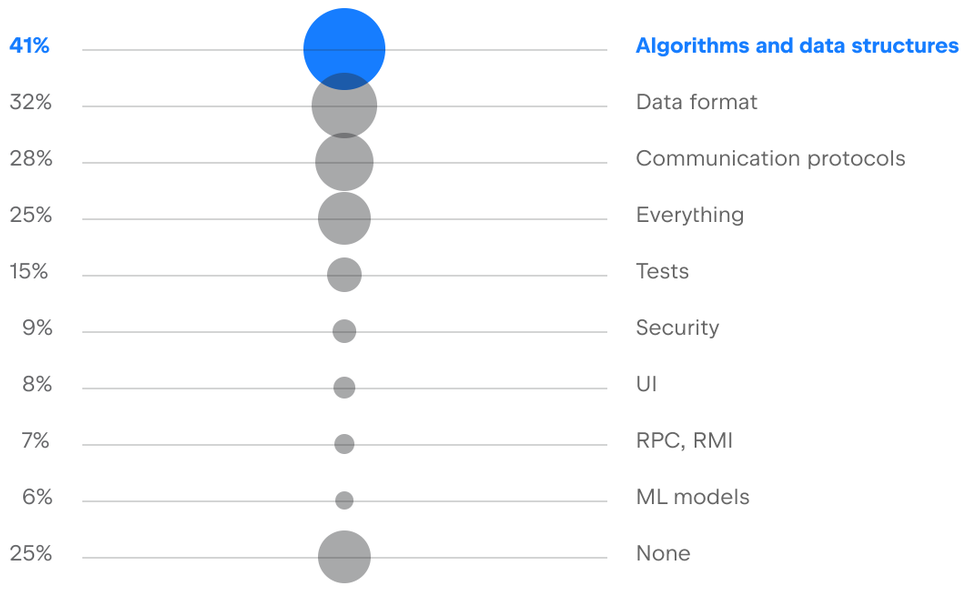
Which parts of your current project would you like to share across multiple platforms? 100+%

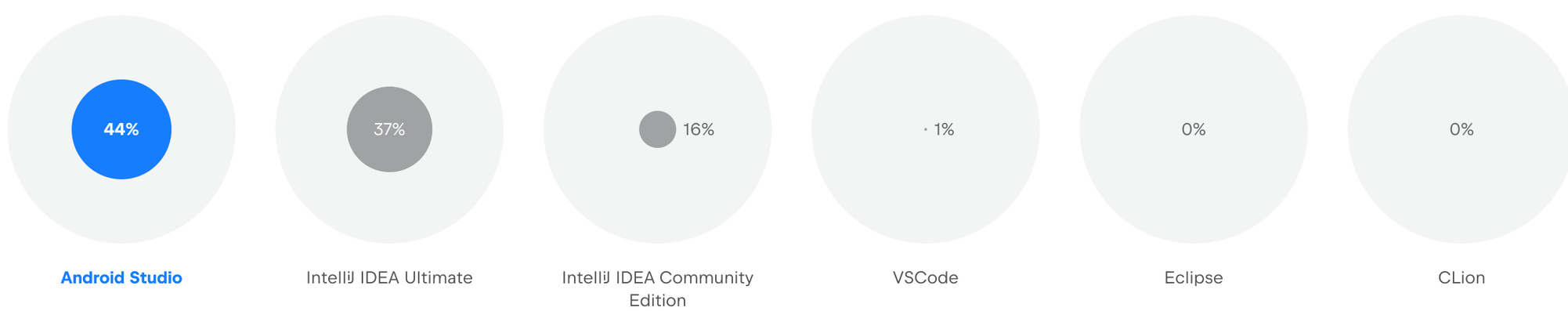


We asked the respondents who do not use MPP yet if there were some parts of their projects they would like to share across platforms, and which platforms those would be. We were surprised to find out that a whopping 75% of our respondents who do not use MPP yet would be glad to share some parts of their current project, especially algorithms and data structures (41%) and data format (32%).

Tools

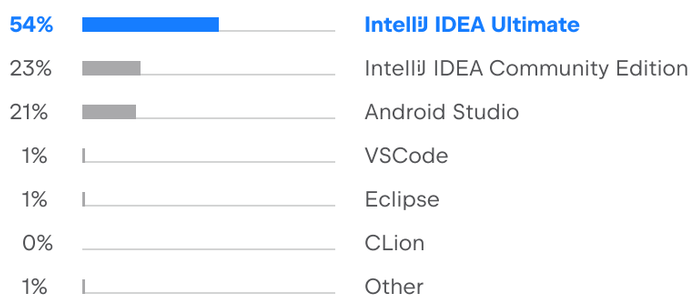
There should be no surprises that Kotlin and IntelliJ IDEA, both developed by JetBrains, are a perfect match.

Android Studio is based on the IntelliJ Platform and provides a great user experience for mobile development too. Both of these IDEs are the leaders according to the Census.

