

# Mobile Applications

2022-2023

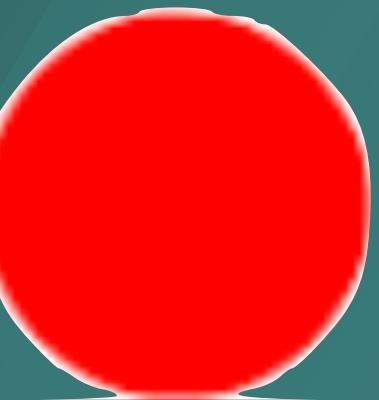
# Prerequisites

- Modern programming language
- Object oriented
- Statically types
- IDE - IntelliJ/Android Studio or Visual Studio Code



# What you should know...

- Basics:
  - Object-oriented programming
  - Classes, methods
  - Exception handling



# Bonus

- Functional Programming
- Lambdas
- Higher Order Functions
- Reactive Programming



# Options



2007



2008



2010



# Native Options



2008



2017

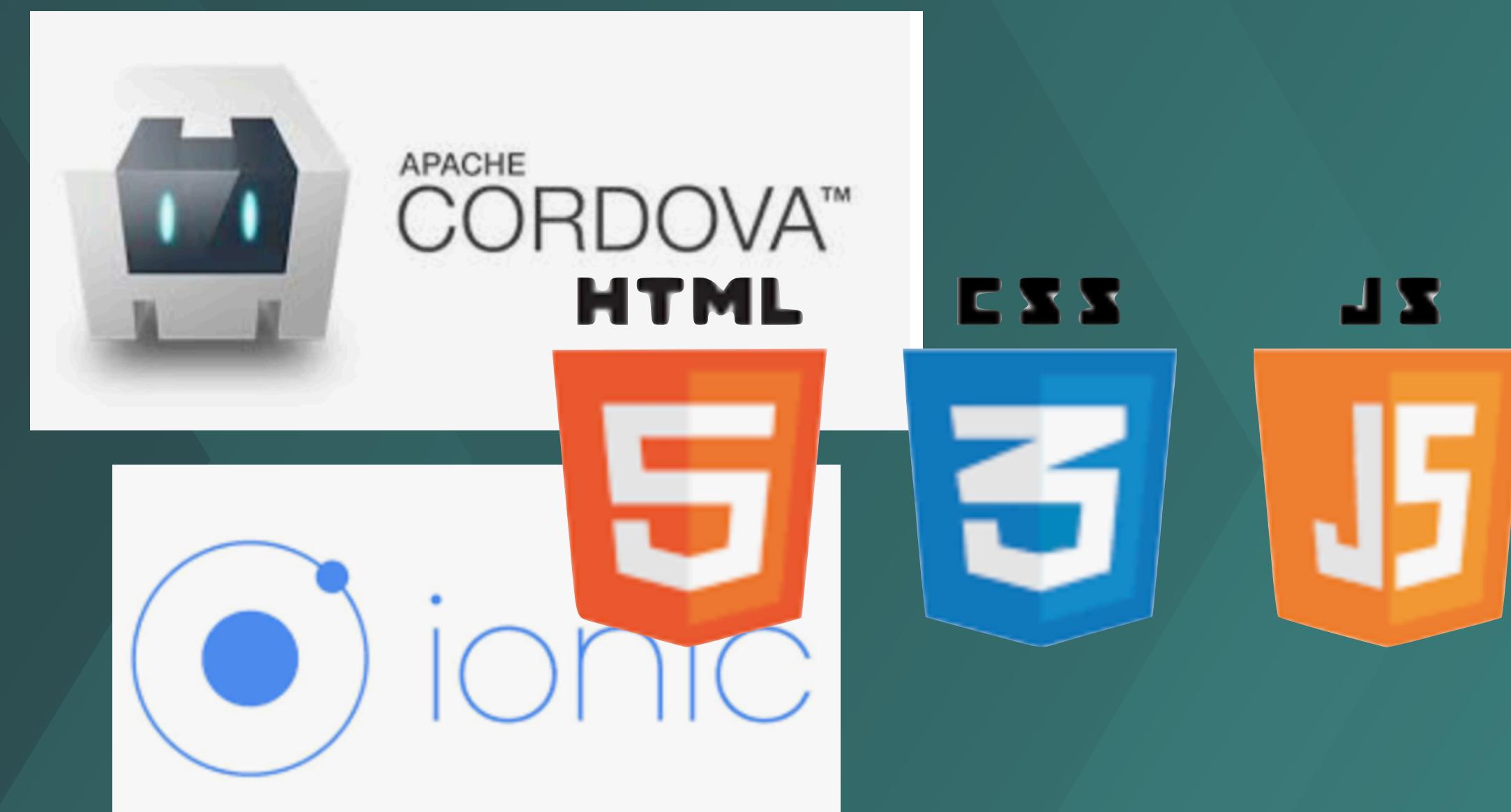


2007



2014

# Non-Native Options



2013

Hybrid App

# Non-Native Options

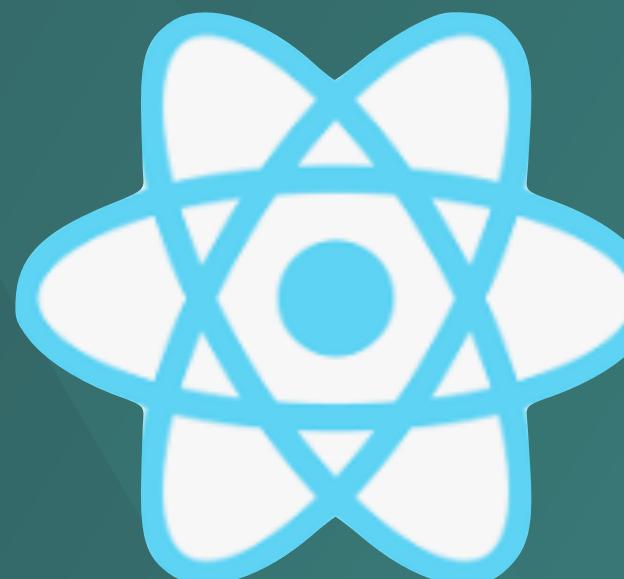


2014

JS



## Compiled App



2015

JS



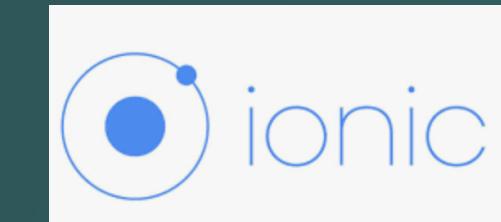
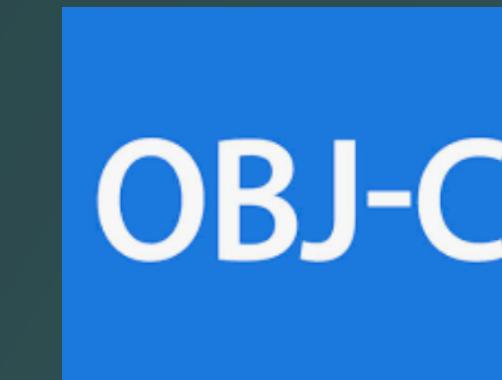
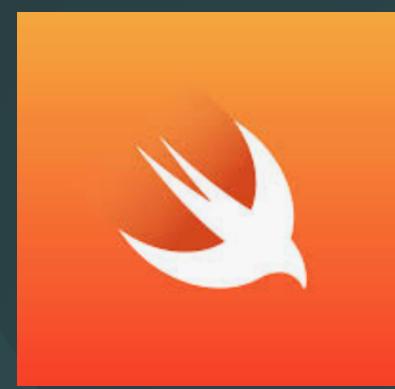
2017



# Timeline



# What to learn?



# KNOW YOUR RIGHTS

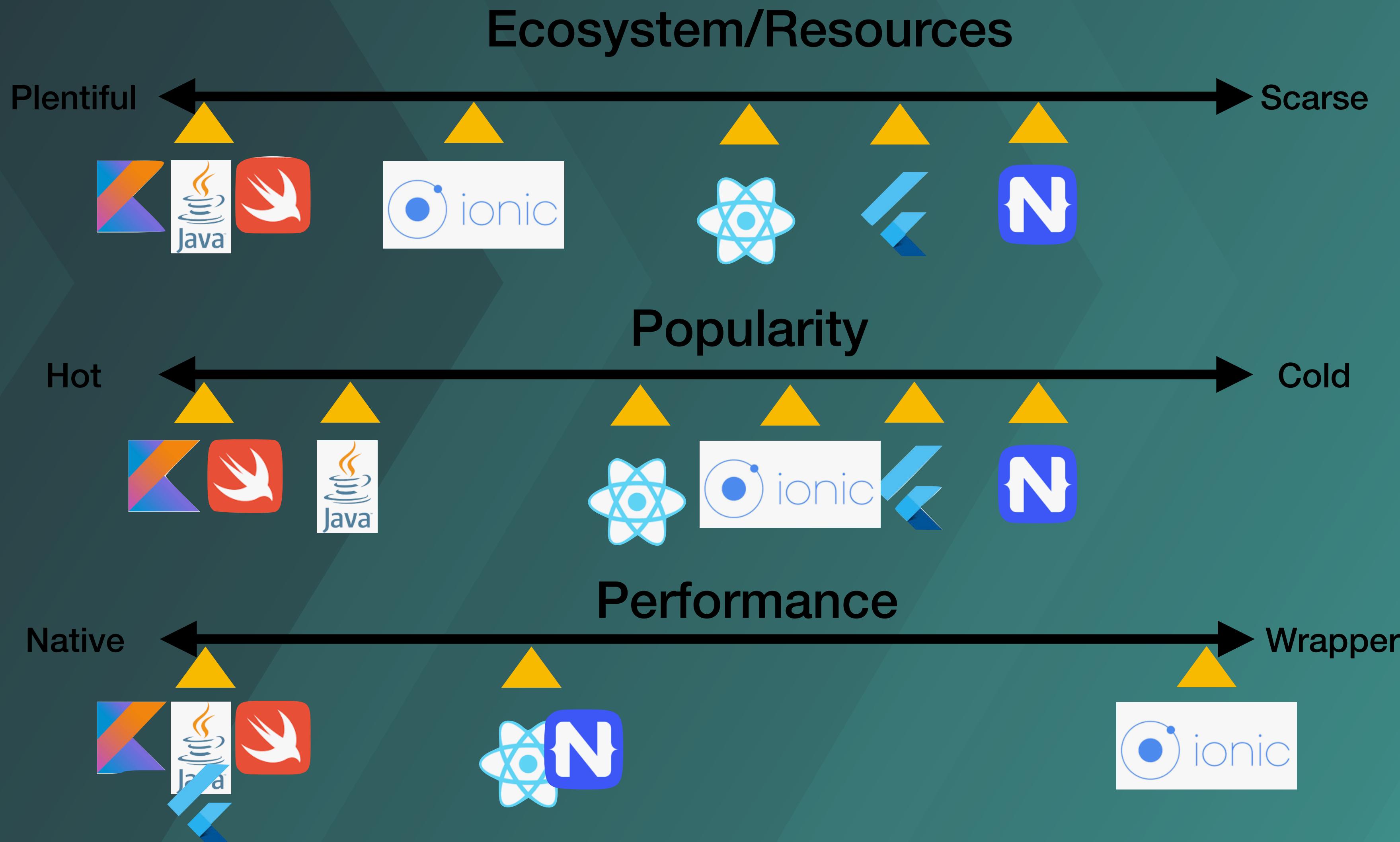
[bit.ly/maQuiz2022](https://bit.ly/maQuiz2022)



