

Mobile Applications

Fall 2023

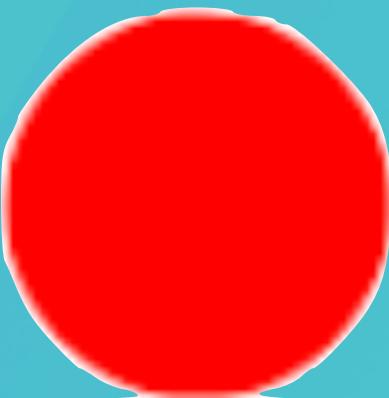
Prerequisites

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



What should you know...

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



Bonus

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



Options



2007



2008



2010



Native Options



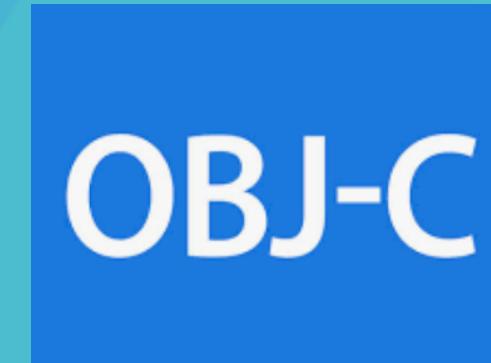
2008



2017

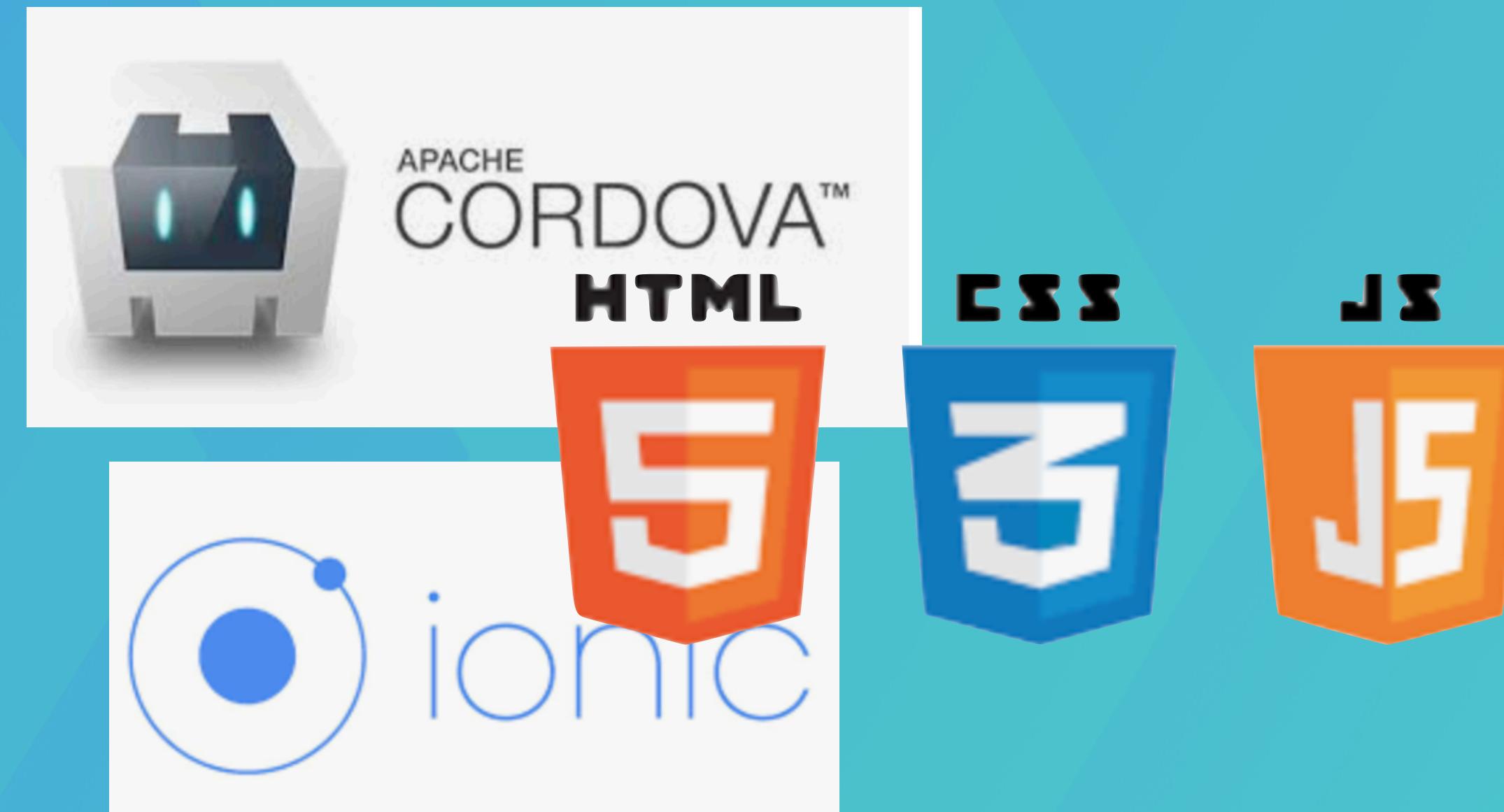


2007



2014

Non-Native Options



2013

Hybrid App

Non-Native Options

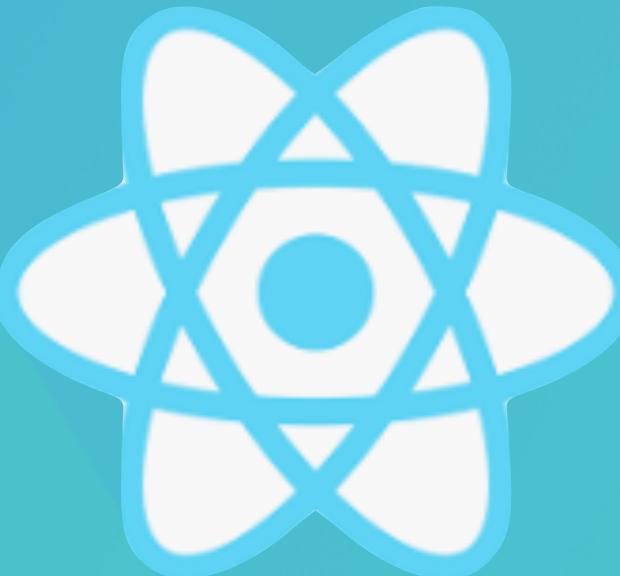


2014

JS



Compiled App



2015

JS



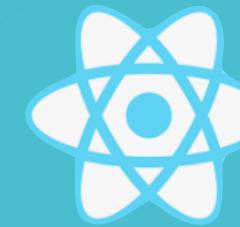
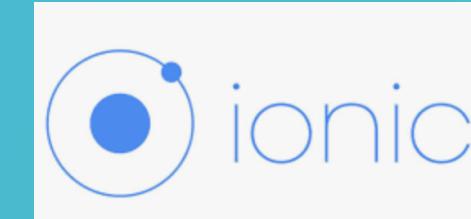
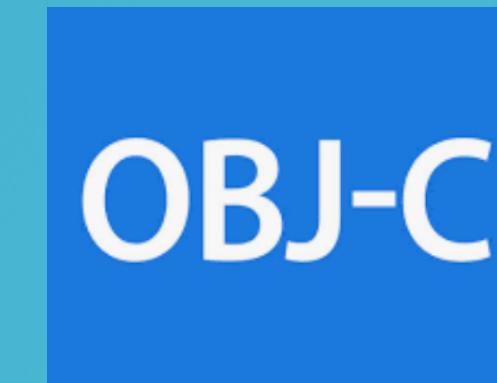
2017

Dart

Timeline



What to learn?