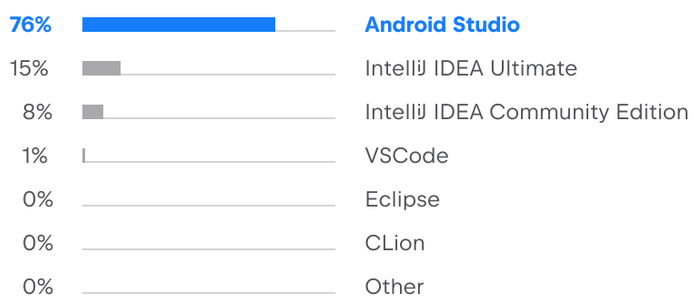


Which IDE do you mostly use for Kotlin development?

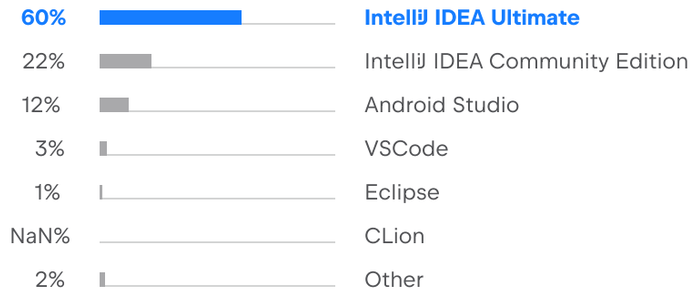
Kotlin/JVM



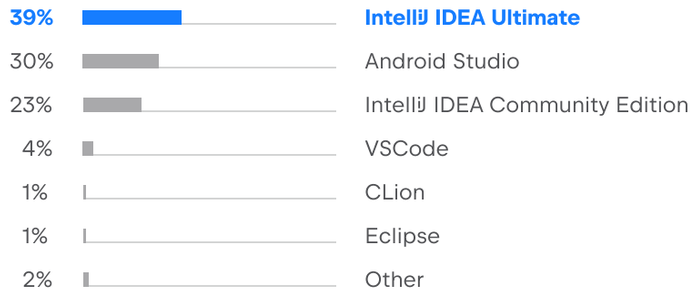
Kotlin/Android



Kotlin/JS



Kotlin/Native



IntelliJ IDEA for Kotlin development

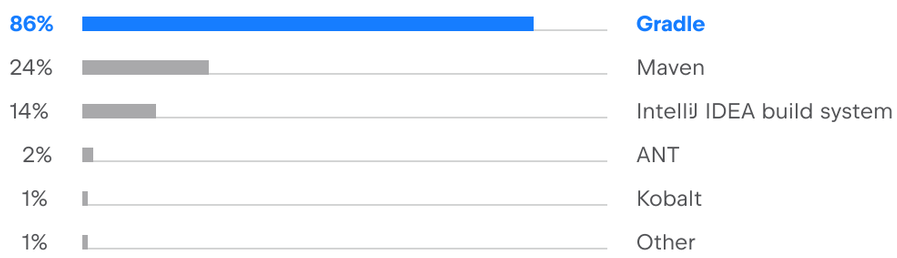
A capable and effective IDE for the JVM and beyond

Try now

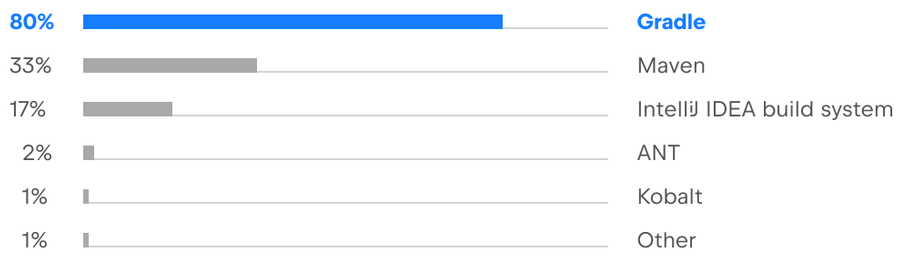
Note this was a multiple-answer question.
The total may be greater than 100%.