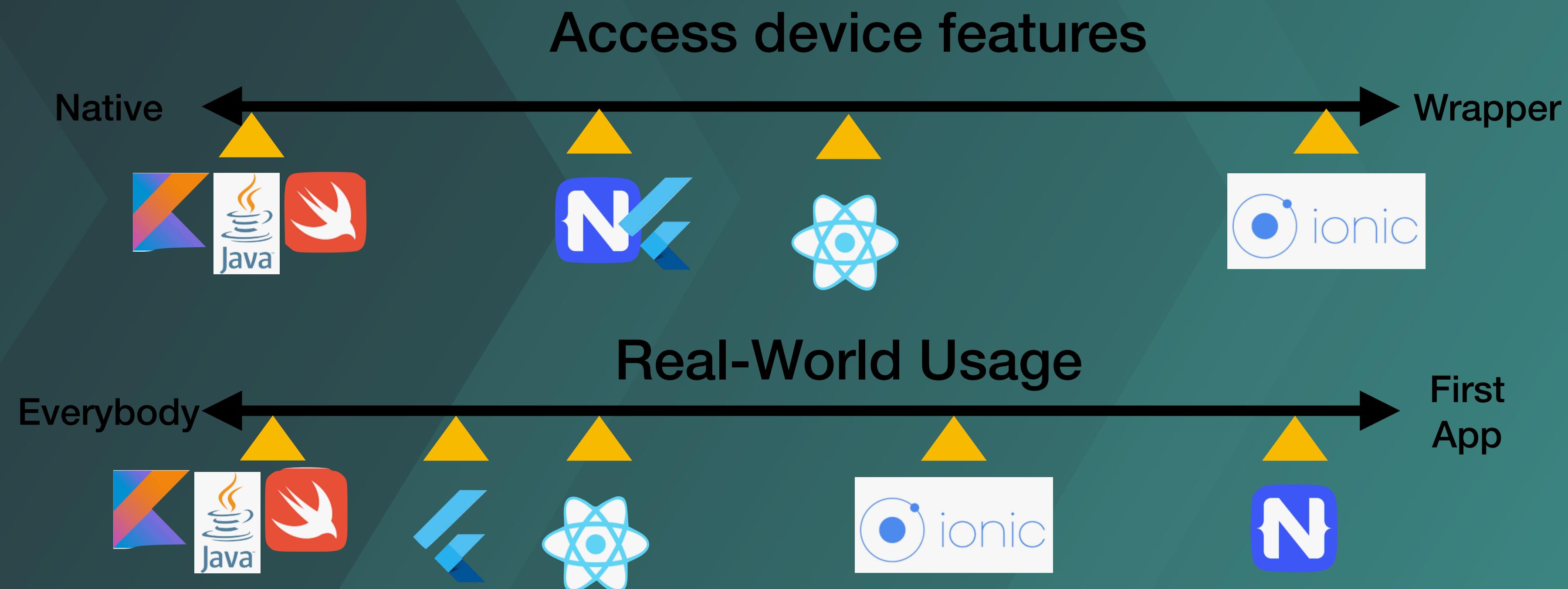
# Comparison



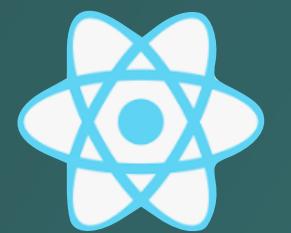
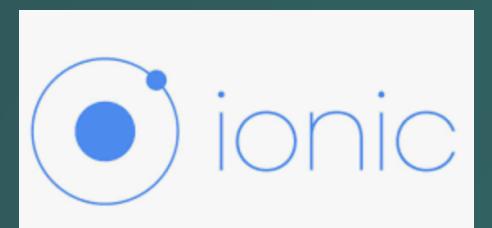
# Comparison



# Comparison



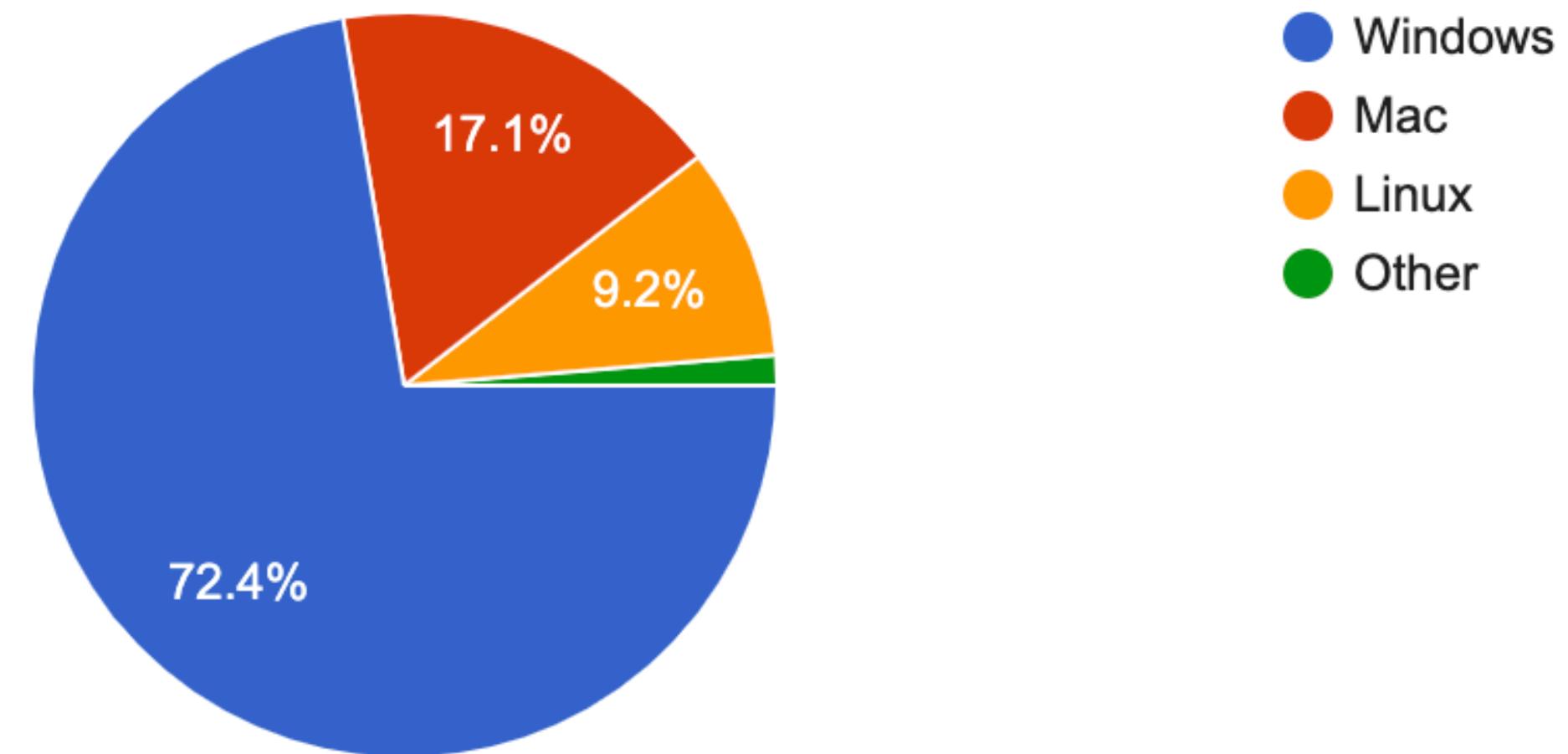
# Previous years



# Responses from 2018

What operating system is your development machine using?

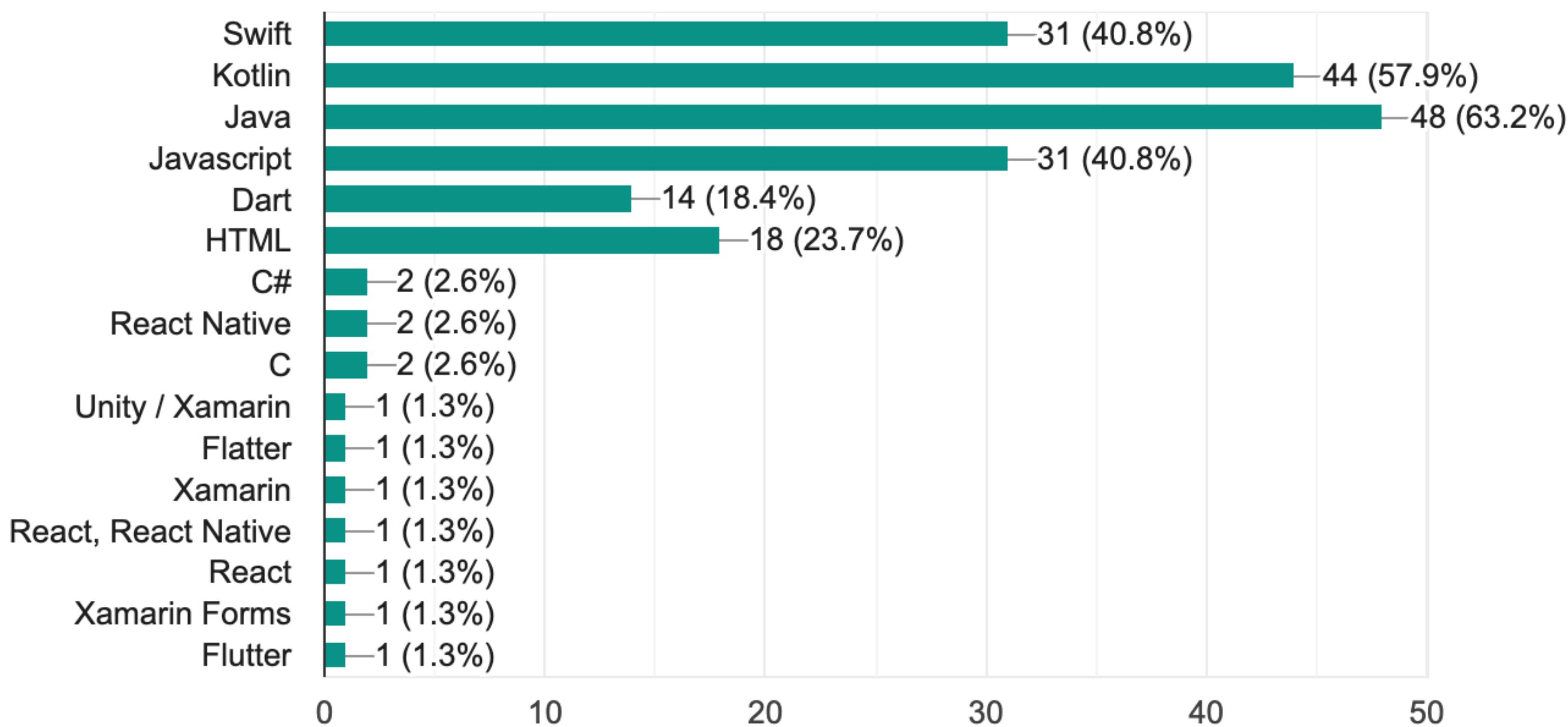
76 responses



# Responses from 2018

What language would you like to use/learn?