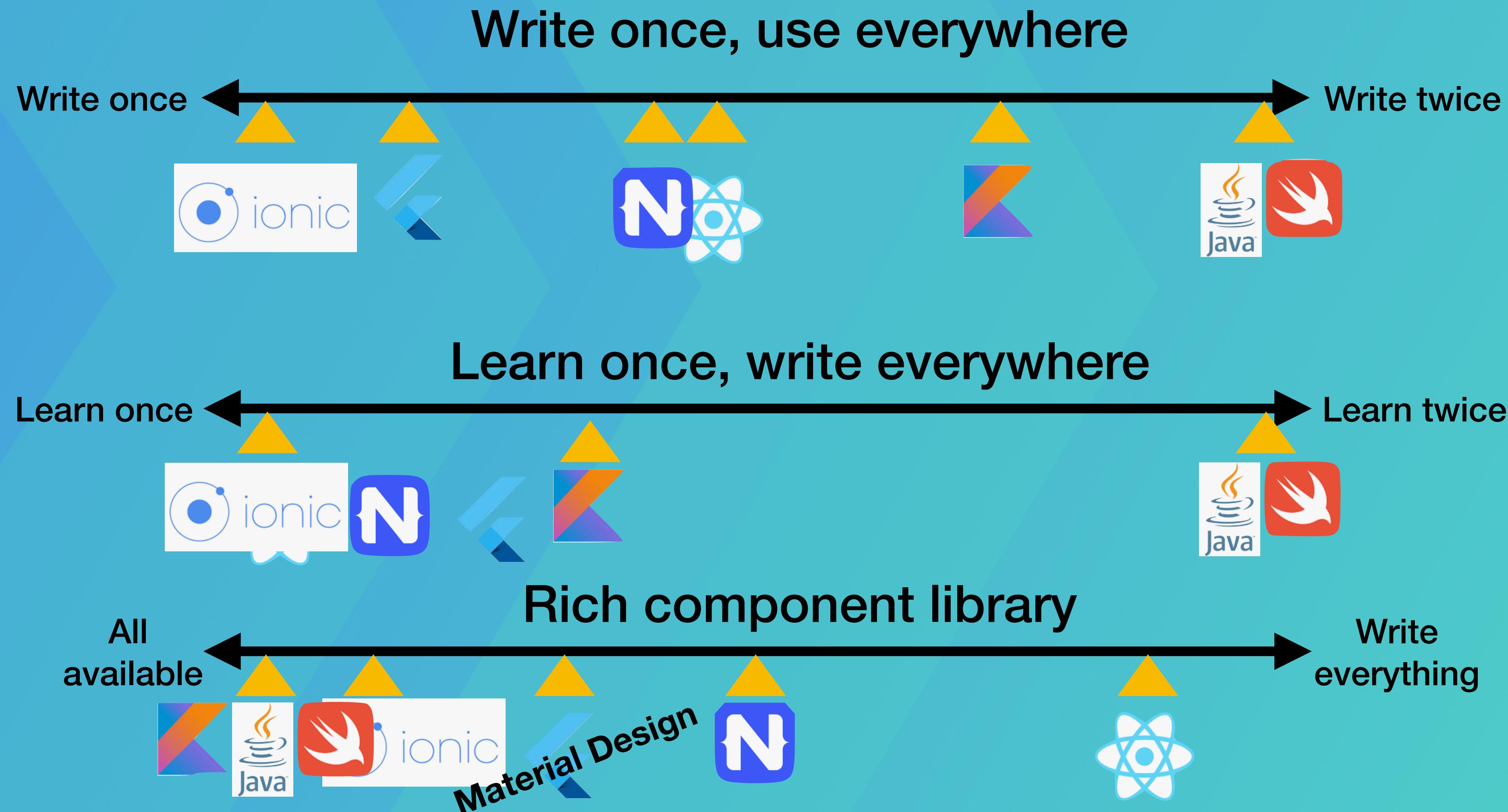


KNOW YOUR RIGHTS

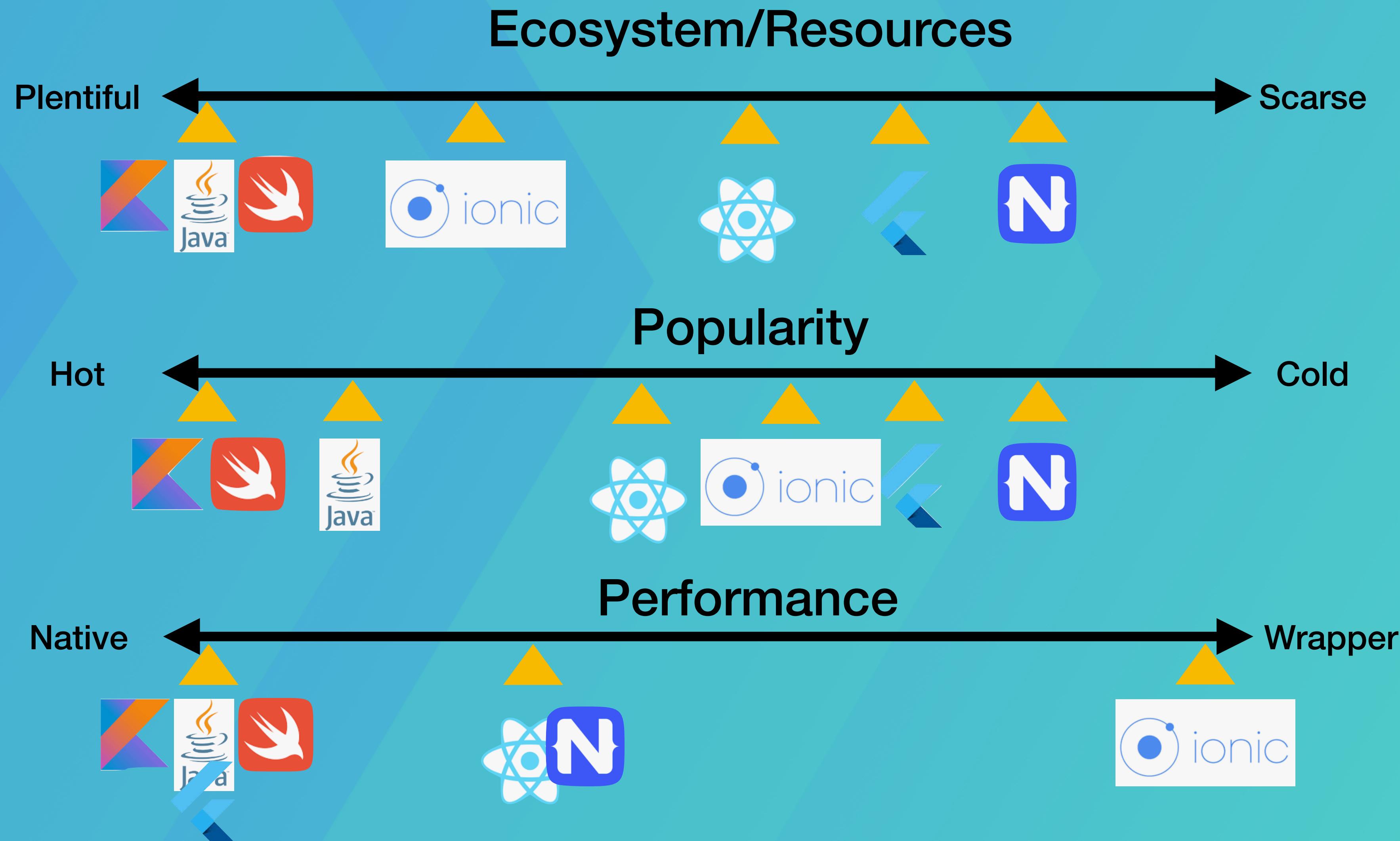
bit.ly/maQuiz2023



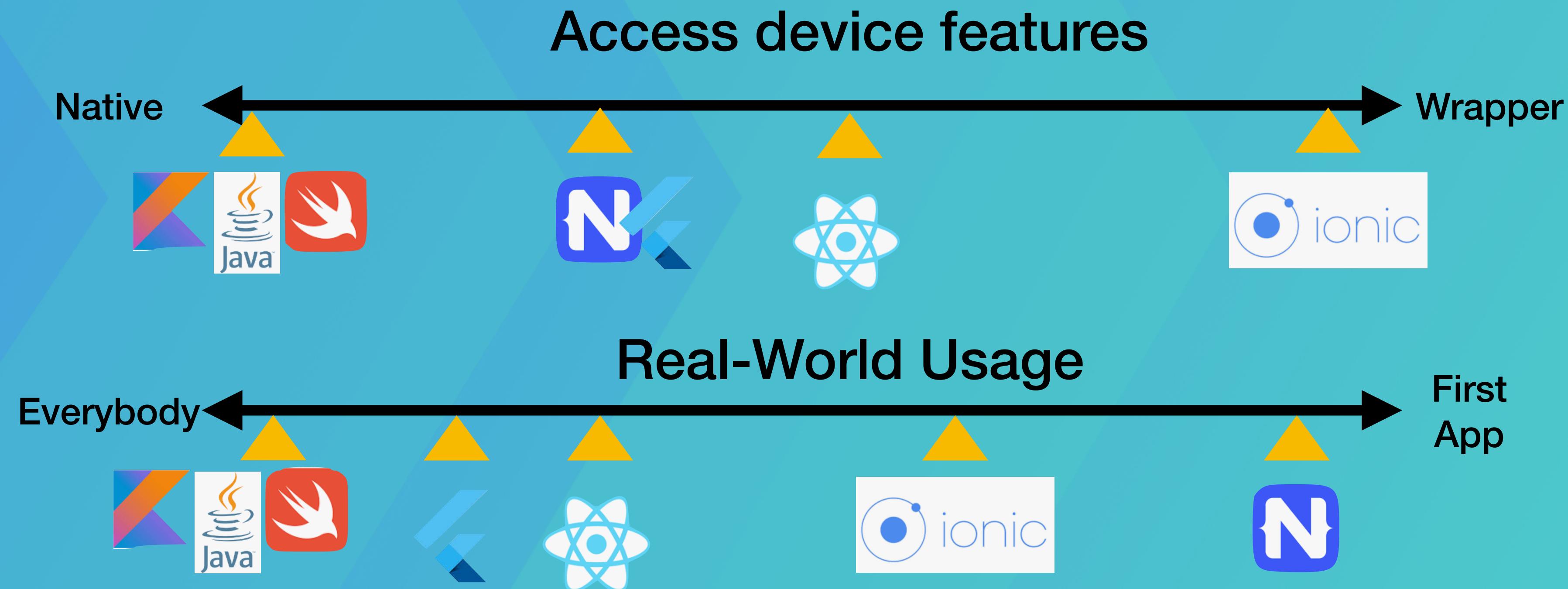
Comparison



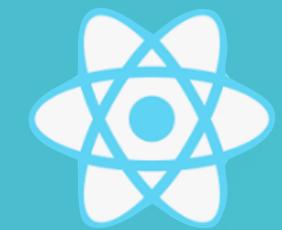
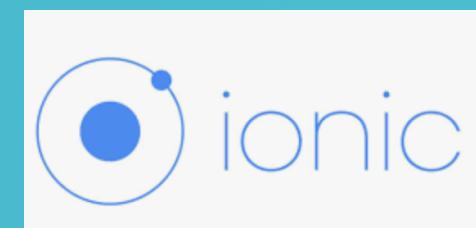
Comparison



Comparison



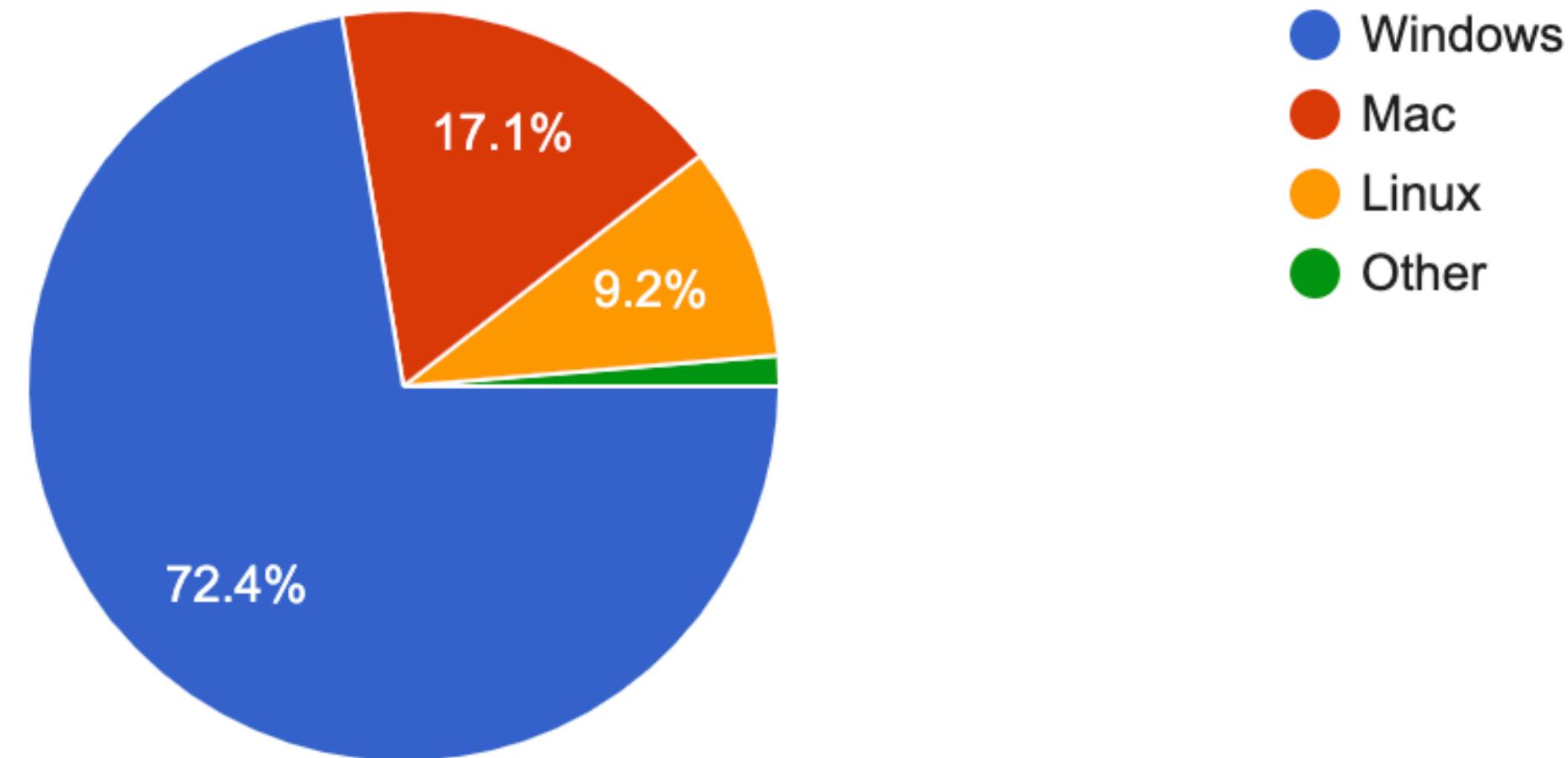
Previous years



Responses from 2018

What operating system is your development machine using?

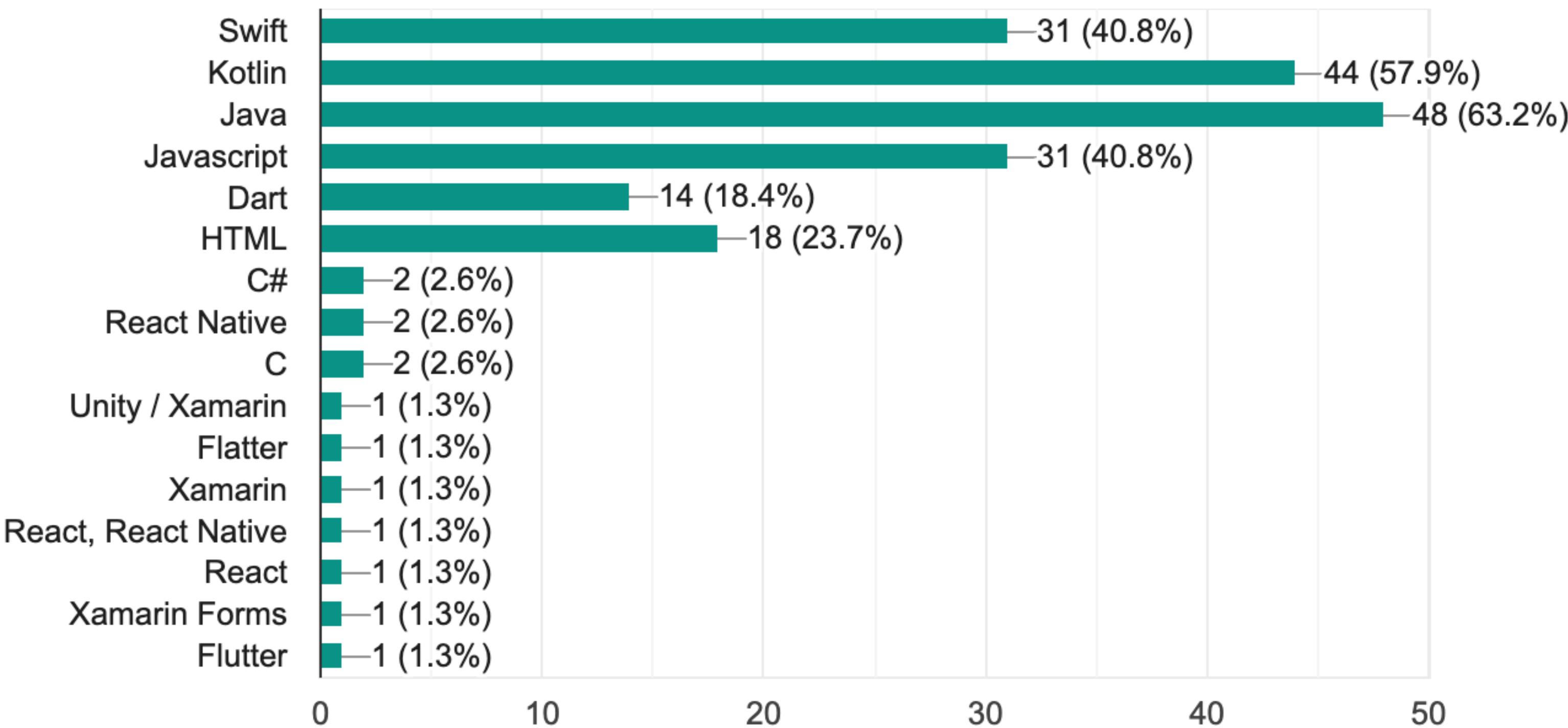
76 responses



Responses from 2018

What language would you like to use/learn?