What build tools do you use? 100+%

All answers

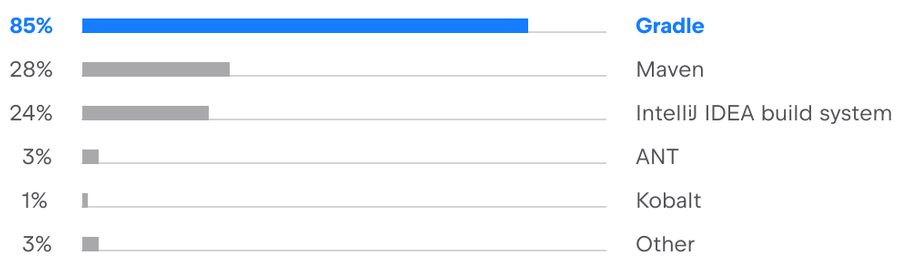


Kotlin/JVM

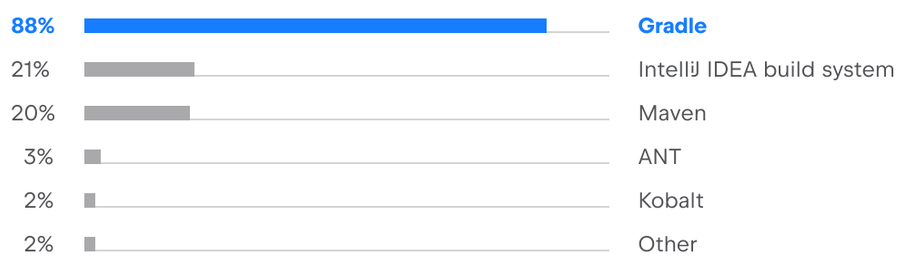


Kotlin/Android

Kotlin/JS



Kotlin/Native

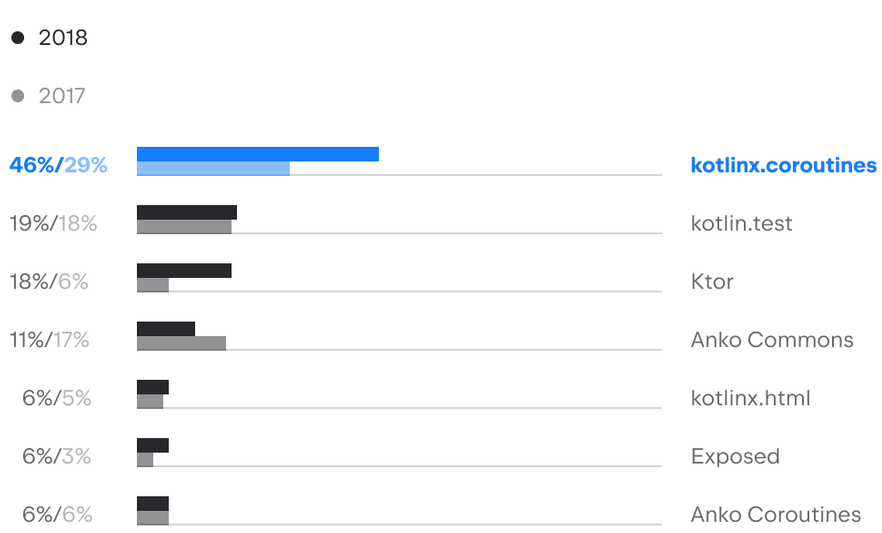


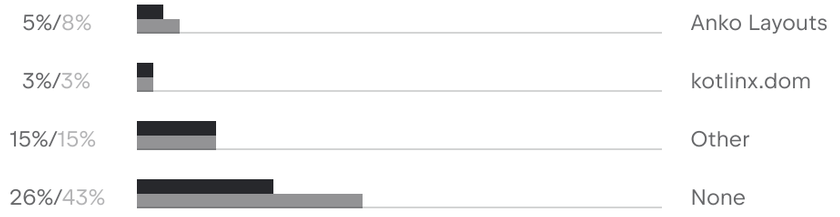
The most popular Gradle versions are 4.1 and 5.0.

Libraries

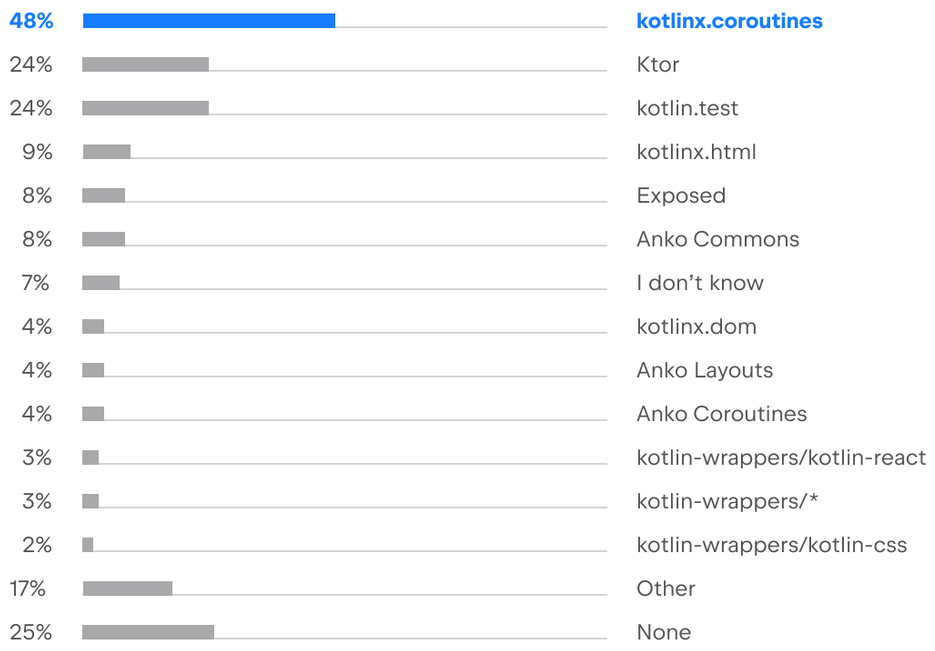
Note this was a multiple-answer question.
The total may be greater than 100%.