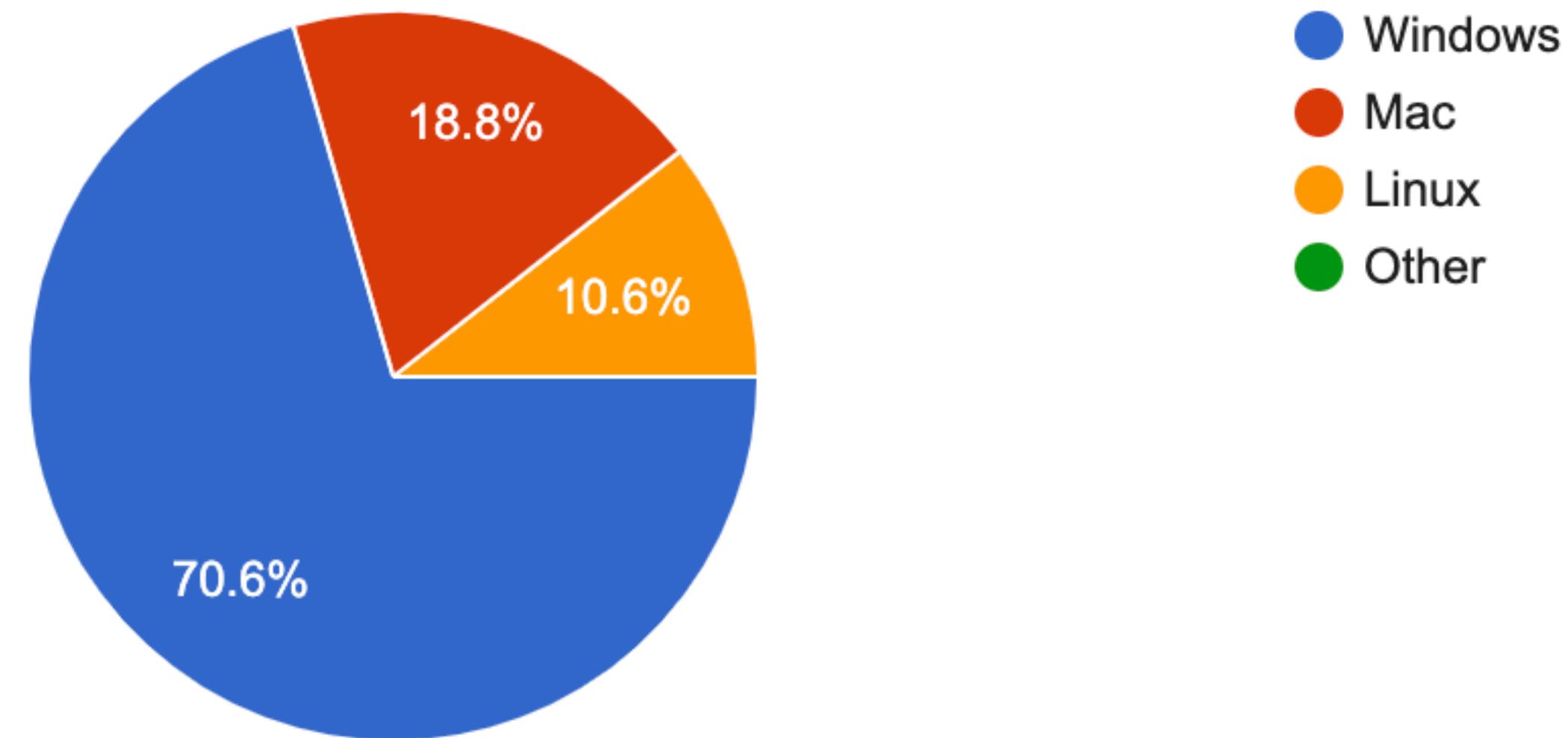
76 responses



# Responses from 2019

What operating system is your development machine using?

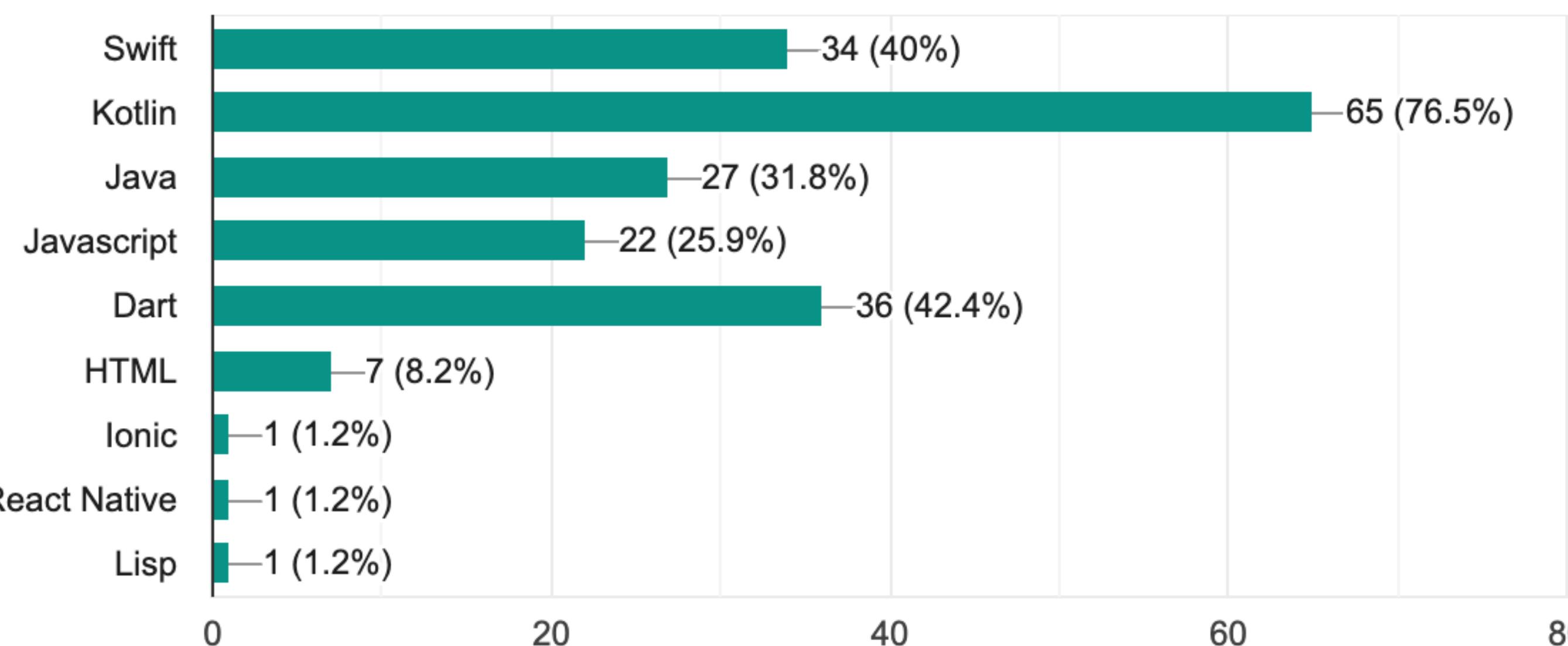
85 responses



# Responses from 2019

What language would you like to use/learn?