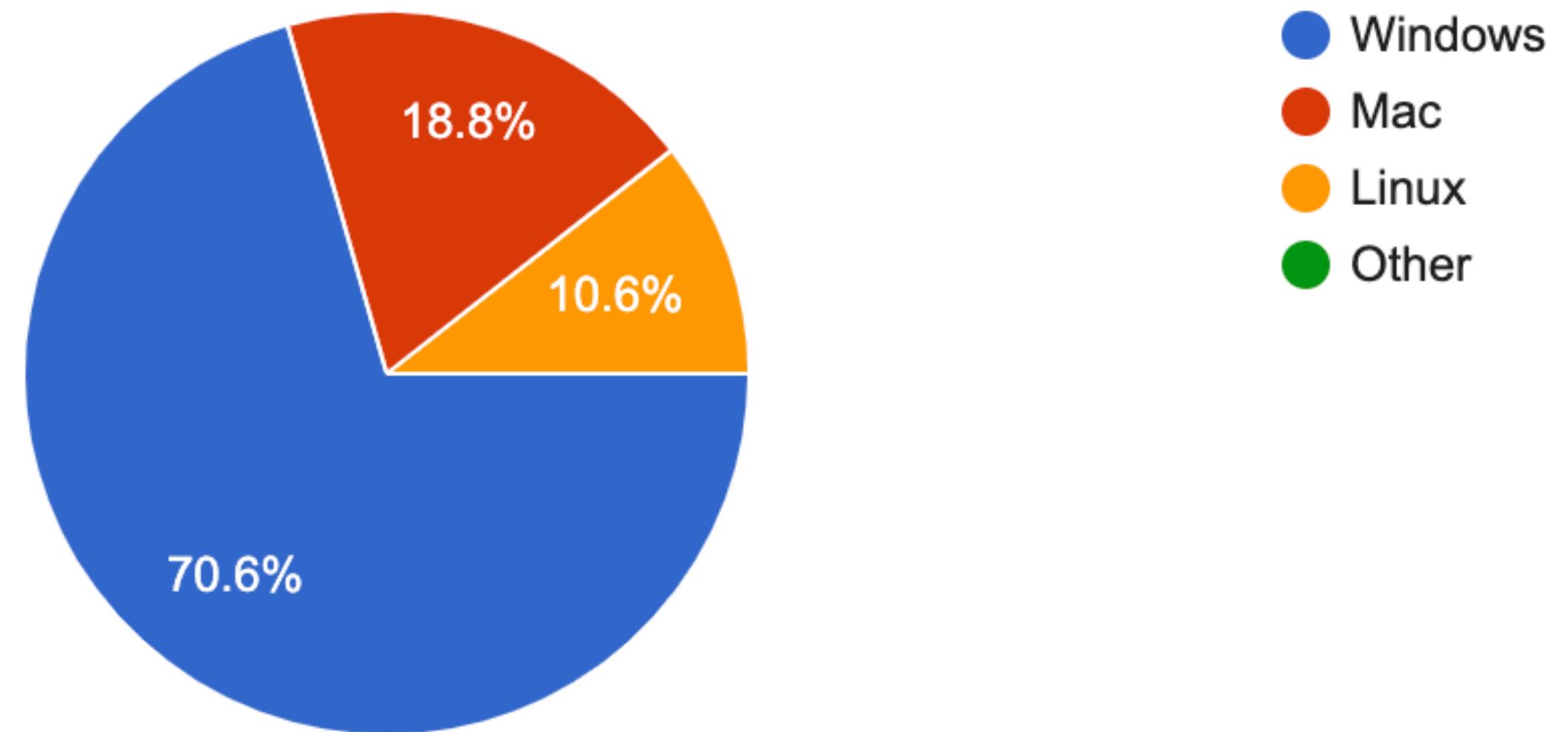
76 responses



Responses from 2019

What operating system is your development machine using?

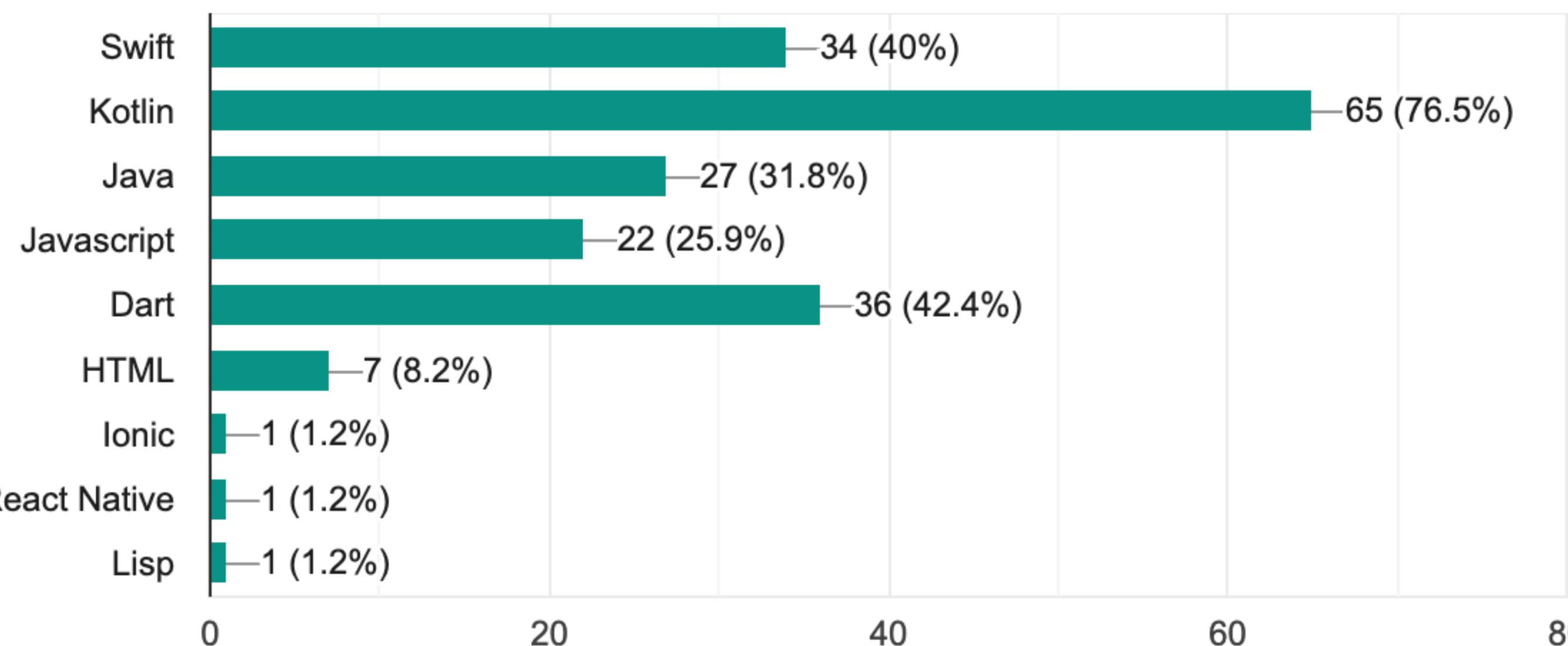
85 responses



Responses from 2019

What language would you like to use/learn?

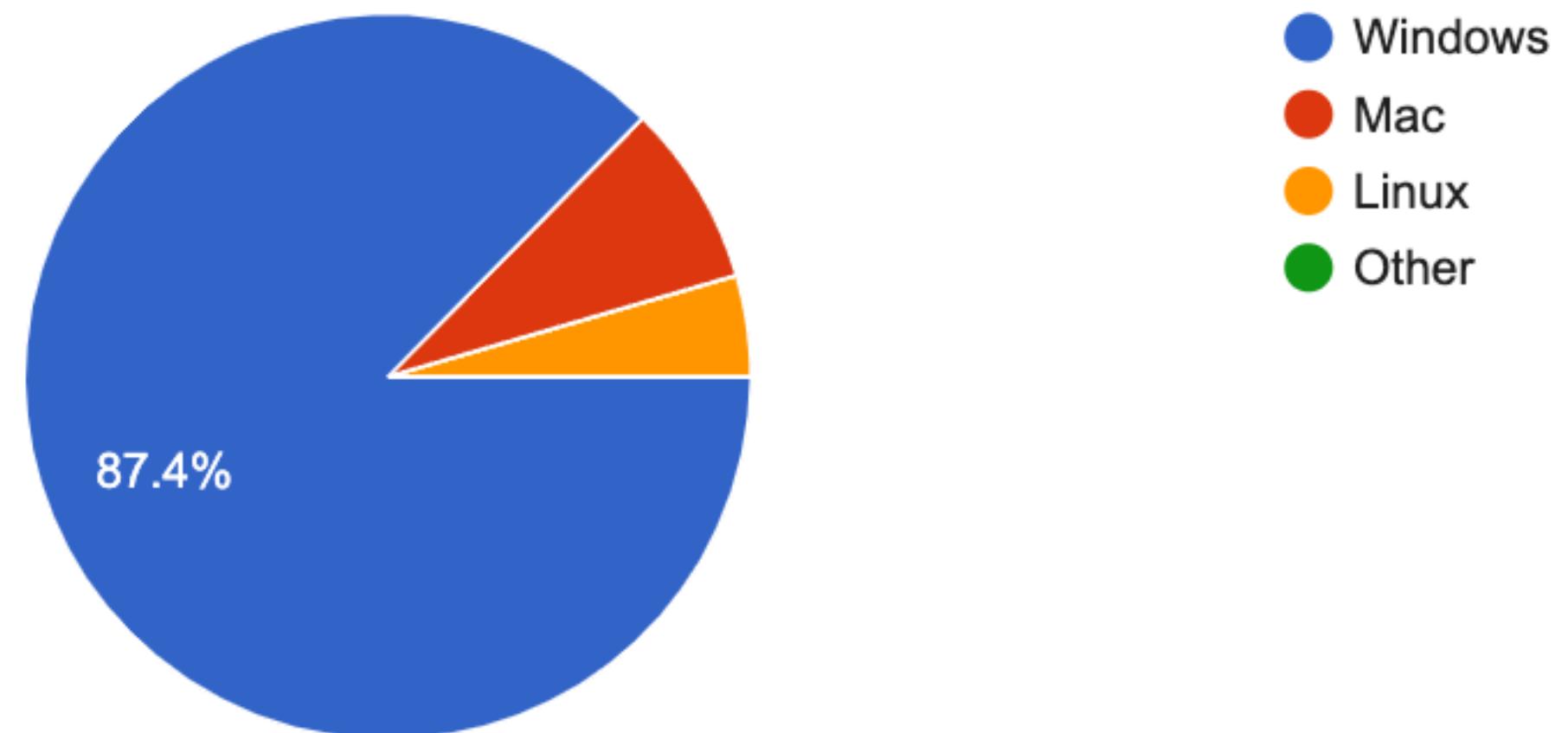
85 responses



Responses from 2020

What operating system is your development machine using?