What JetBrains Kotlin libraries and frameworks do you currently use, if any? 100+%

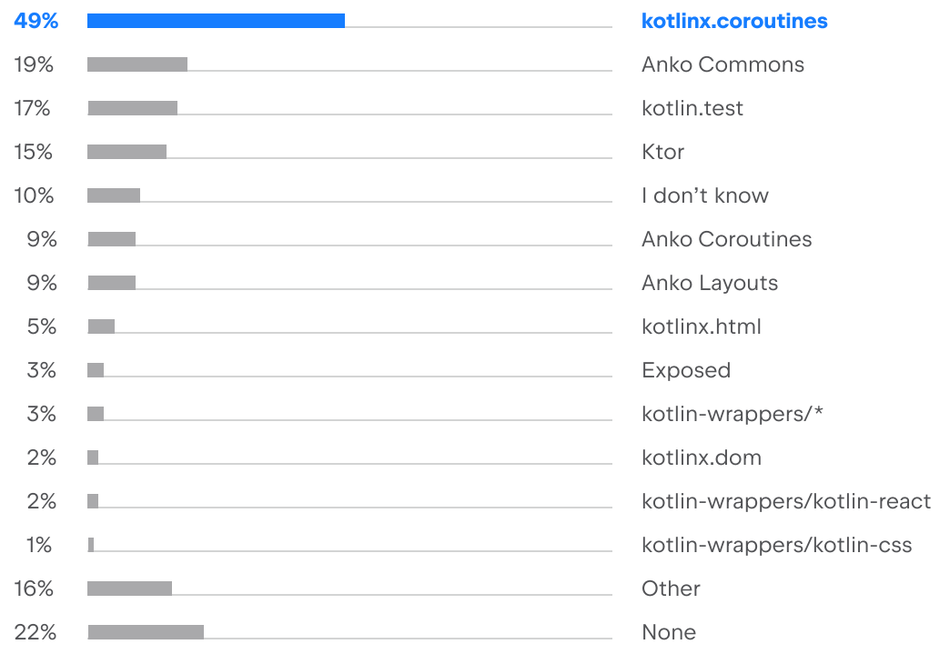




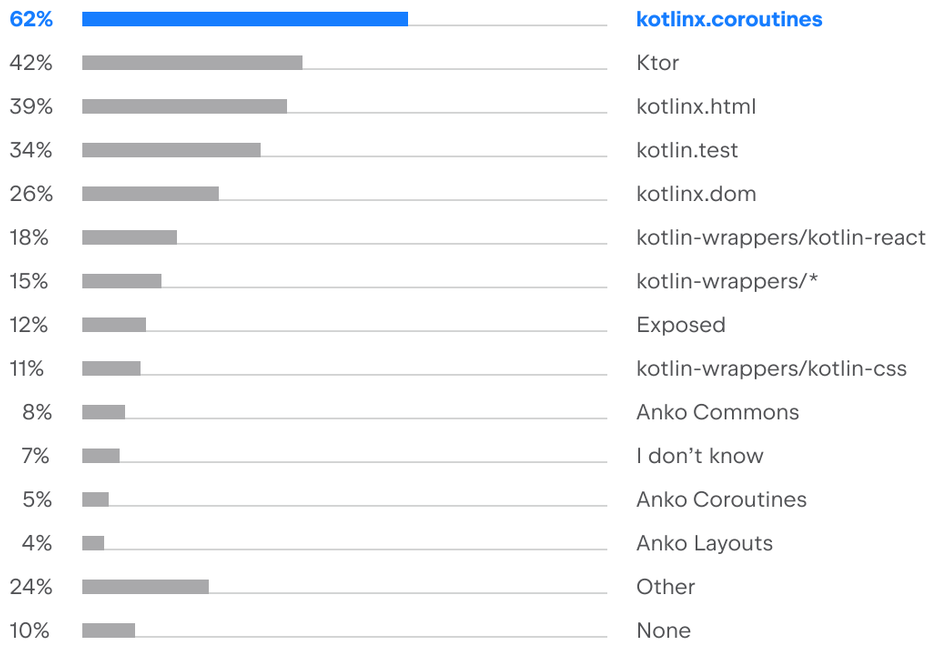
Kotlin/JVM



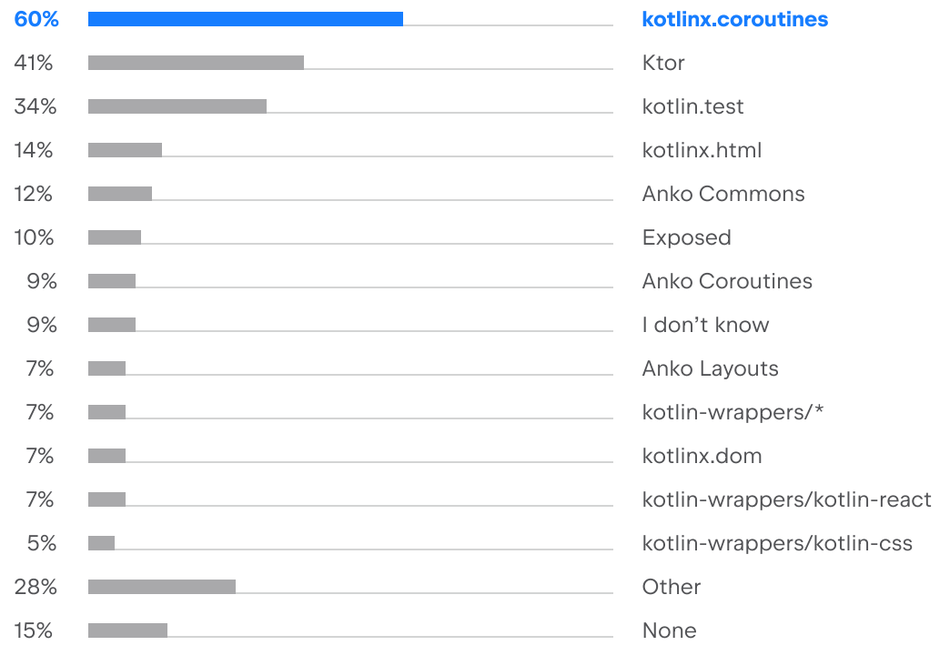
Kotlin/Android



Kotlin/JS



Kotlin/Native

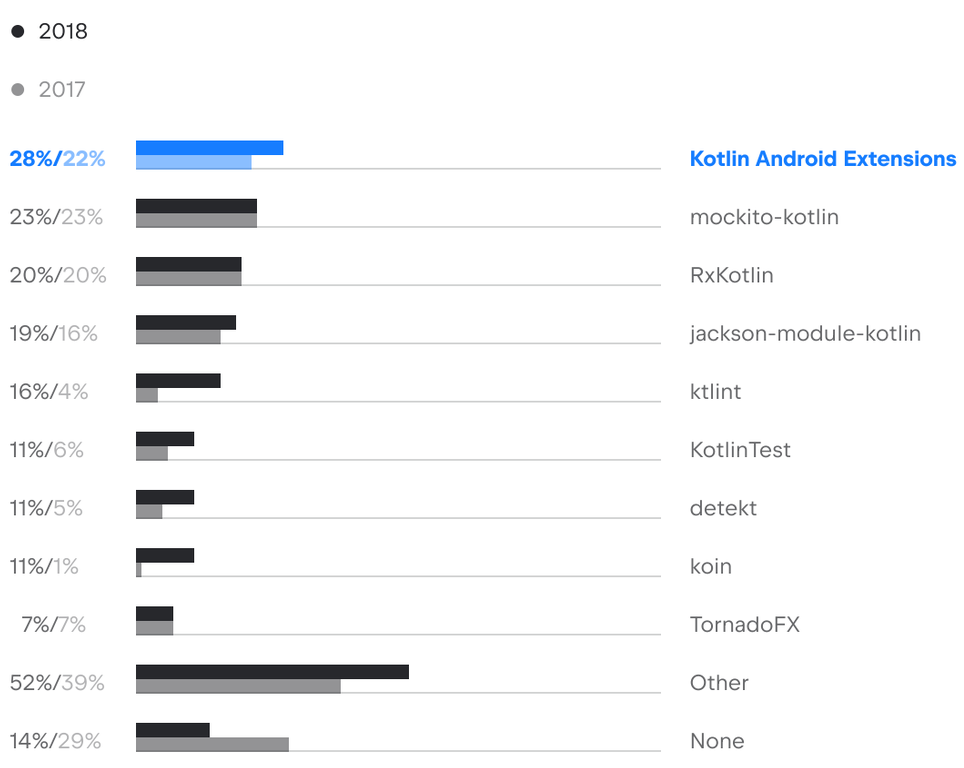