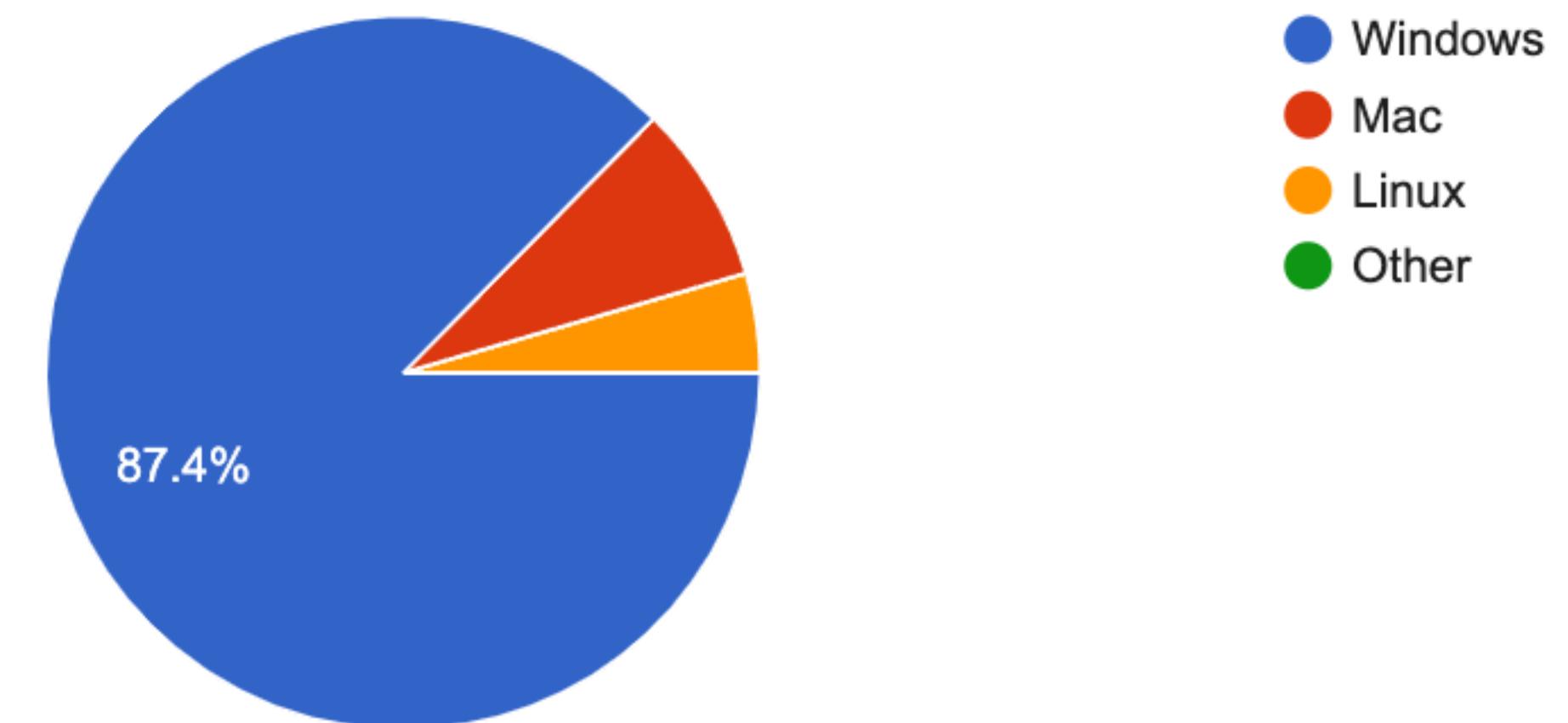
85 responses



# Responses from 2020

What operating system is your development machine using?

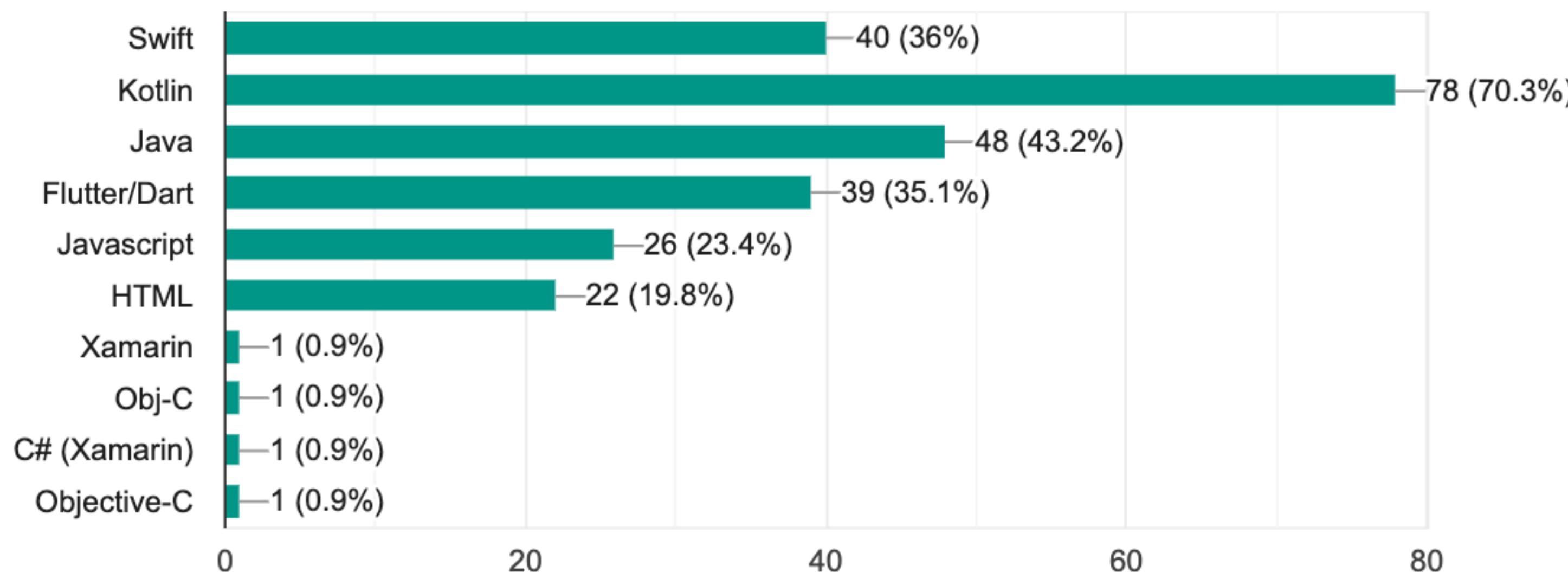
111 responses



# Responses from 2020

What language would you like to use/learn?

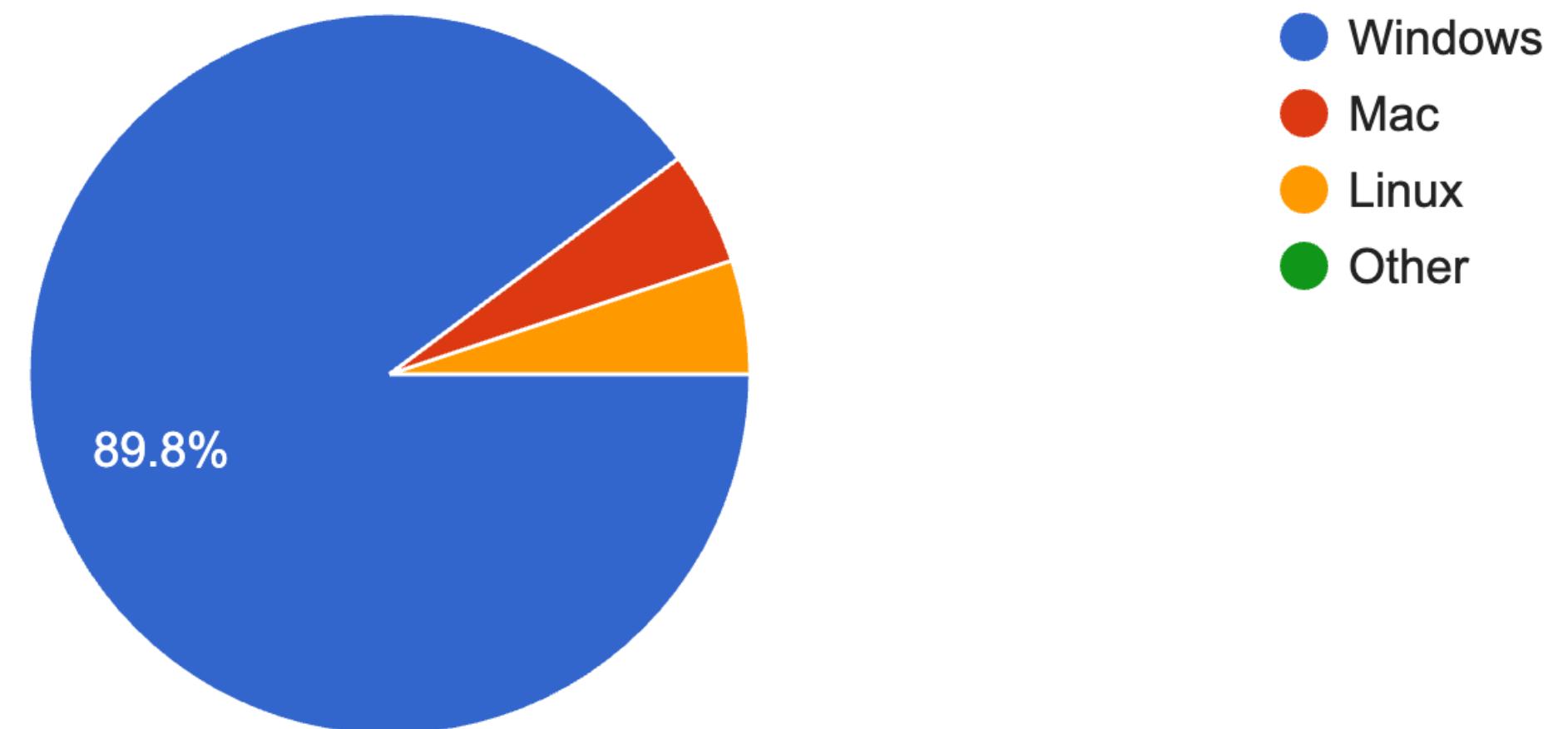
111 responses



# Responses from 2021

What operating system is your development machine using?

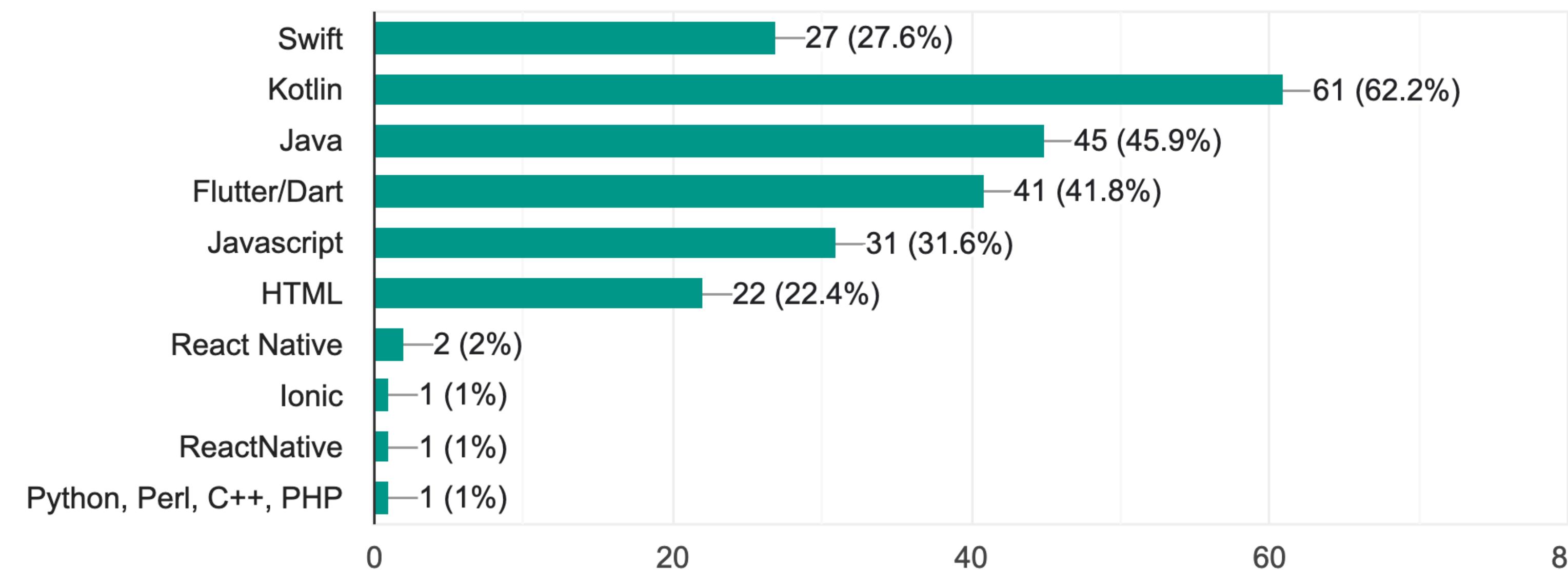
98 responses



# Responses from 2021

What language would you like to use/learn?