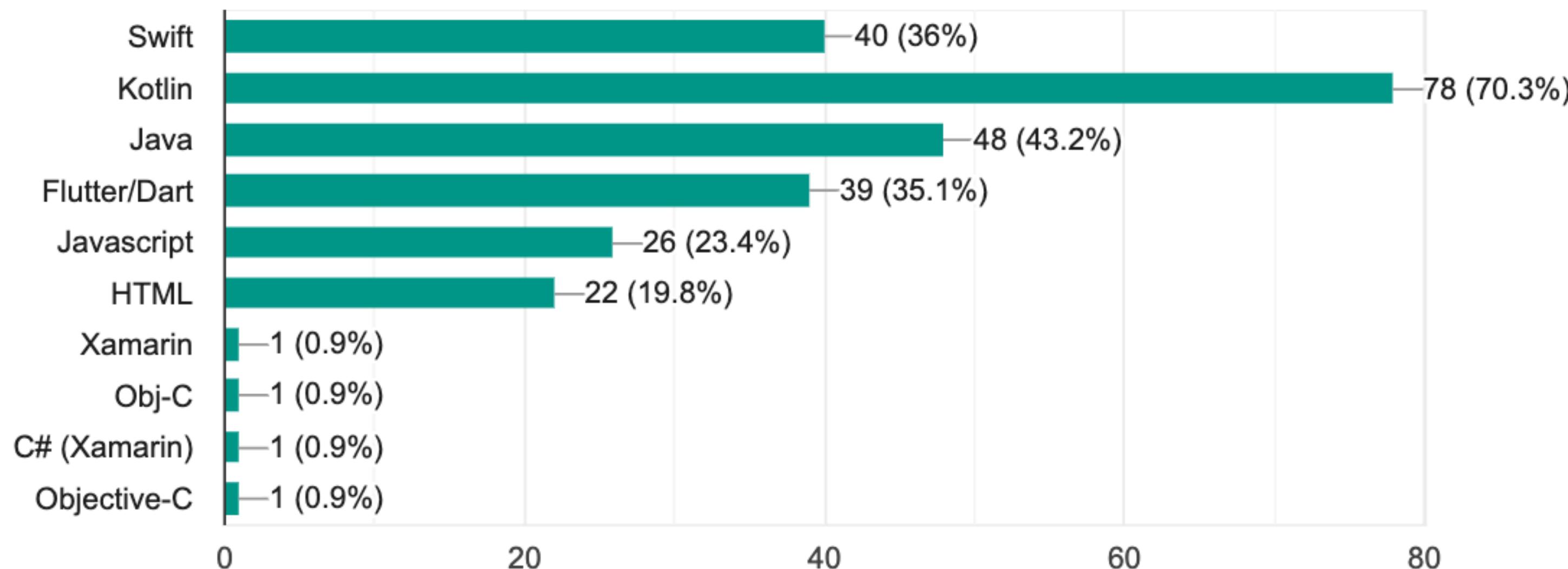
111 responses



Responses from 2020

What language would you like to use/learn?

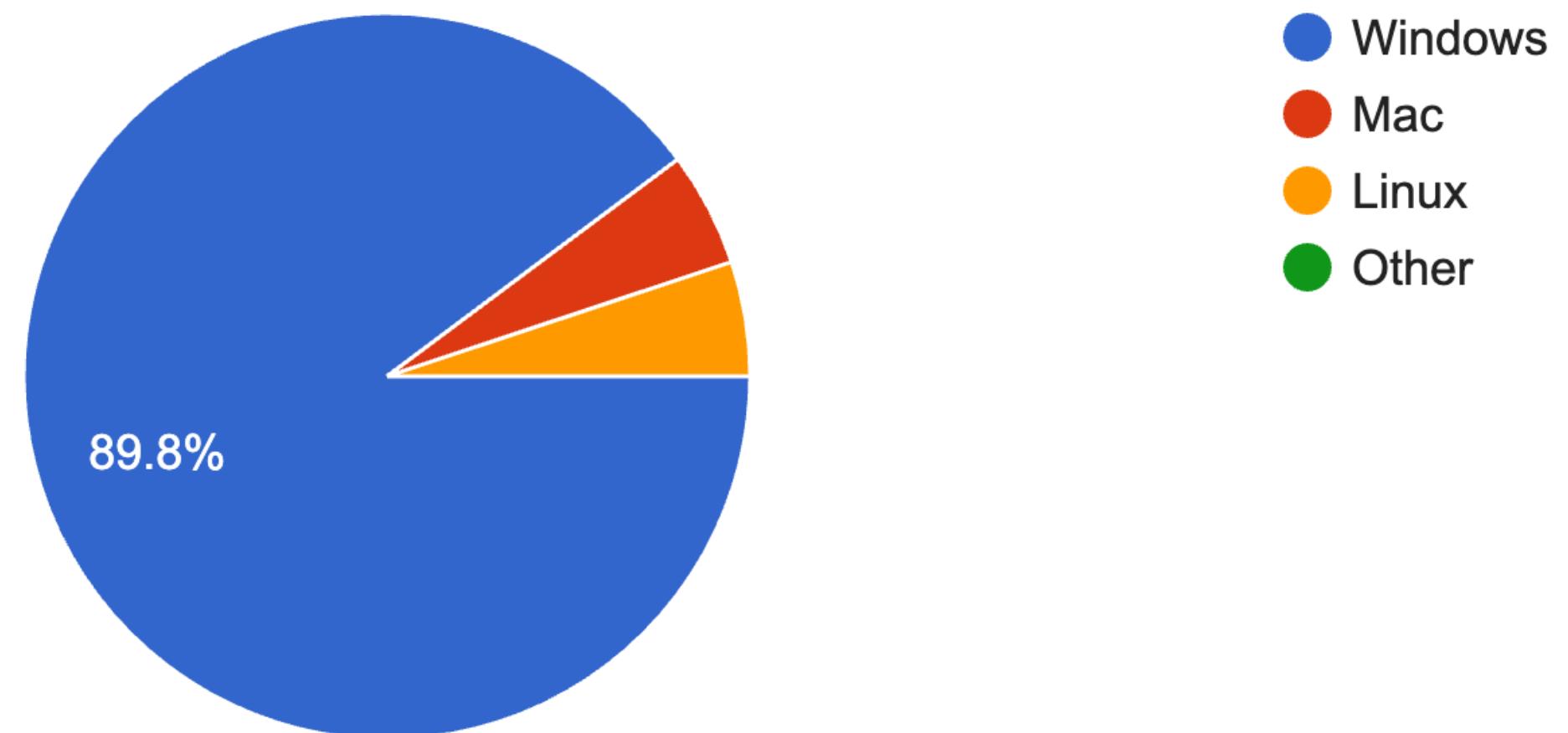
111 responses



Responses from 2021

What operating system is your development machine using?

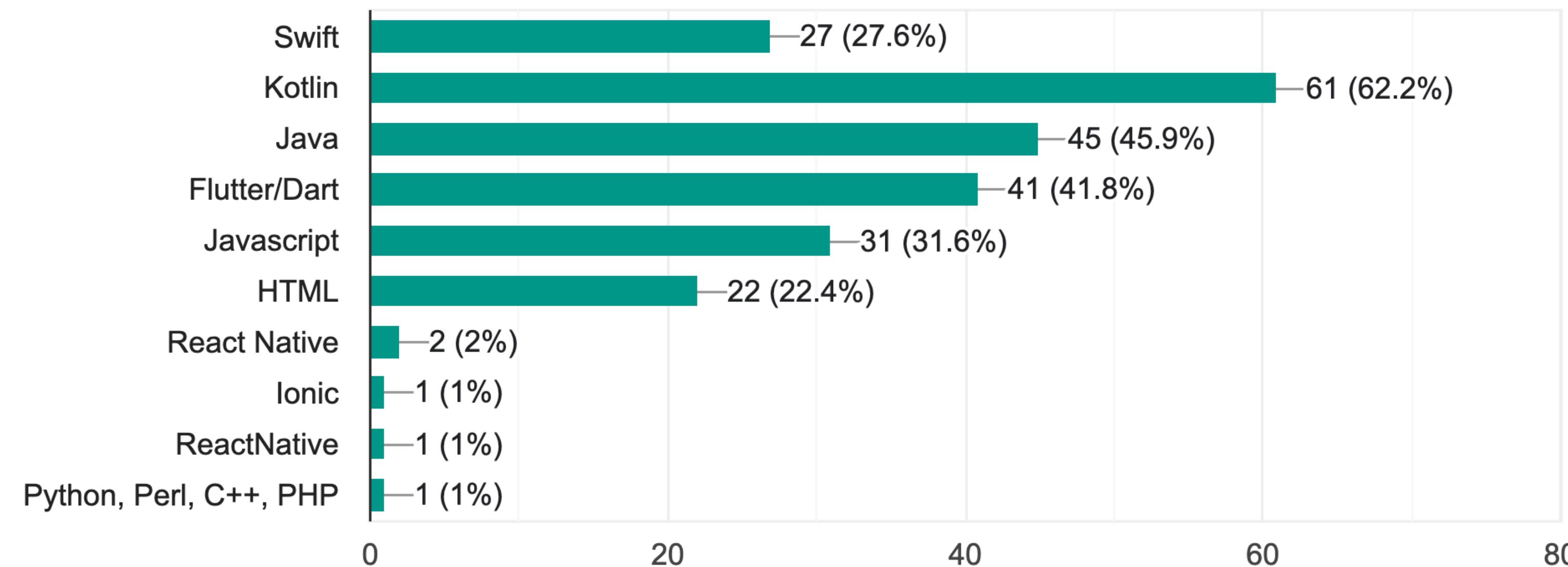
98 responses



Responses from 2021

What language would you like to use/learn?

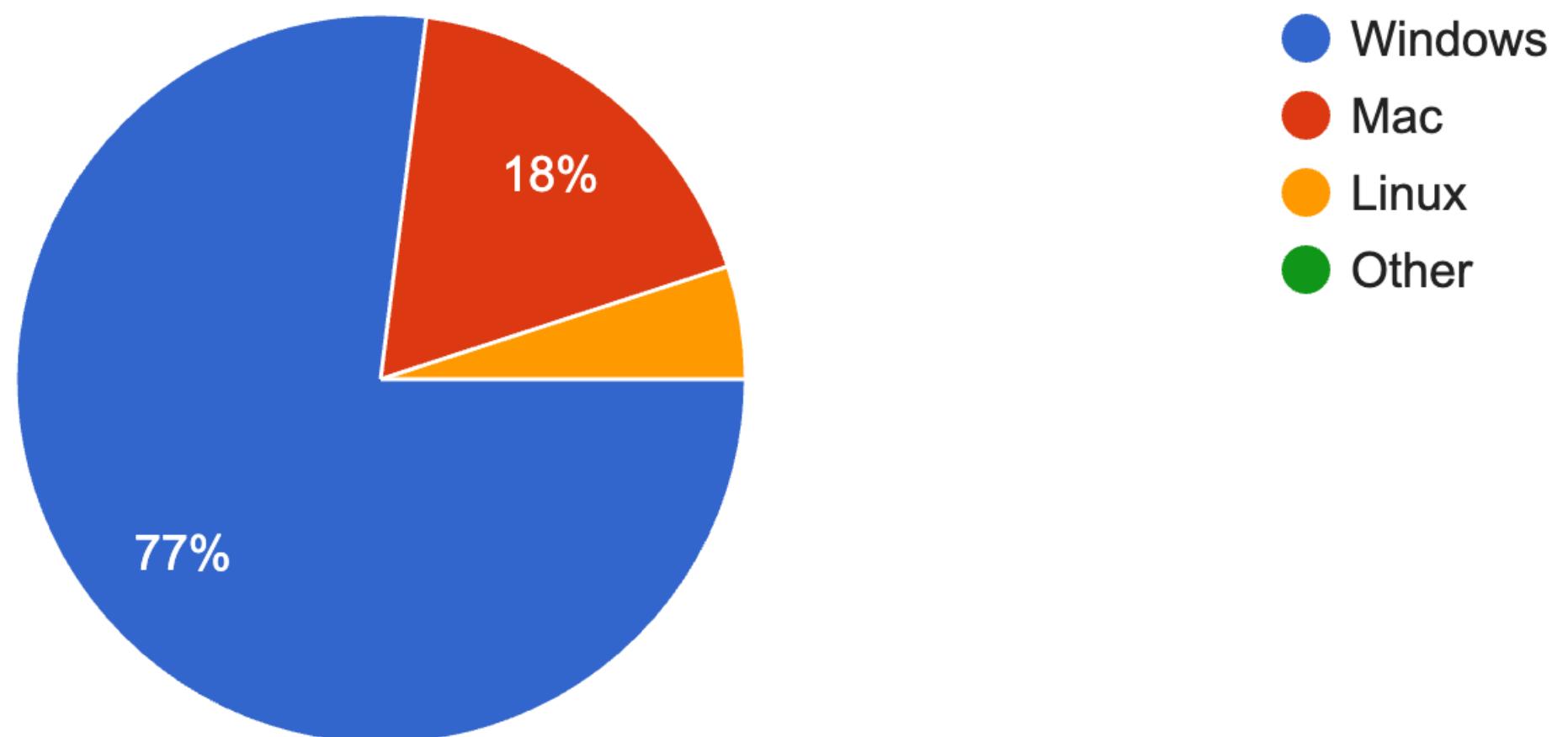
98 responses



Responses from 2022

What operating system is your development machine using?