The usage of libraries has almost doubled since 2017, and the most used libraries continue to grow in popularity.

The 'Other' category includes any libraries with a usage of fewer than 5%; their frequency has remained mostly unchanged.

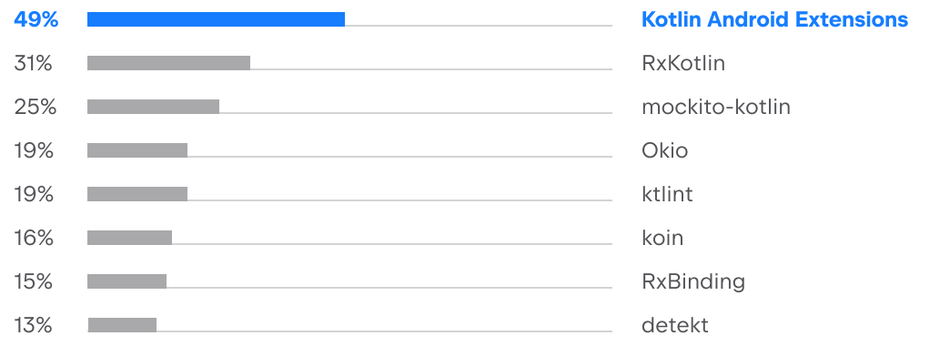
Note this was a multiple-answer question. The total may be greater than 100%.