98 responses



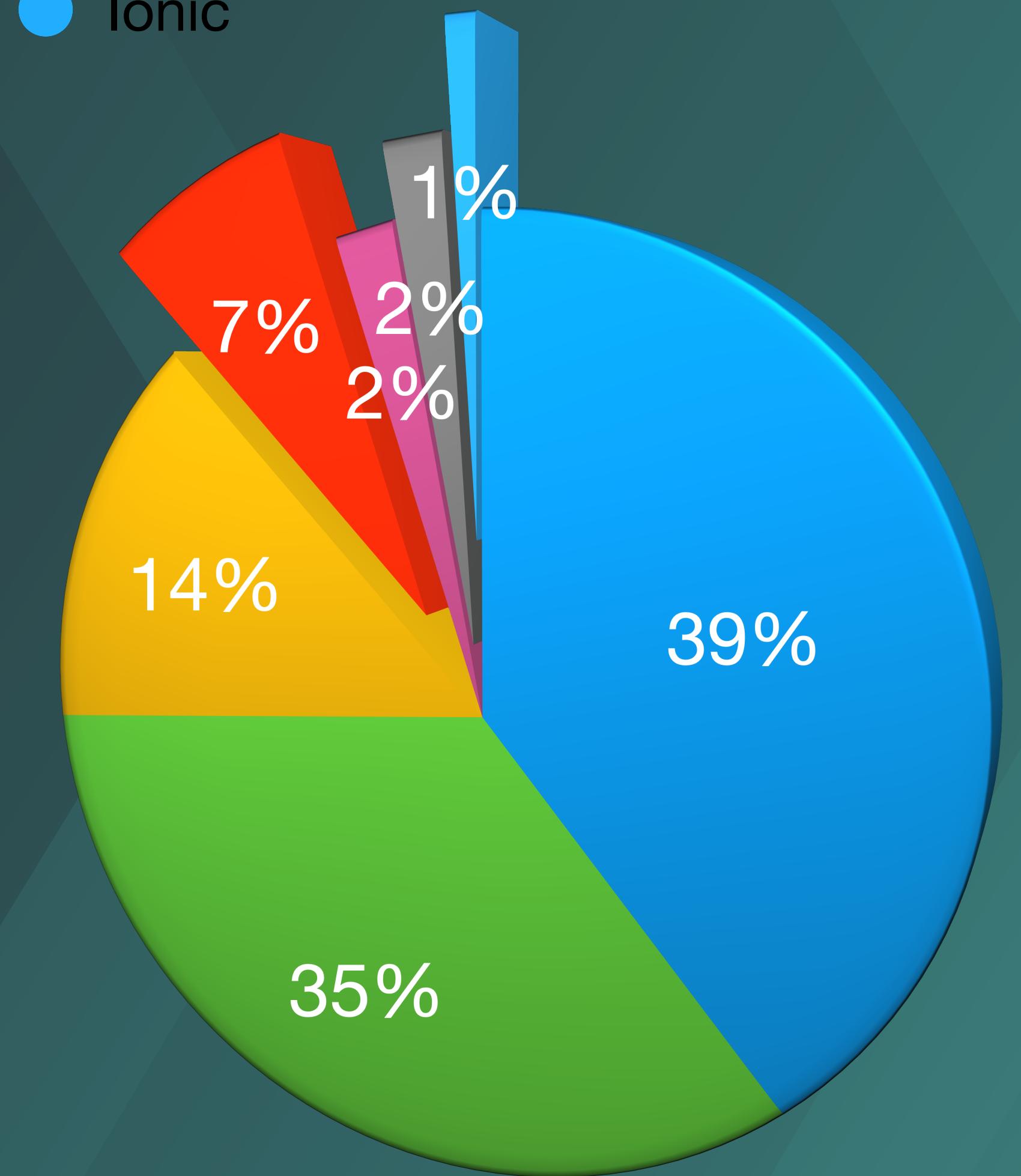
# Check the quiz



# Previous Year

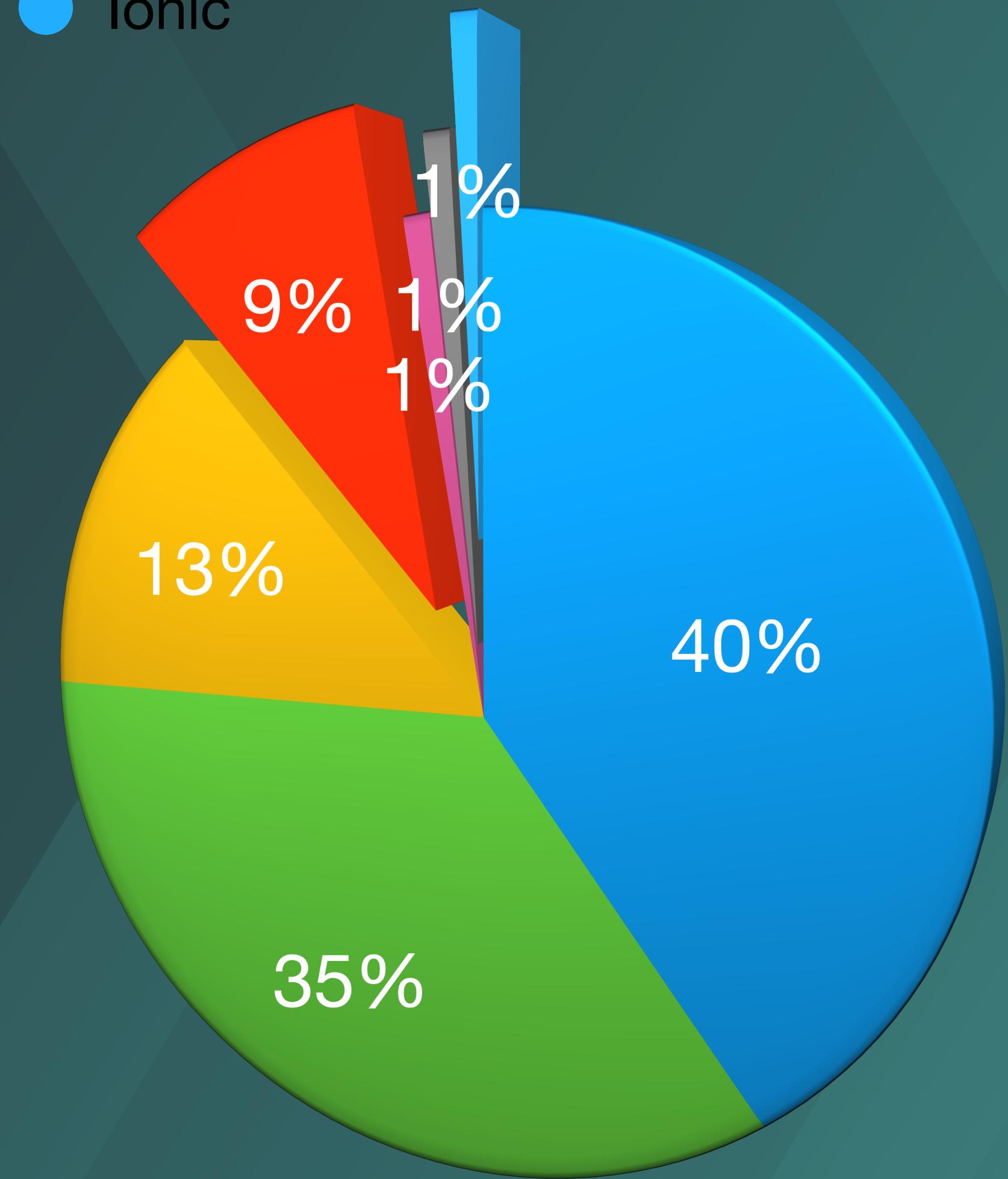


Kotlin    Flutter    ReactNative    Java    Xamarin  
Swift    Ionic



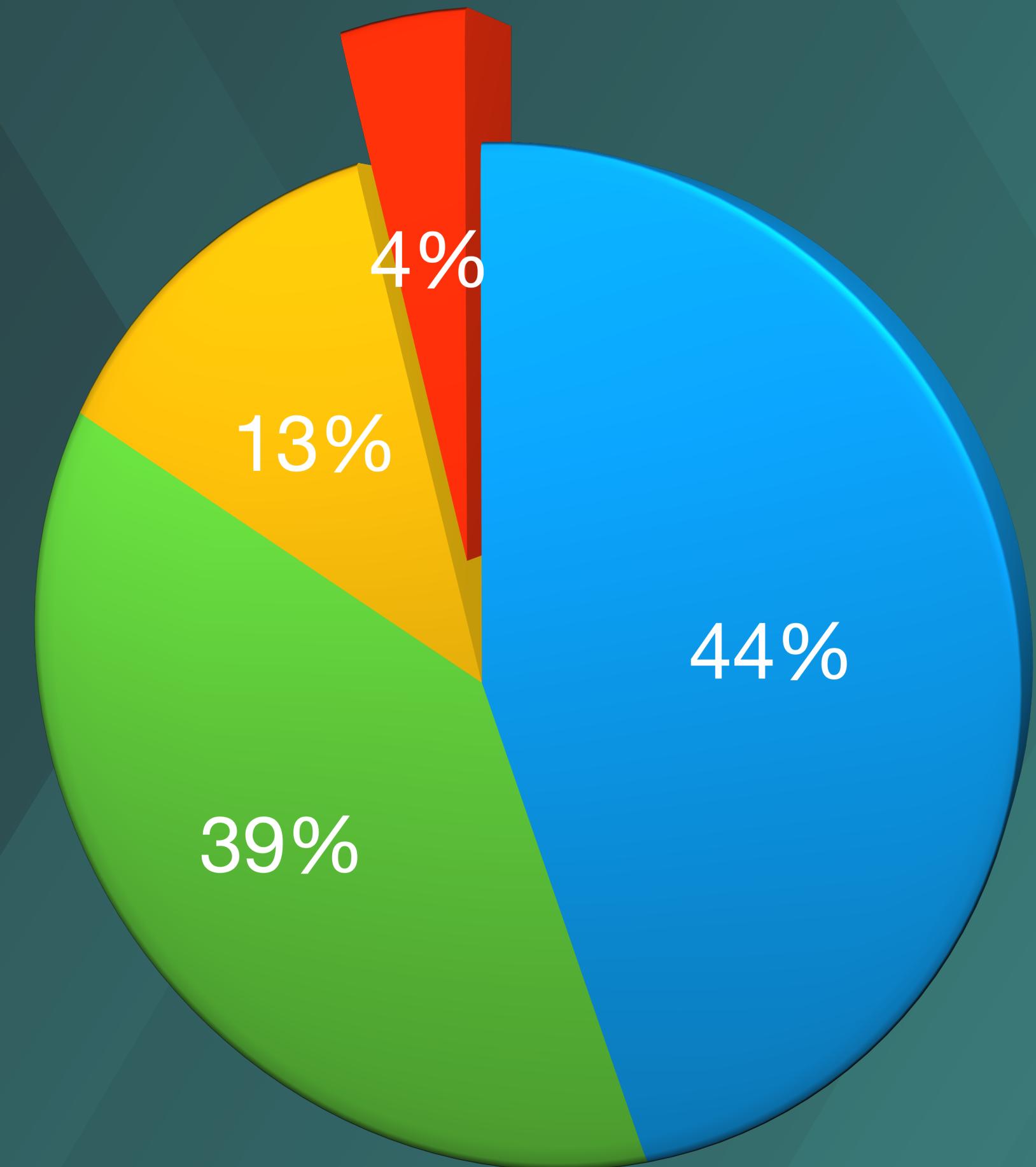
2019

Kotlin    Flutter    ReactNative    Java    Xamarin  
Swift    Ionic

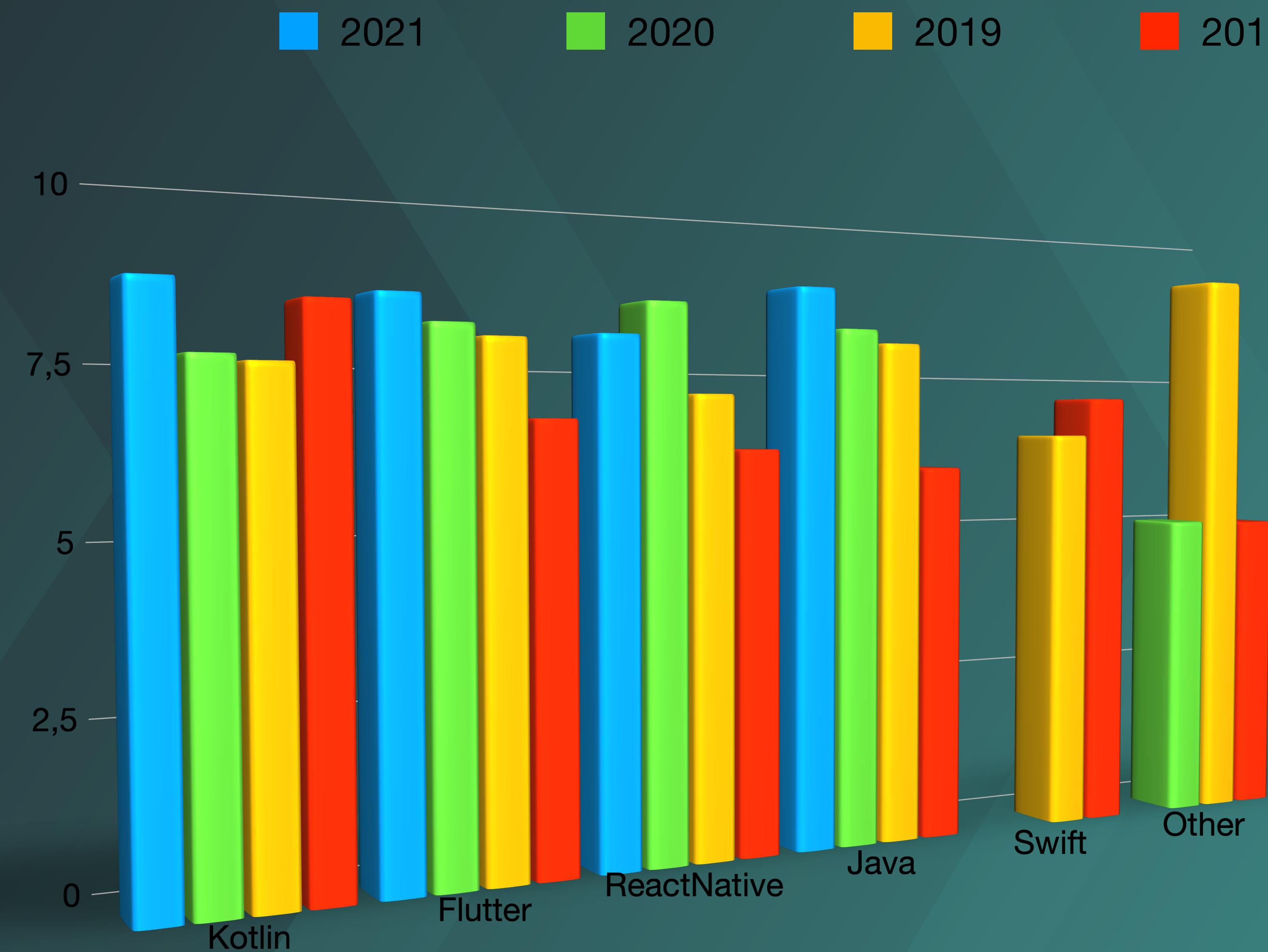


2020

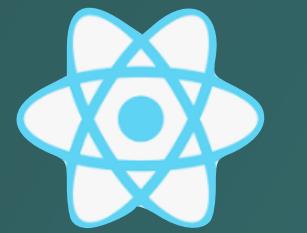
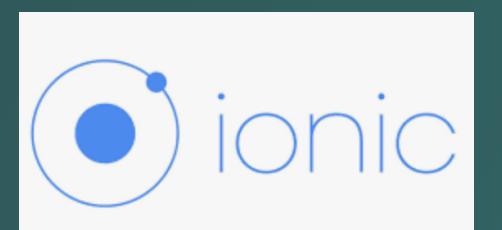
Kotlin Flutter ReactNative Java



2021



# This year



# Why Kotlin

- Modern programming language
- Object oriented
- Lambdas, Coroutines, Properties
- Since 2011
- Open Sources 2012
- Official First Class Android Citizen since 2017
- IntelliJ and Android Studio 3.0+