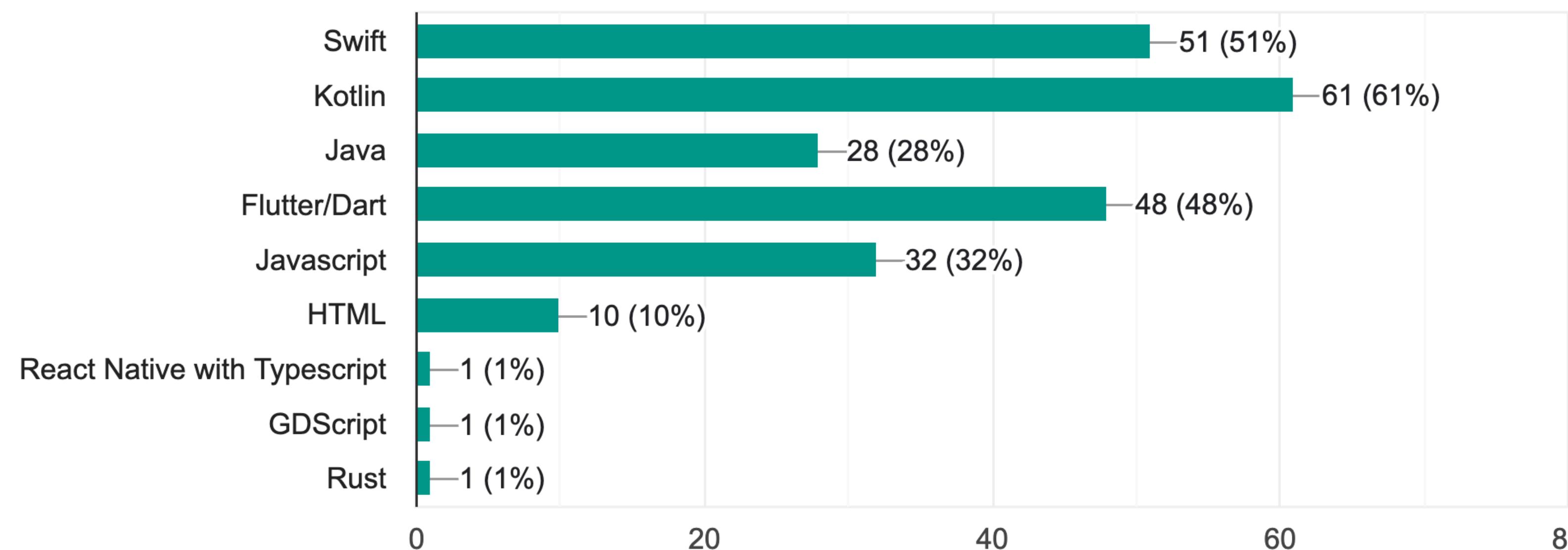
100 responses



Responses from 2022

What language would you like to use/learn?

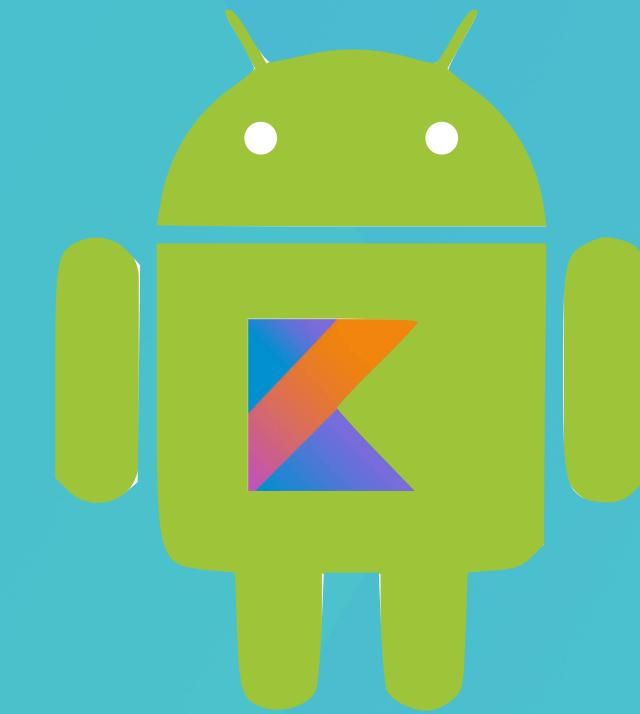
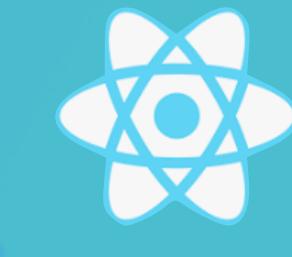
100 responses