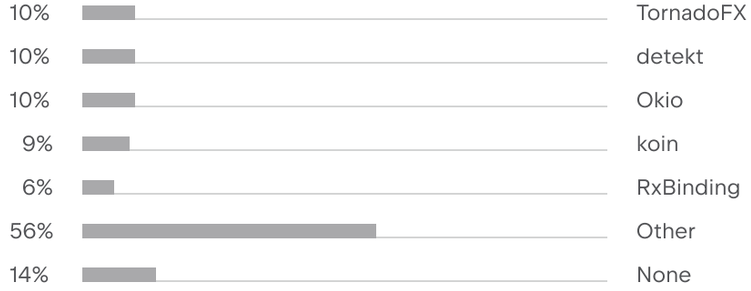
What other Kotlin libraries and frameworks do you currently use, if any? 100+%

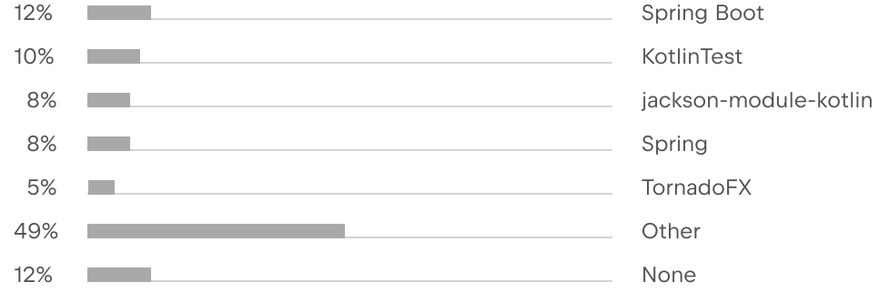


Kotlin/JVM

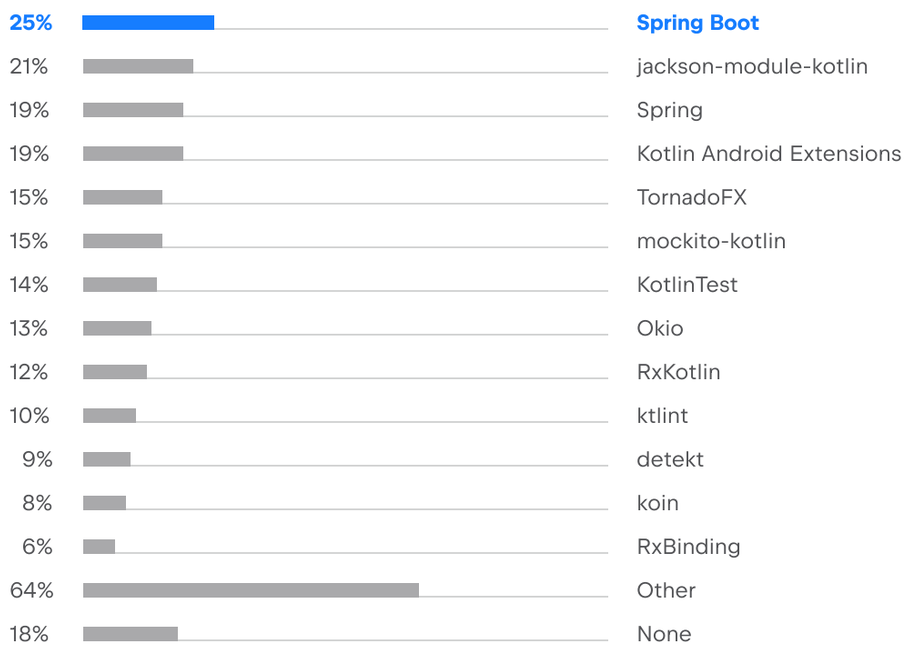
Kotlin/Android



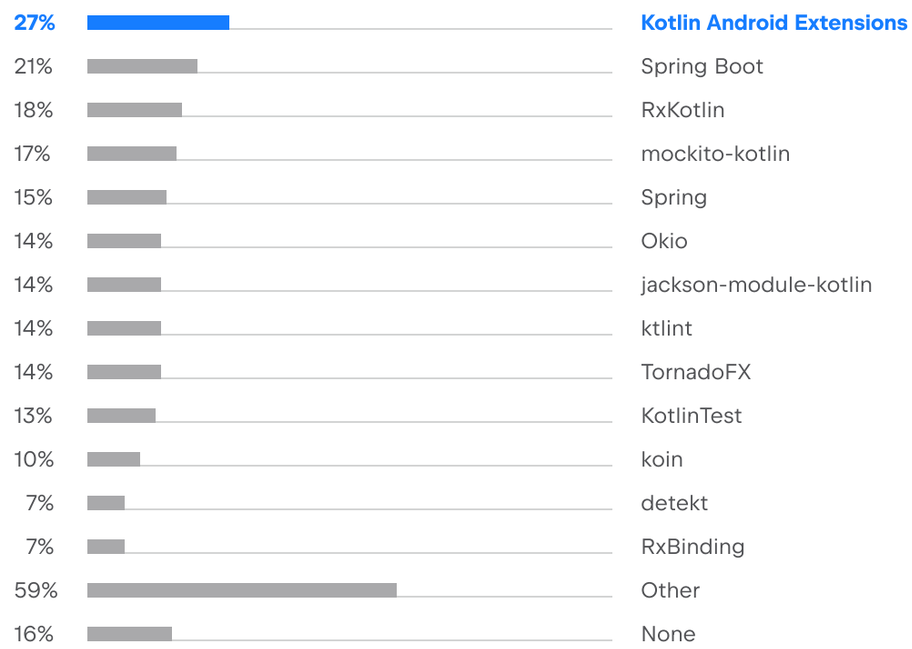




Kotlin/JS



Kotlin/Native



Learning resources

Respondents tended to use more community-driven resources in 2018 than in 2017. Blog posts and Stack Overflow overtook the official documentation.