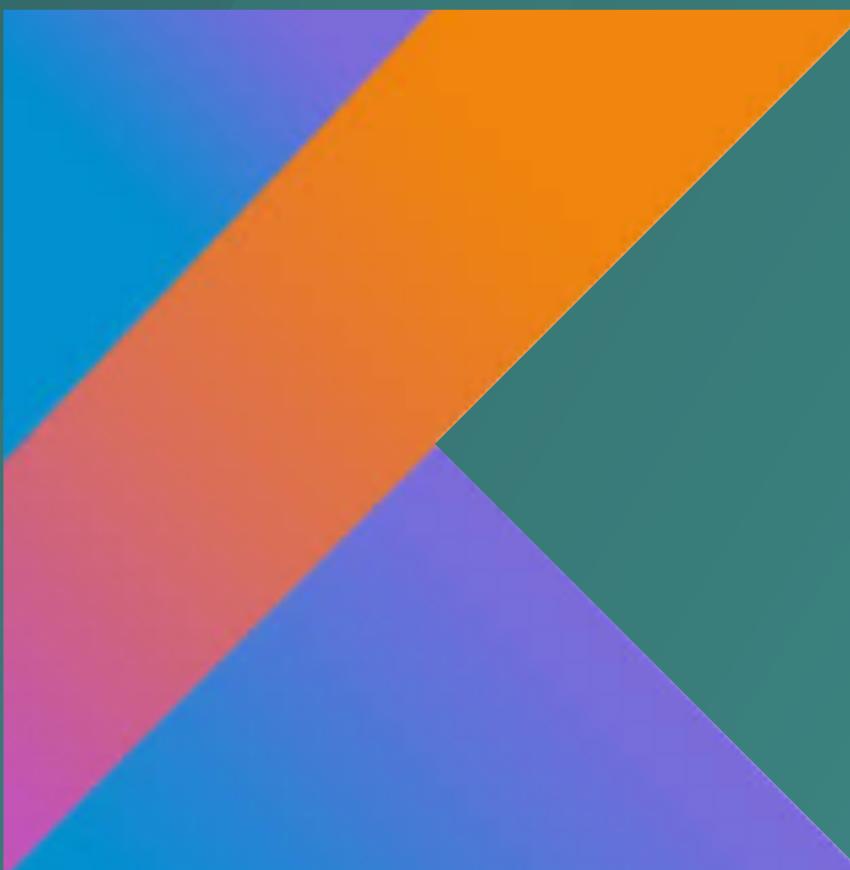
# Why Kotlin

```
public class Aquarium {  
  
    private int mTemperature;  
  
    public Aquarium() { }  
  
    public int getTemperature() {  
        return mTemperature;  
    }  
  
    public void setTemperature(int mTemperature) {  
        this.mTemperature = mTemperature;  
    }  
  
    @Override  
    public String toString() {  
        return "Aquarium{" +  
            "mTemperature=" + mTemperature +  
            '}';  
    }  
}
```

# Why Kotlin

```
class Aquarium (var temperature: Int = 0)
```

Kotlin equivalent



# Why Kotlin

## Programming, scripting, and markup languages



Rust is on its seventh year as the most loved language with 87% of developers saying they want to continue using it.