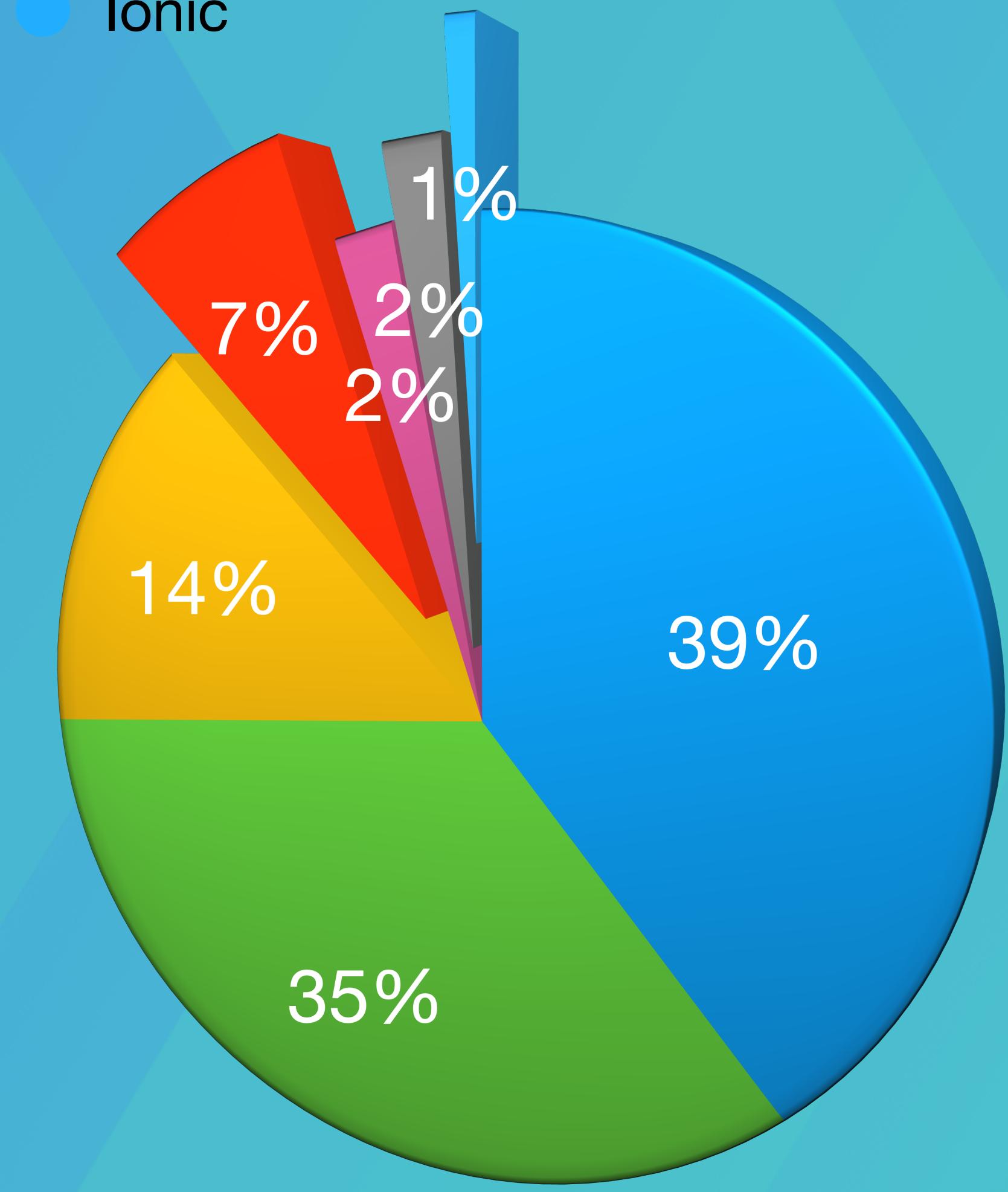
Check the quiz



Previous Year

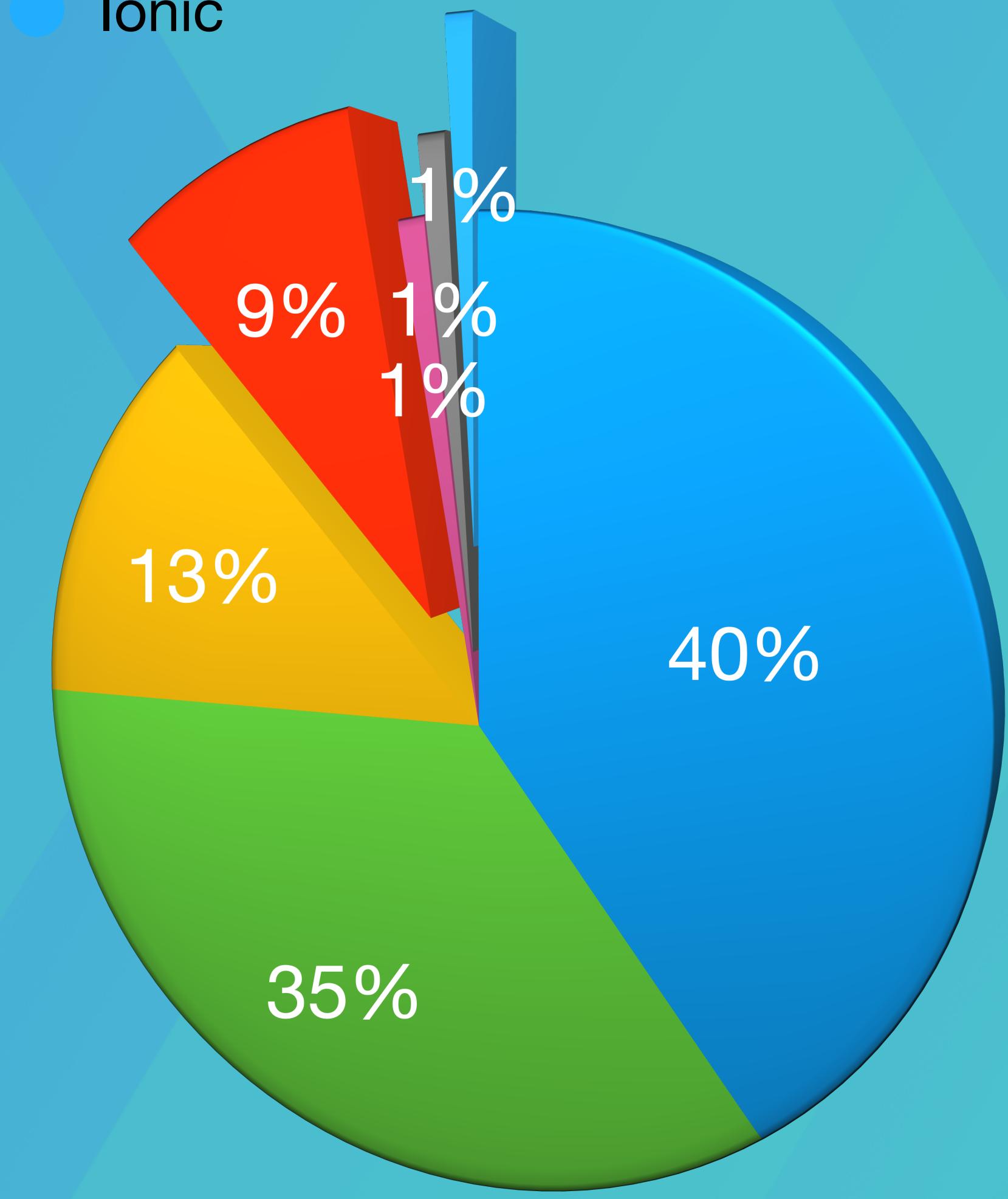


Kotlin Flutter ReactNative Java Xamarin
Swift Ionic



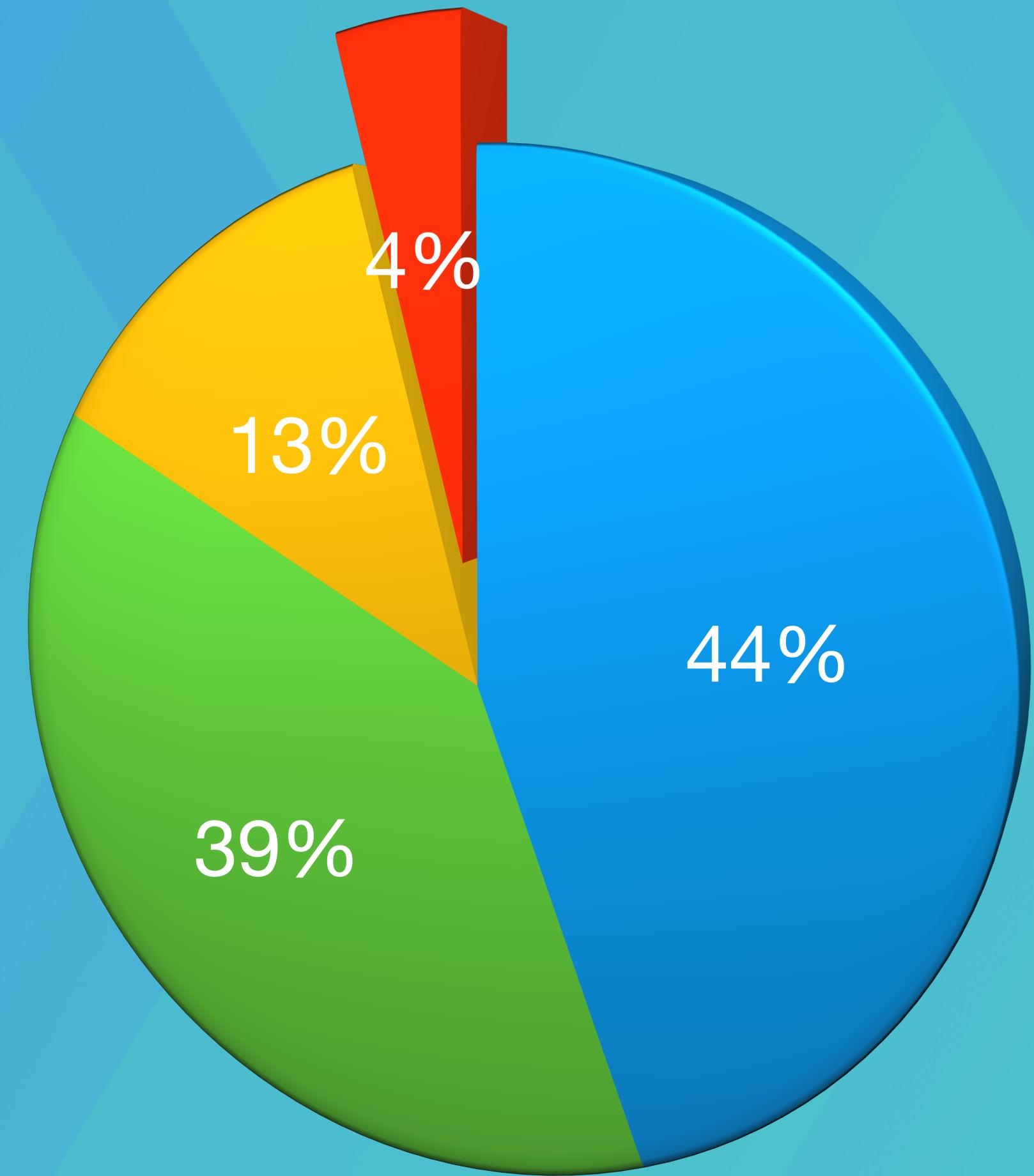
2019

Kotlin Flutter ReactNative Java Xamarin
Swift Ionic



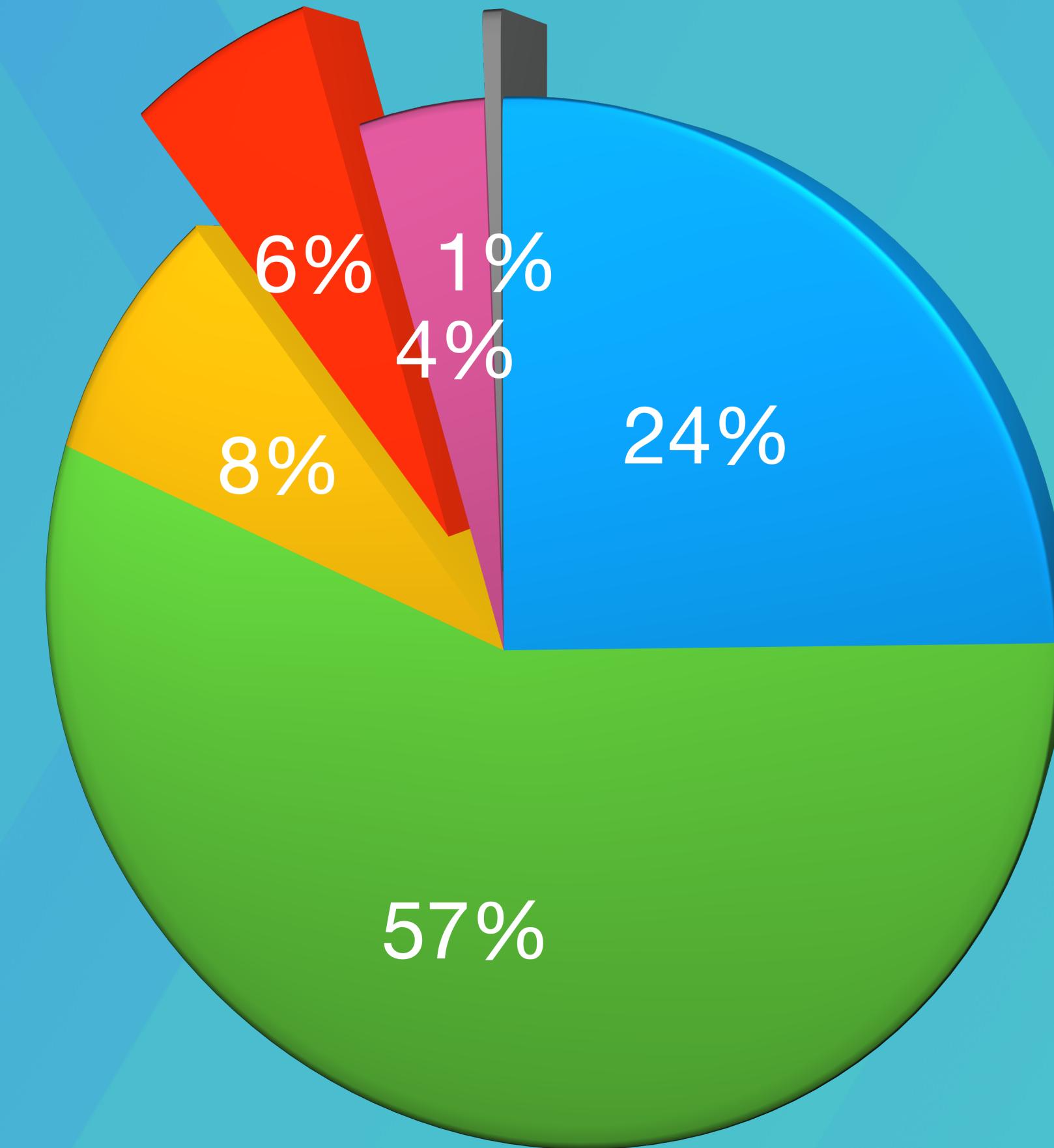
2020

Kotlin Flutter ReactNative Java

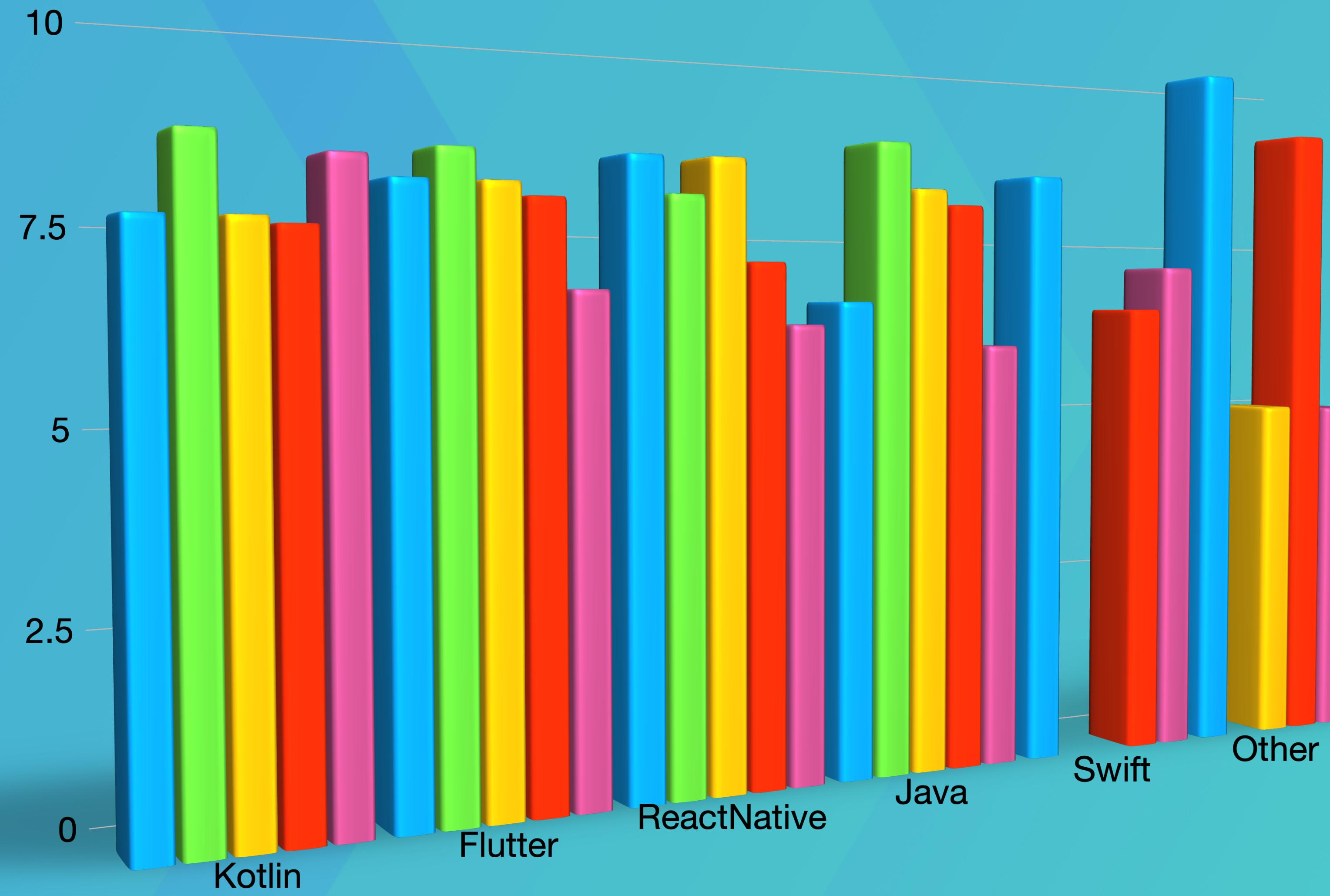


2021

Kotlin Flutter ReactNative Java iOS
Angular



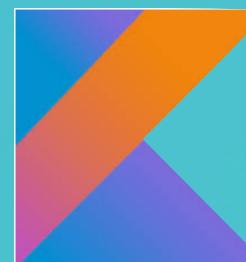
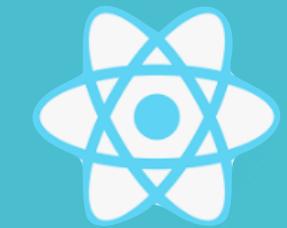
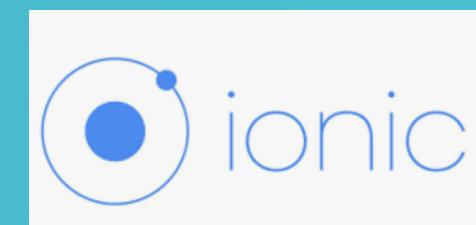
2022



This year



OBJ-C



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.