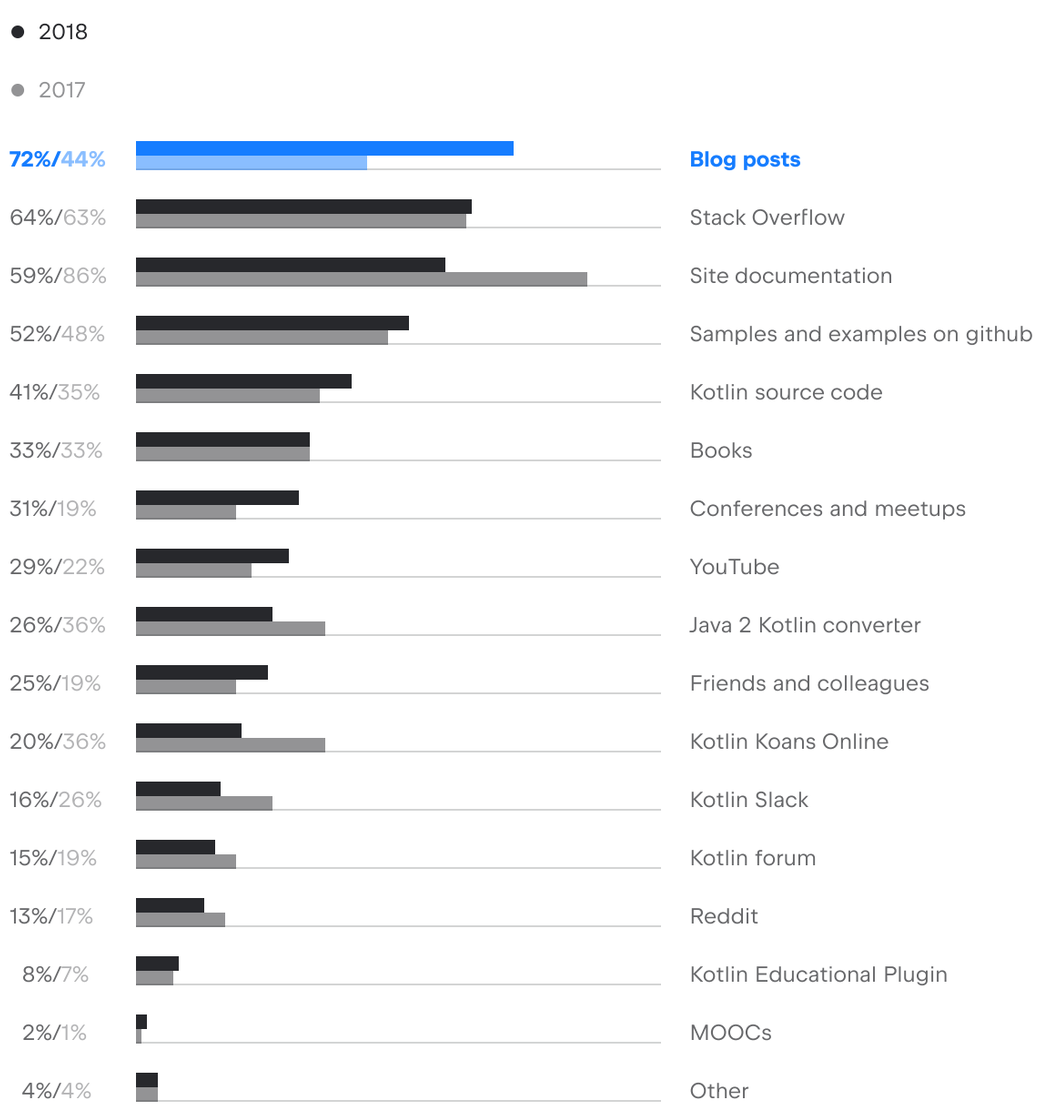
The popularity of meetups and conferences as a source of Kotlin knowledge has increased by 70%. So has the popularity of YouTube content and samples and examples on Github.

We on the Kotlin team are excited to see the growth of community-driven content in terms of quantity as well as popularity. We support this all the way and we thank all the authors and speakers out there for sharing their Kotlin knowledge!

If you are a Kotlin event organizer, speaker, or author, please read more about our Community and Support Program.

Note this was a multiple-answer question.
The total may be greater than 100%.

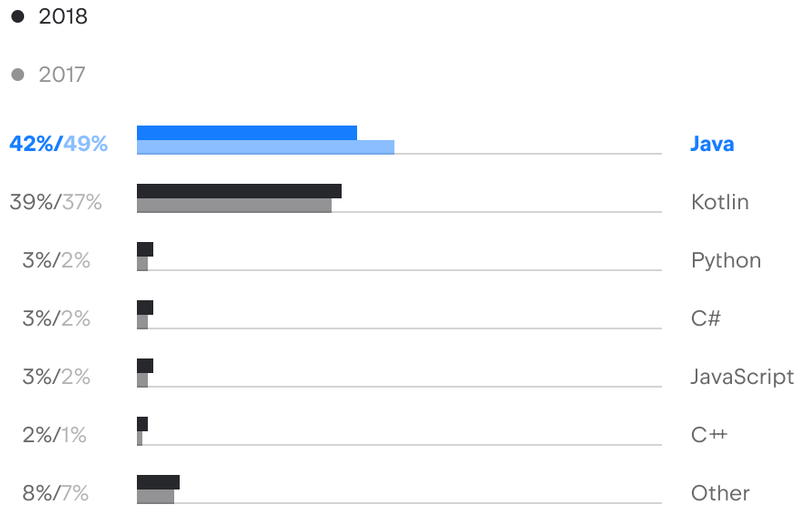
What kinds of resources help you learn Kotlin? 100+%



Demography

Note this was a multiple-answer question.
The total may be greater than 100%.