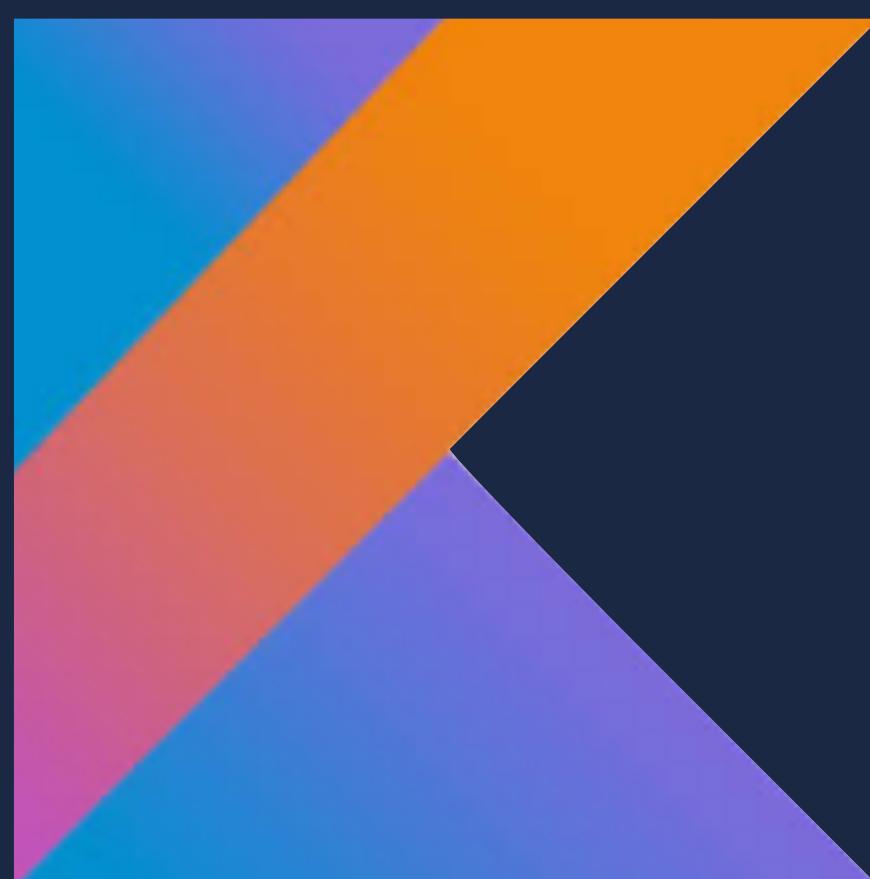
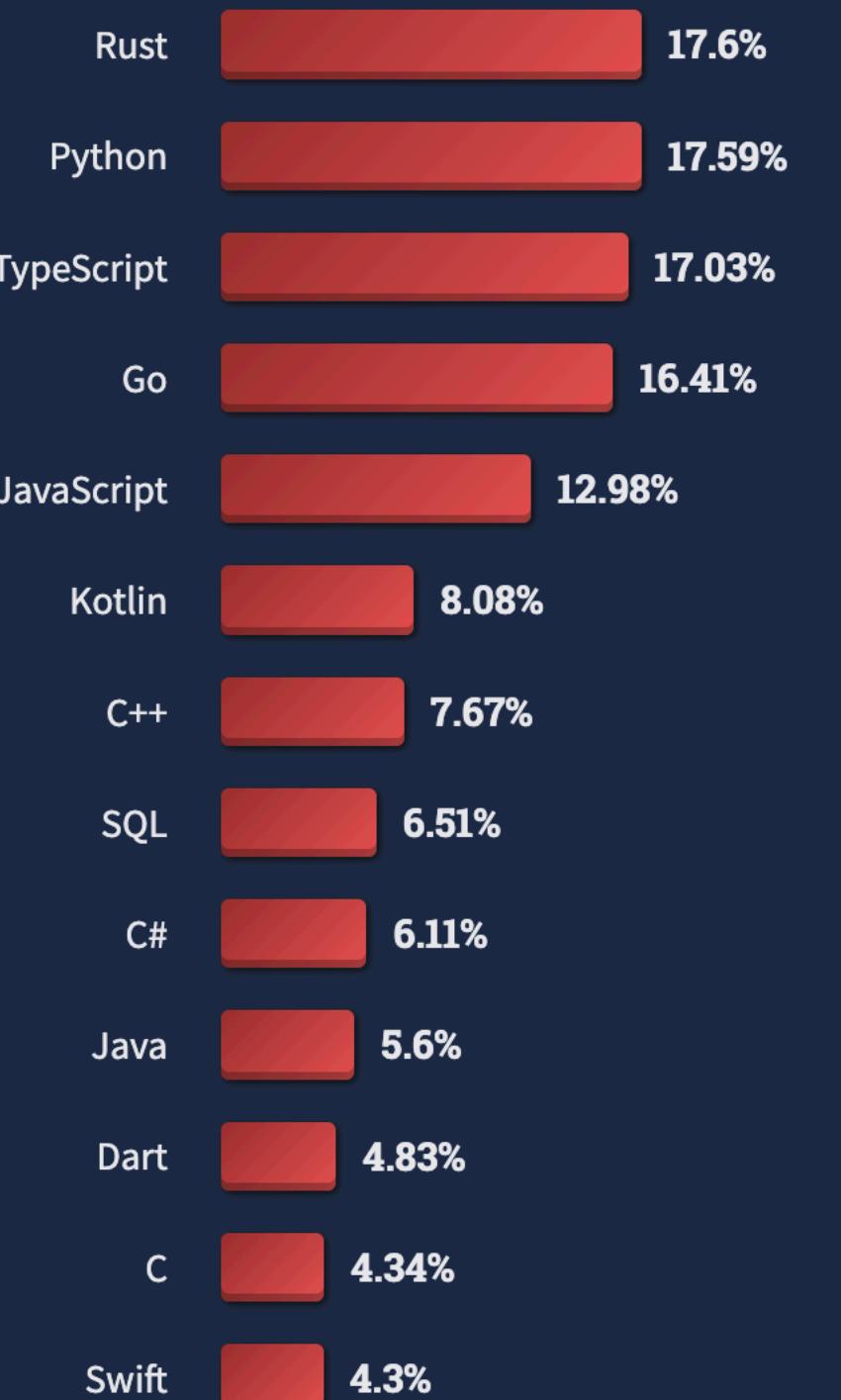
Rust also ties with Python as the most wanted technology with TypeScript running a close second.

Loved vs. Dreaded

Want

71,467 responses

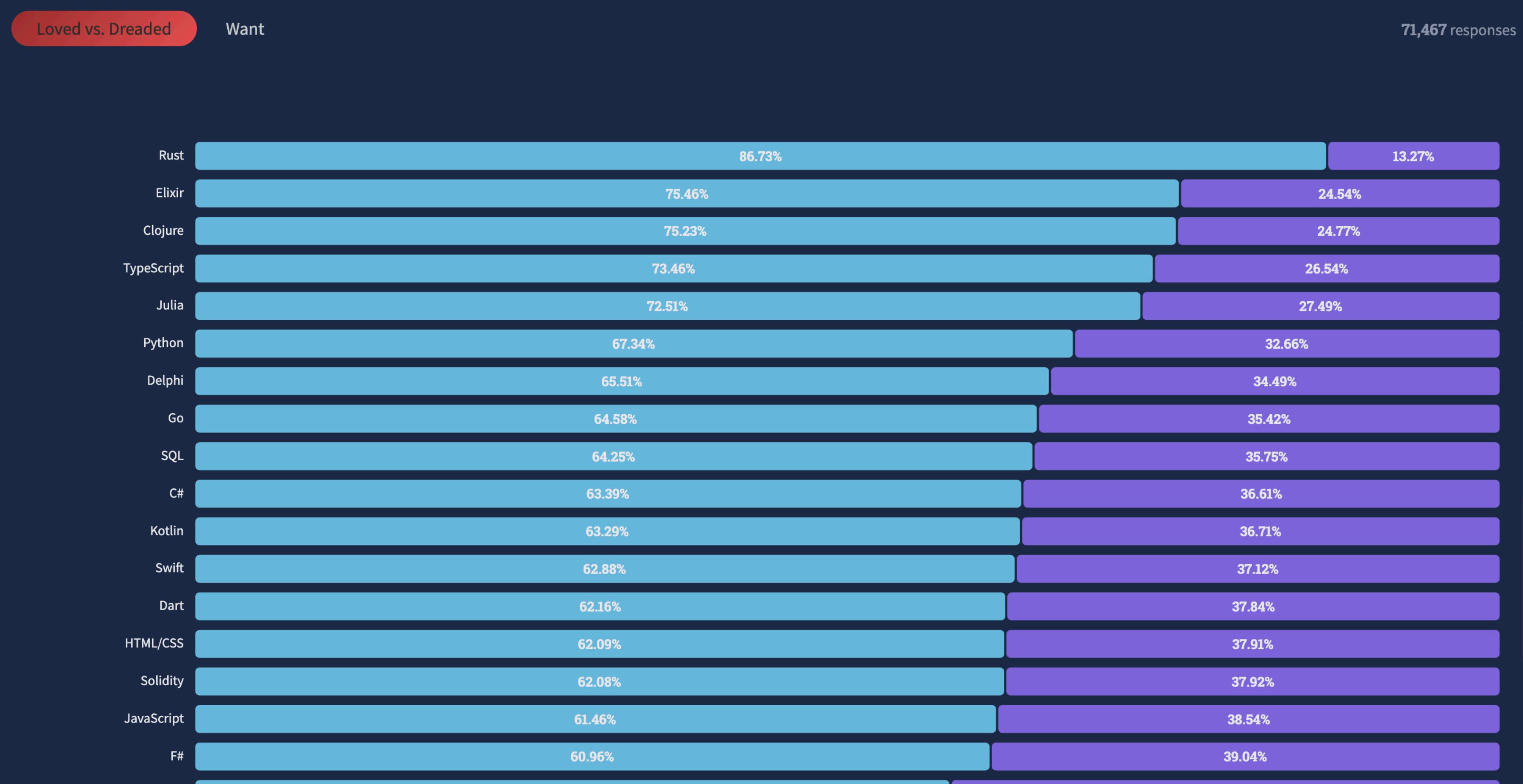
% of developers who are not developing with the language or technology but have expressed interest in developing with it



# Why Kotlin

Rust is on its seventh year as the most loved language with 87% of developers saying they want to continue using it.

Rust also ties with Python as the most wanted technology with TypeScript running a close second.



Kotlin v1.5.31

kotlinlang.org/docs/multiplatform.html

# Multiplatform programming

Last modified: 13 September 2021

Multiplatform projects are in Alpha. Language features and tooling may change in future Kotlin versions.

Support for multiplatform programming is one of Kotlin's key benefits. It reduces time spent writing and maintaining the same code for different platforms while retaining the flexibility and benefits of native programming.

This is how Kotlin Multiplatform works.