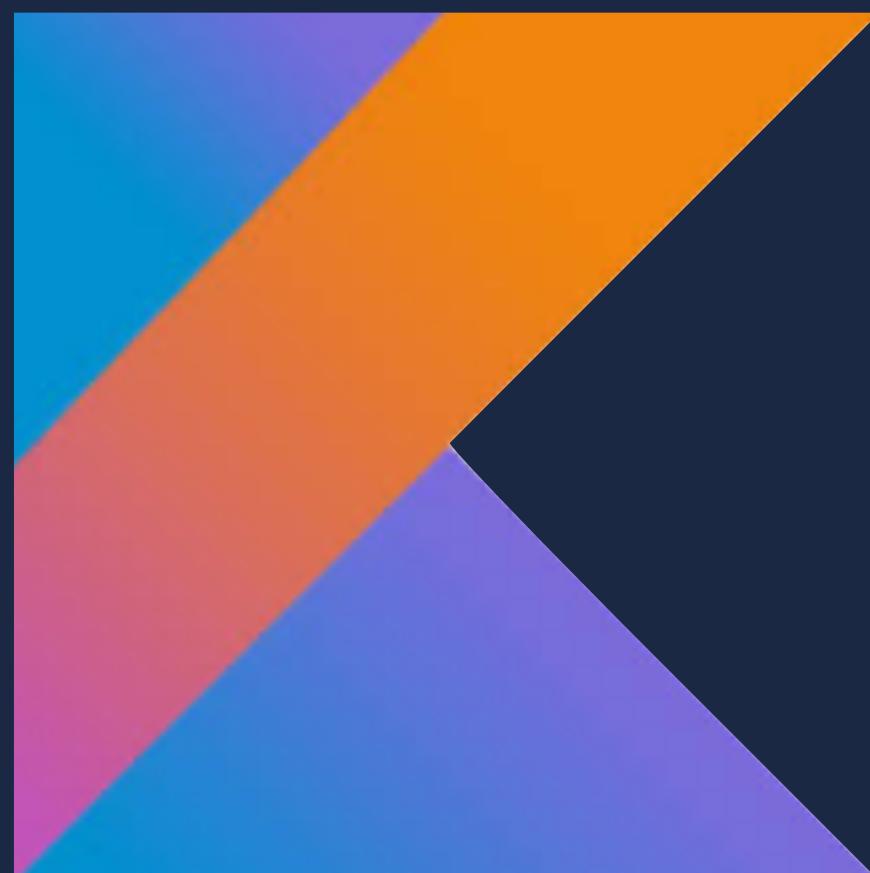
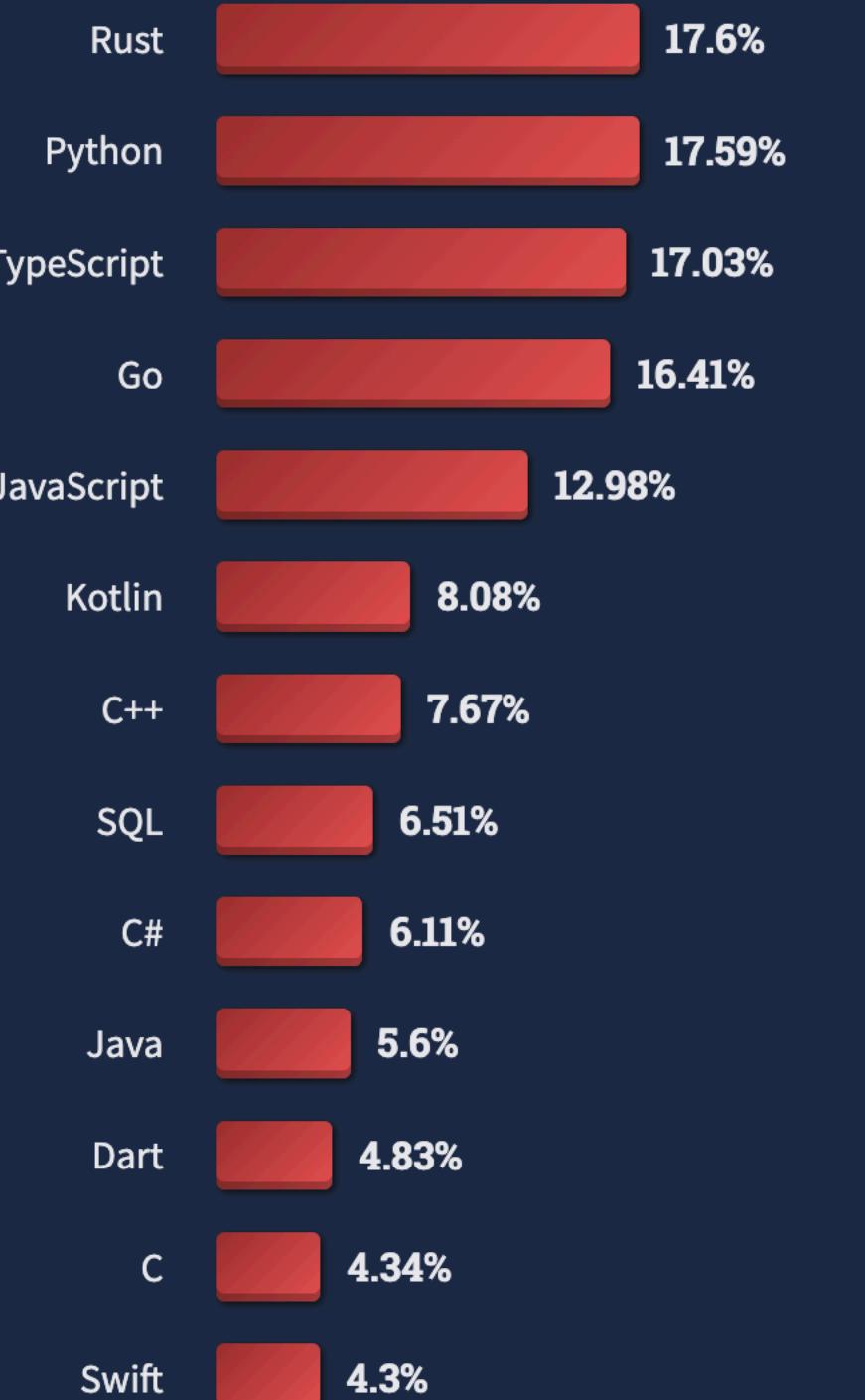
Rust also ties with Python as the most wanted technology with TypeScript running a close second.

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

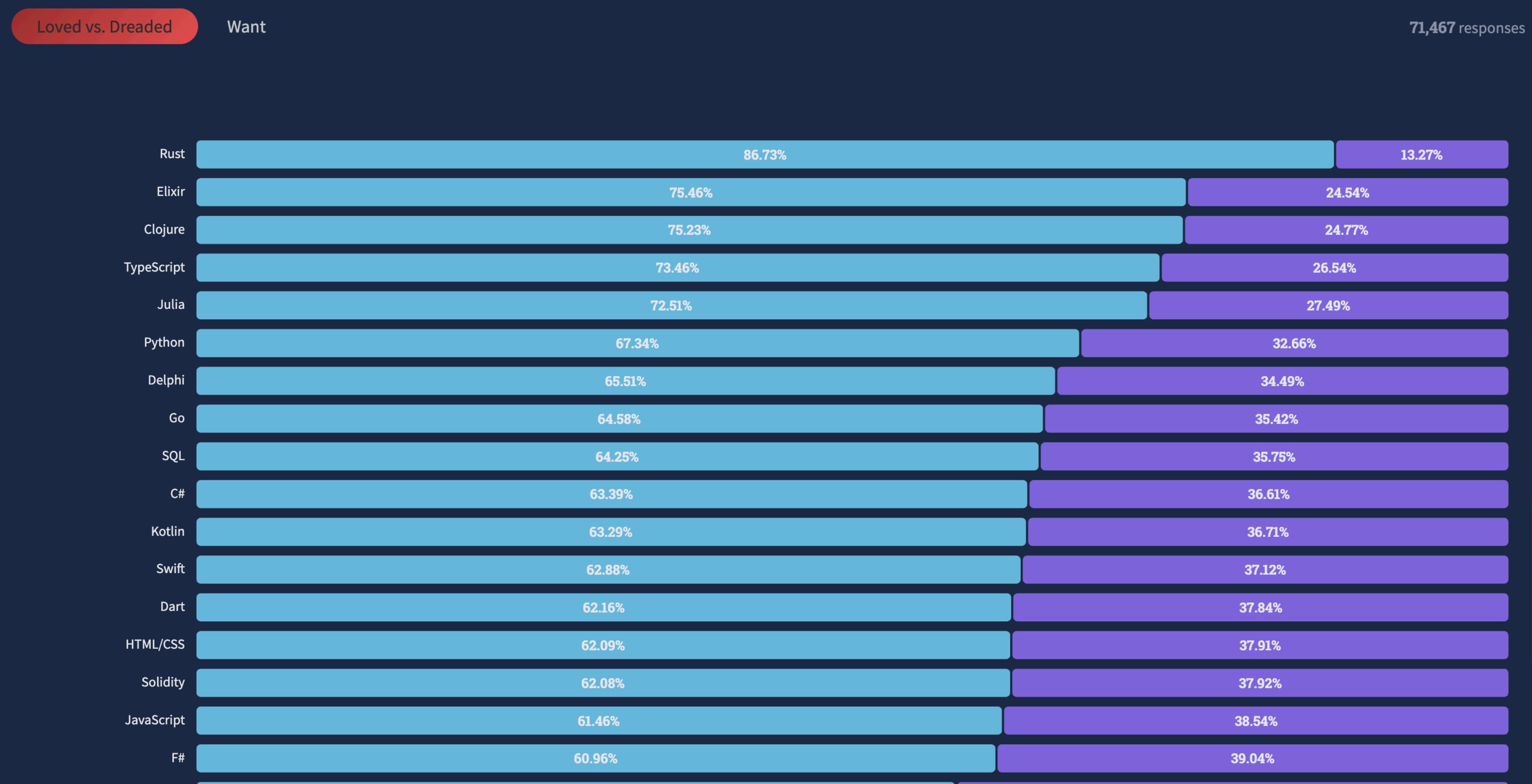


Why Kotlin



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Multiplatform programming | Kotlin v1.5.31

kotlinlang.org/docs/multiplatform.html

Kotlin

Solutions Docs Community Teach Play

Multiplatform programming

Last modified: 13 September 2021

Info 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.

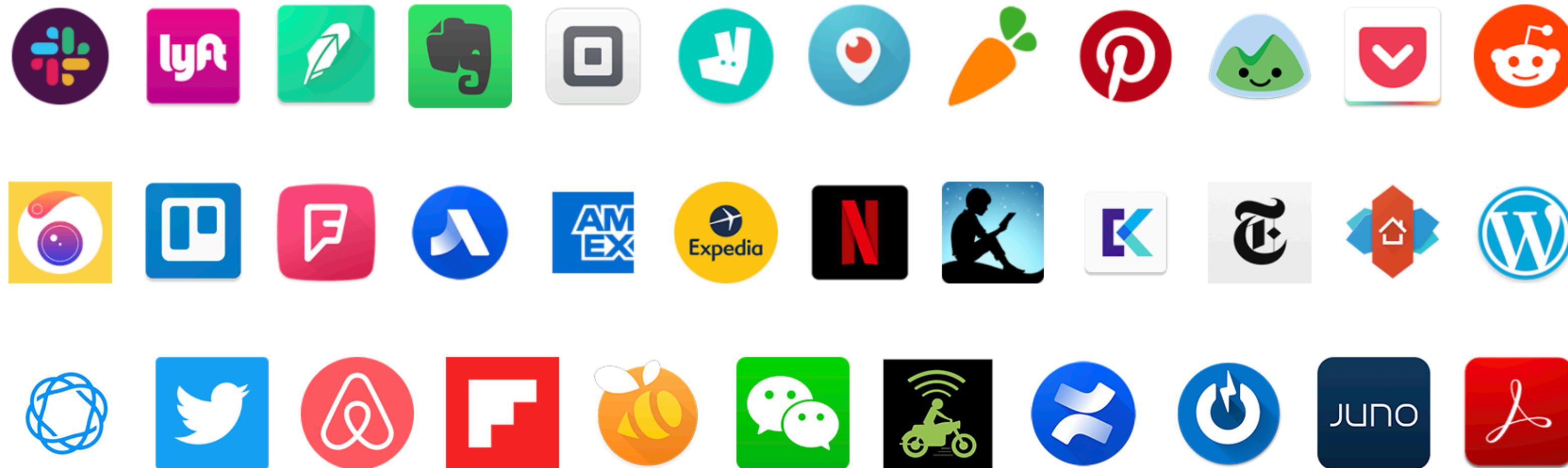
Multiplatform programming
Use cases
Android — iOS
Client — Server
What's next?
Documentation
Tutorials
Sample projects