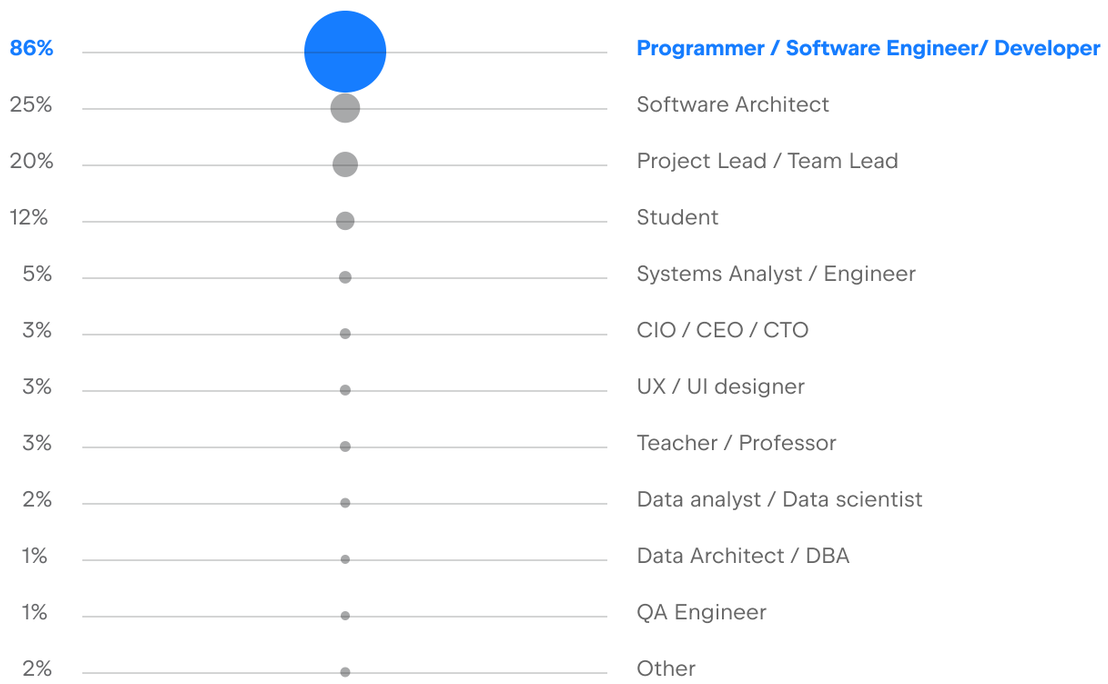
What is your primary programming language? 100+%



Kotlin is a primary language for 39% of respondents

Note this was a multiple-answer question.
The total may be greater than 100%.

What is your job role (job roles)? 100+%



Note this was a multiple-answer question.
The total may be greater than 100%.

How many people work for your company / organization? 100+%

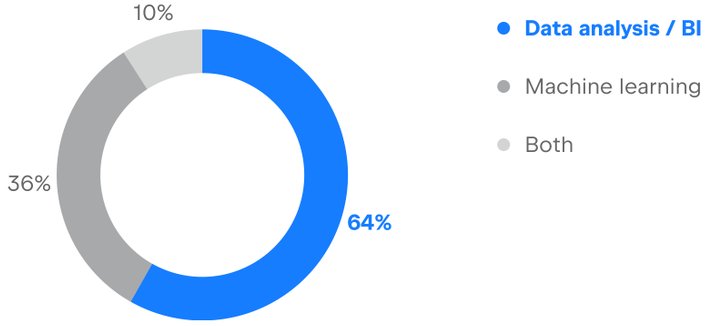
In short, Kotlin is used by organizations of all sizes.

Kotlin and data

Kotlin seems to be a promising programming language for working with data.

This chart shows the statistics on developers using Kotlin for machine learning, data analysis, or BI, which is around 10% of all survey respondents.

Kotlin for machine learning, data analysis or BI



If you are interested in getting started with Kotlin for data science, check out the collection of helpful resources assembled by Thomas Nield on Github.

Methodology and raw data

The data includes 4,396 responses from the official Kotlin channels. The survey was made available on the Kotlin blog and shared via internal channels such as Twitter and Facebook.

These infographics include only the most interesting facts. You are welcome to dig deeper into the raw data and find more insights if you are interested:

Download Kotlin Census 2018 Raw Data

The data has been anonymized, with no personal information or geolocation details. To prevent the identification of any individual respondents by their verbatim comments, all open-ended fields have been shortened.

Thank you for your time!

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