Common Kotlin

JVM Code

JS Code

Kotlin/JVM

Kotlin/JS

Kotlin/Native

Native Code

Solutions Docs Community Teach Play

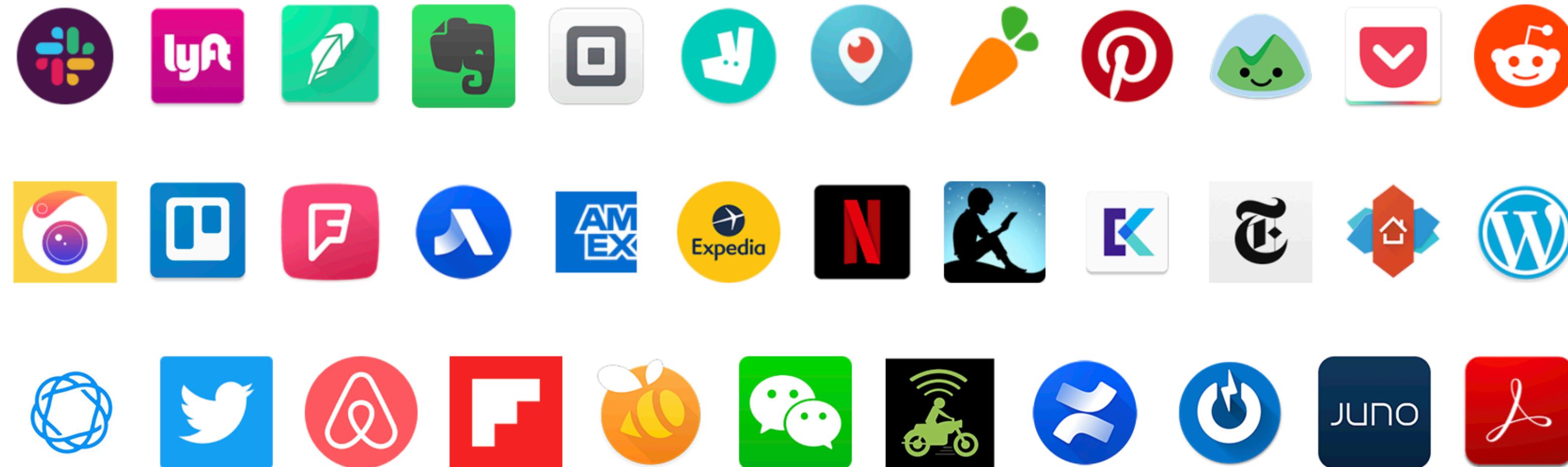
Home Get started Kotlin overview Multiplatform programming Kotlin Multiplatform Mobile Kotlin for server side Kotlin for Android Kotlin for JavaScript Kotlin Native Kotlin for data science Kotlin for competitive programming What's new Basics Concepts Multiplatform programming Platforms Releases and roadmap Standard library Official libraries API reference Language reference Tools Learning materials Other resources

Why  Kotlin

## Apps built with Kotlin

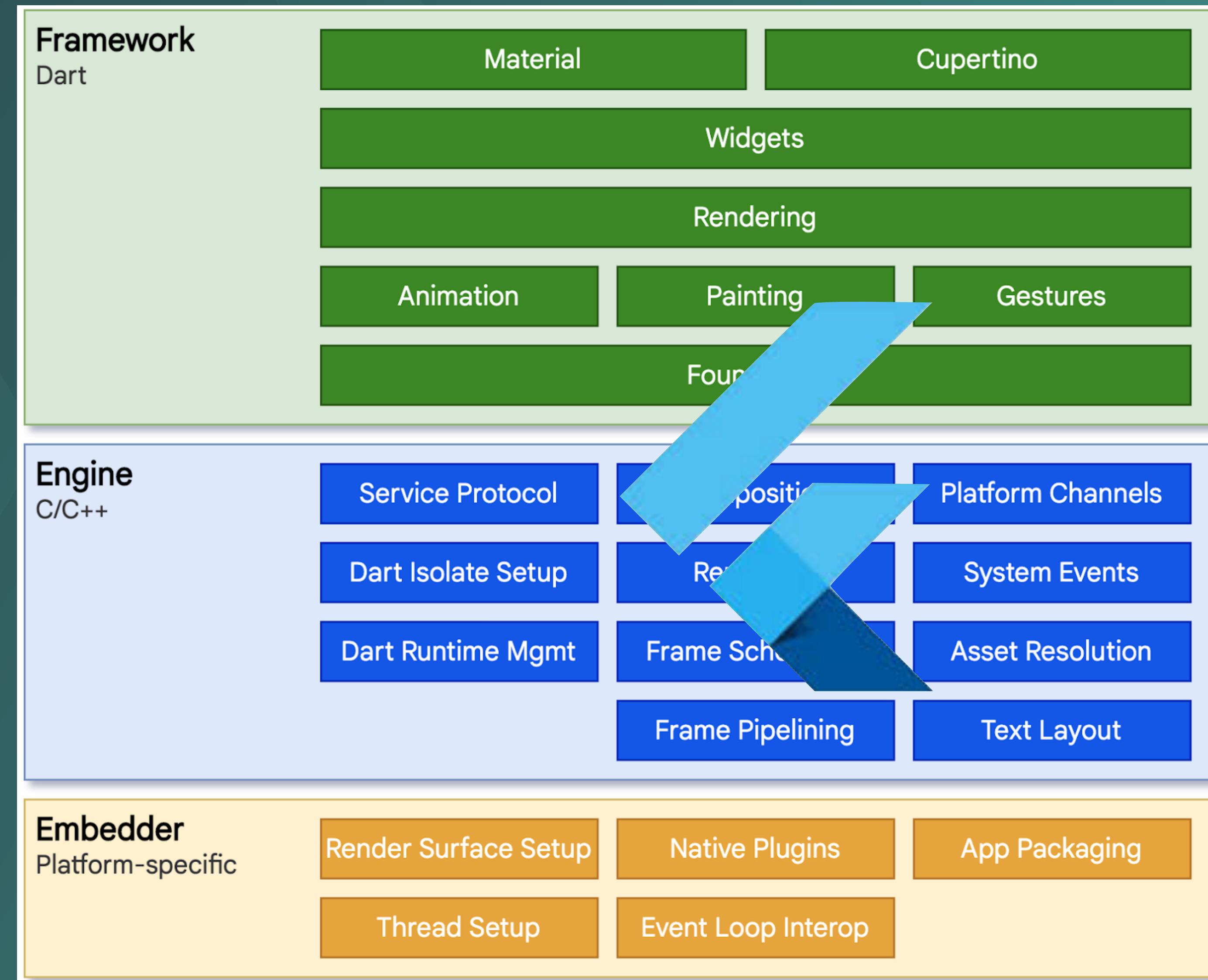
Many apps are already built with Kotlin—from the hottest startups to Fortune 500 companies. Learn how Kotlin has helped their teams become more productive and write higher quality apps.

[SEE DEVELOPER STORIES](#)

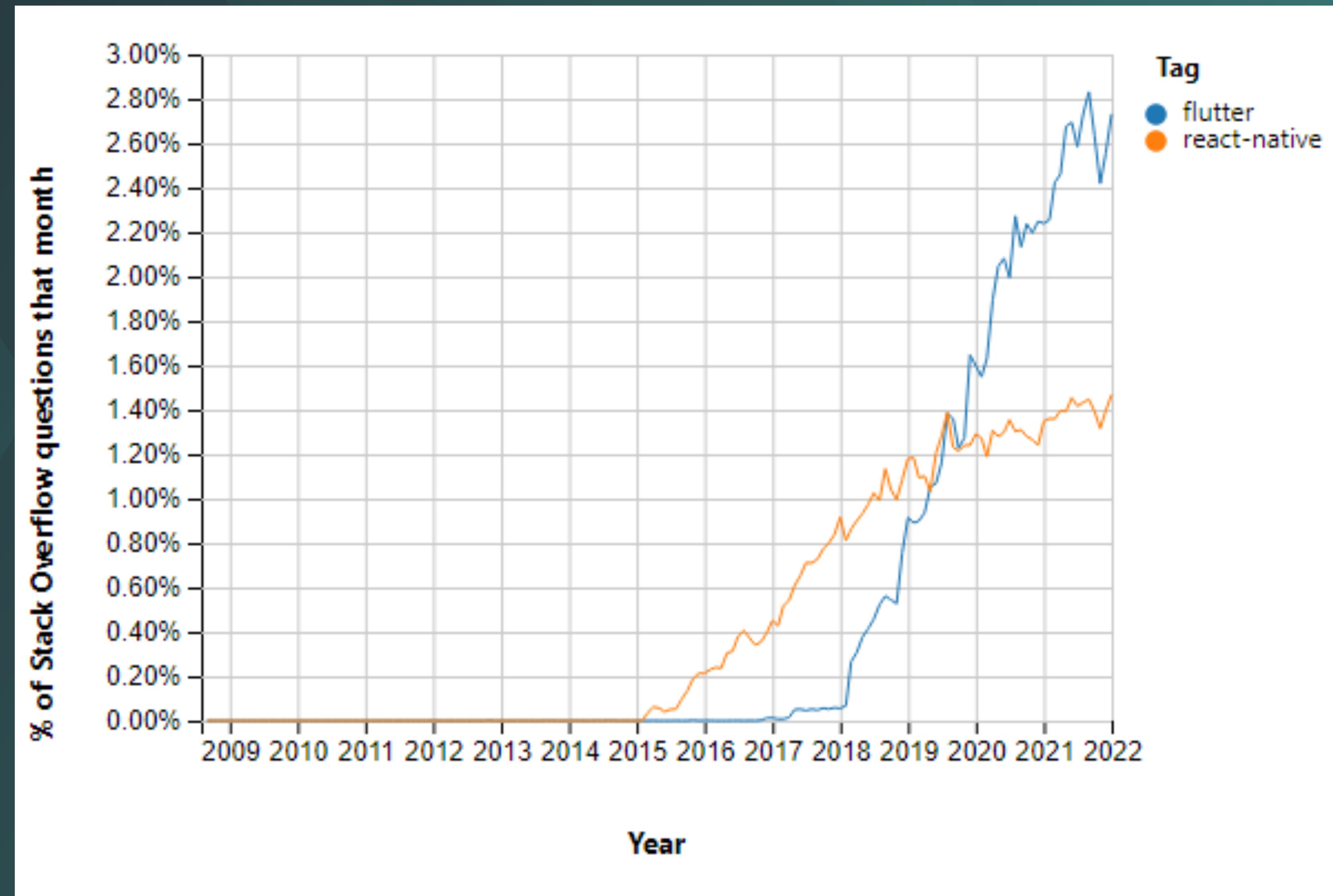


# Why Flutter

- Platform-agnostic
- Simplifies and speeds application development
- Easy to learn and easy to use
- Scales well
- Offer an excellent user experience



# Why Flutter



# Course Goals

- Knowledge of key base concepts for developing mobile applications.
- Learn the Android platform.
- Learn a framework to develop multi-platform applications (Android&iOS)



# Lecture outcomes

- Understand the generated artifacts
- Lifecycle of applications, activities and fragments.
- Use logs to debug and study the behavior.