Why Kotlin

Apps built with Kotlin

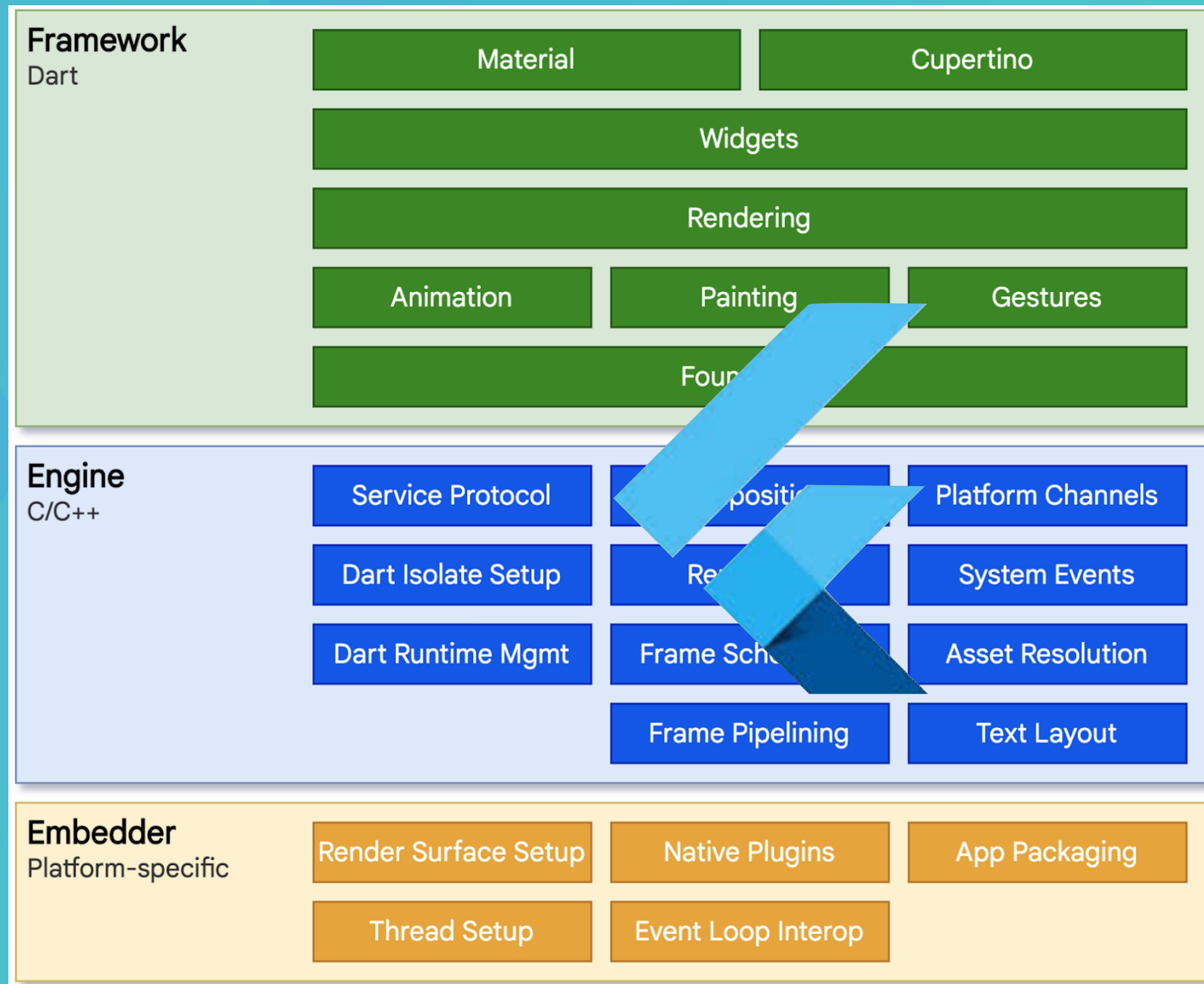
Many apps are already built with Kotlin—from the hottest startups to Fortune 500 companies. Learn how Kotlin has helped their teams become more productive and write higher quality apps.

[SEE DEVELOPER STORIES](#)

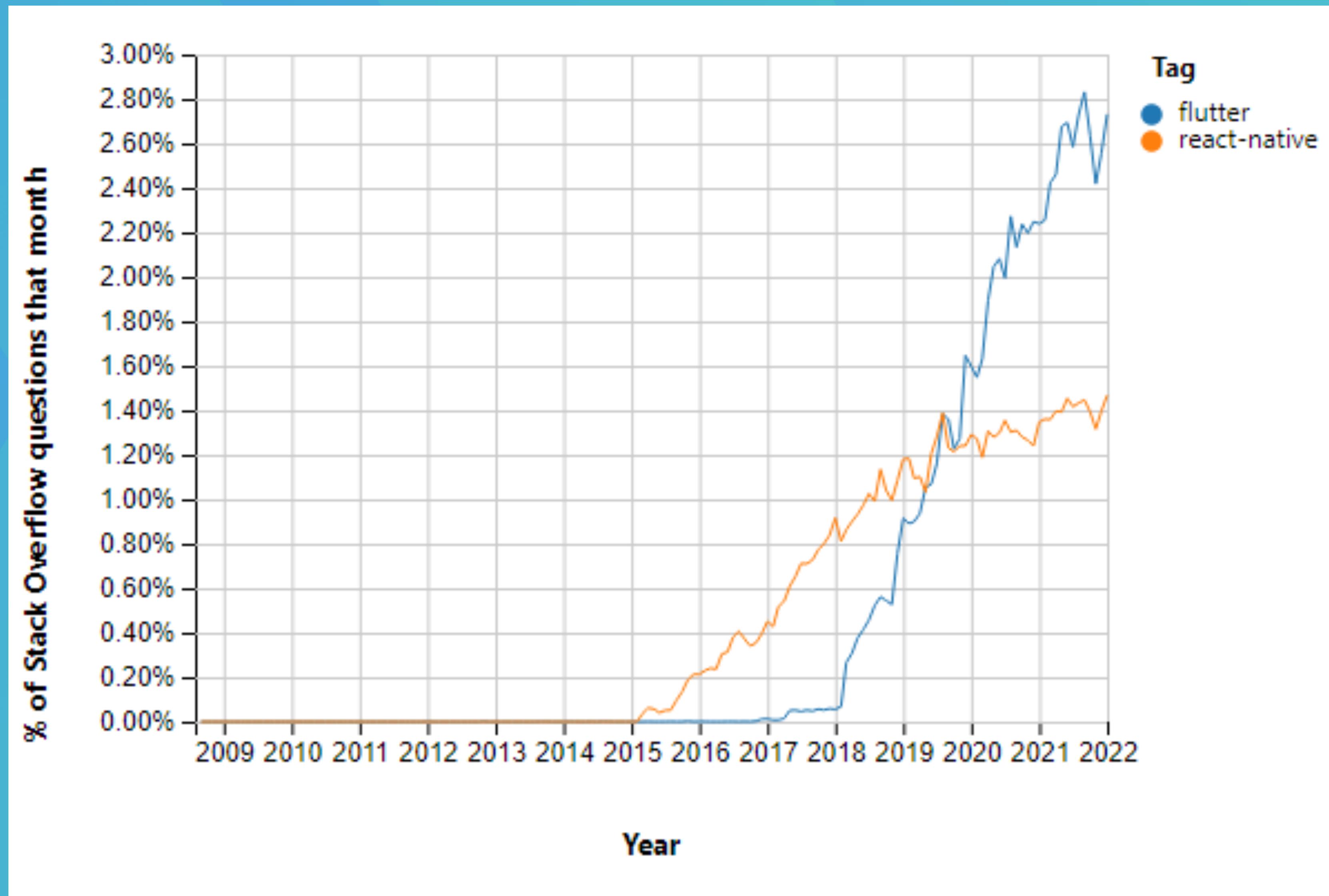


Why Flutter

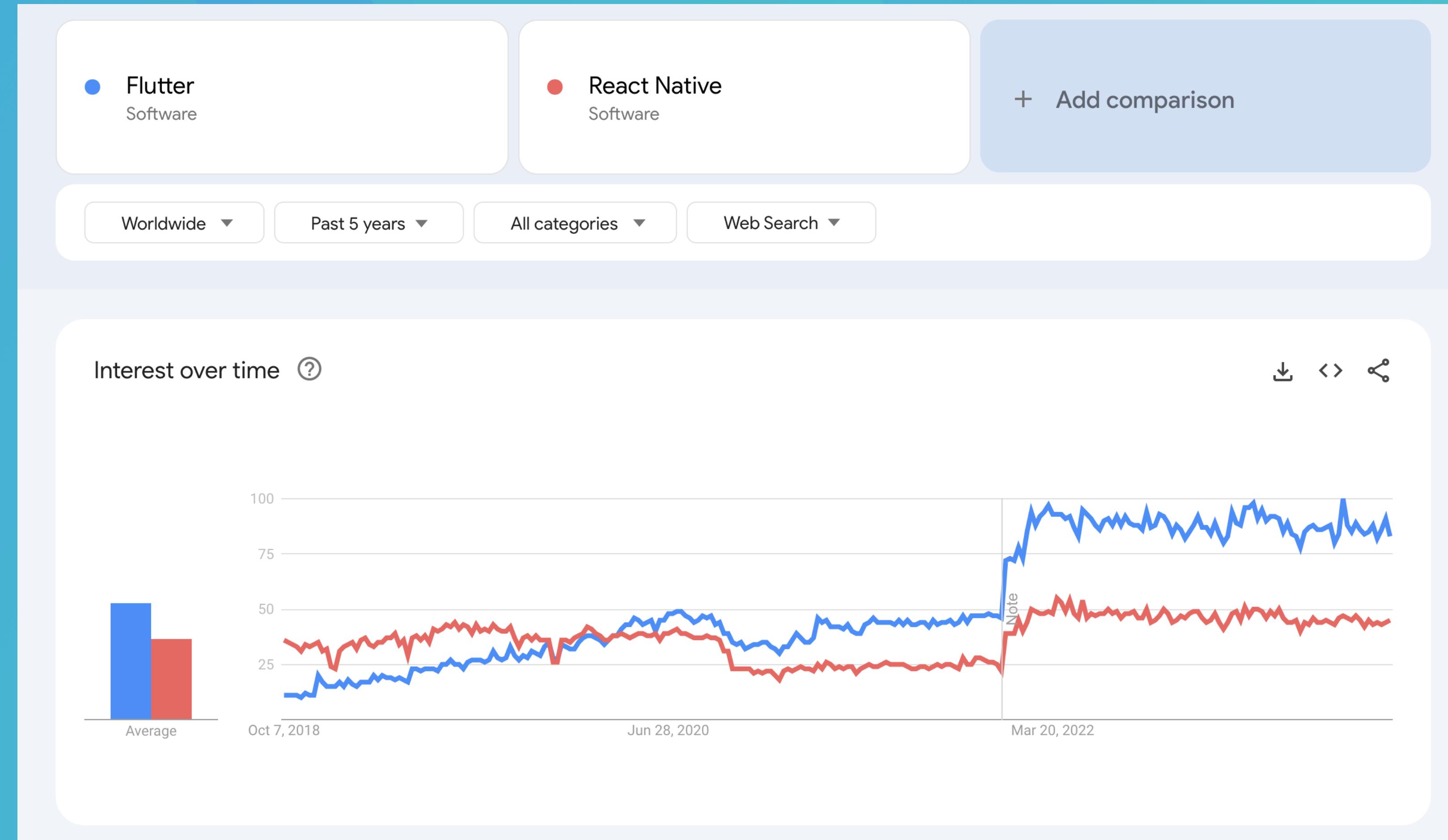
- Platform-agnostic
- Simplifies and speeds application development
- Easy to learn and easy to use
- Scales well
- Offer an excellent user experience



Why Flutter



Why Flutter



Why Flutter



5,000,000+
Flutter developers



700,000+
Flutter apps

OPEN SOURCE

The state of open source on GitHub

TOP OPEN SOURCE PROJECTS BY CONTRIBUTORS

01	microsoft/vscode	19.8K
02	home-assistant/core	13.5K
03	flutter/flutter	12.4K

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.

