



KARSTEN SILZ

MAY 12, 2022



FLUTTER FOR JAVA DEVELOPERS: MOBILE, WEB & DESKTOP WITH 1 CODEBASE?

**BUILD MOBILE, WEB &
DESKTOP FRONTENDS WITH
FLUTTER & 1 CODEBASE?**

YES, WE CAN...

... **BUT WE SHOULDN'T!**

MOBILE: 👍

WEB: 👎

DESKTOP: 👎

JSF: 👎

JAVAFX: 👎

WHY & HOW CROSS-PLATFORM

HOW FLUTTER WORKS

MY FLUTTER EXPERIENCES

WHEN TO USE WHICH FRAMEWORK

**WHO MADE ME
THE EXPERT?**



FLUTTER APP IN APP STORES

INFOQ JAVA EDITOR, PC QCON LONDON

JAVA DEVELOPER FOR 23 YEARS

**USE JAVA, ANGULAR & FLUTTER –
NOT ASSOCIATED**



**SLIDES &
MORE**

BPF.LI/DUK

WHY & HOW CROSS-PLATFORM

HOW FLUTTER WORKS

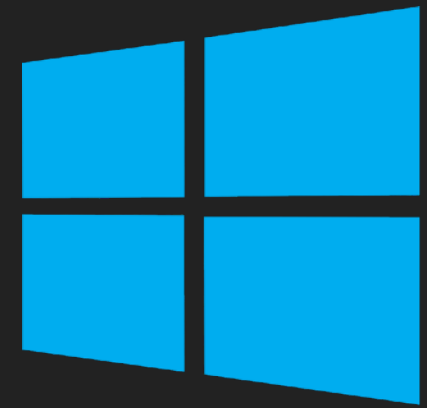
MY FLUTTER EXPERIENCES

WHEN TO USE WHICH FRAMEWORK

WHY CROSS-PLATFORM FRONT-ENDS?

USERS ARE
MULTI-PLATFORM

PC



.NET
C#

SWIFTUI
SWIFT

GTK/KDE
C++

MOBILE

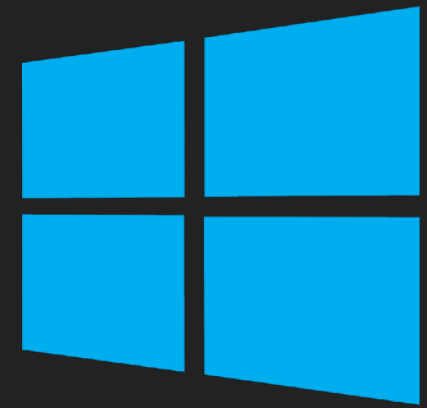


SWIFTUI
SWIFT

JETPACK
COMPOSE
KOTLIN

PC

MOBILE



.NET
C#

Swift

TOO EXPENSIVE!

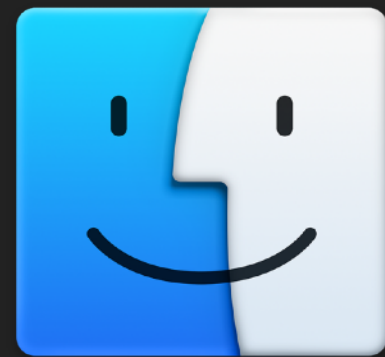
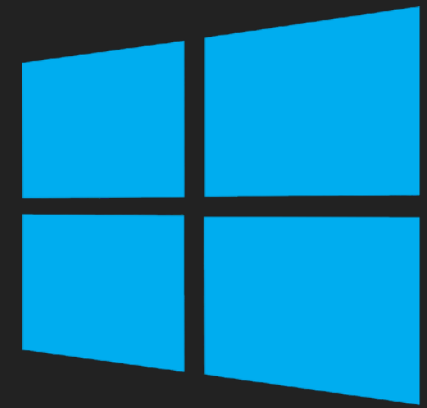
C++

SWIFTUI
SWIFT

JETPACK
COMPOSE
KOTLIN

PC

MOBILE



1 FRAMEWORK, 1 LANGUAGE
CROSS-PLATFORM

**CROSS-PLATFORM
FRONT-ENDS:**

CHEAPER & GOOD ENOUGH

GOOD ENOUGH:
ENTERPRISE & CONSUMER
APPS – NOT GAMES

**THAT'S WHY
CROSS-PLATFORM
FRONT-ENDS!**

~~WHY~~ & HOW CROSS-PLATFORM

HOW FLUTTER WORKS

MY FLUTTER EXPERIENCES

WHEN TO USE WHICH FRAMEWORK

**HOW CROSS-PLATFORM
FRONT-ENDS?**

BIGGEST SOFTWARE ECOSYSTEM EVER

MANY & CHEAP DEVELOPERS

REACT, ANGULAR, VUE

HARD TO LEARN

WEB

STANDARD JAVA WEB FRONT-END LIBRARY

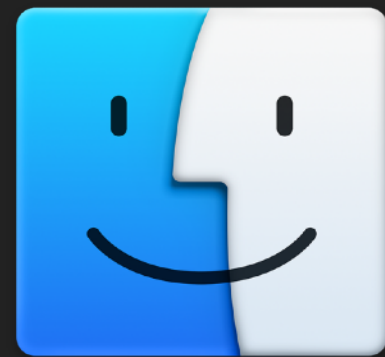
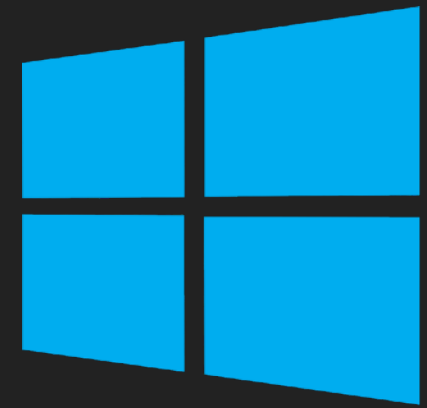
NO SINGLE PAGE APPLICATIONS (SPA)

UNPOPULAR: VERY FEW JOBS (VUE: 14X , ANGULAR: 27X, REACT: 40X)/ GOOGLE SEARCHES / STACK OVERFLOW QUESTIONS

NO NEW FEATURES FOR FIVE YEARS (COMING MID-2022)

JAKARTA SERVER FACES: 

PC



MOBILE



HTML, CSS
JAVASCRIPT/TYPESCRIPT

HARD RESTRICTIONS: NO PUSH NOTIFICATIONS ON IOS,
LOCAL STORAGE ABOUT 50 MB, NOT ALL NATIVE FEATURES

MOBILE **POWER** EASIER TO USE FROM NATIVE APPS

ISSUES: **WEB** ON MOBILE



TikTok

EDIT VIDEOS!



**PLAY ONLINE
MULTIPLAYER GAMES!**

GIGABYTE OF LOCAL STORAGE

LOCAL SQL/NOSQL DATABASE

CPU POWER SIMILAR TO PCS

CALL BACK-ENDS WITH REST/GRPC/GRAPHQL...

NATIVE APP POWER

**MORE "DESKTOP
APPLICATION", LESS
"WEB APPLICATION"**

HARD RESTRICTIONS: NO PUSH NOTIFICATIONS ON IOS,
LOCAL STORAGE ABOUT 50 MB, NOT ALL NATIVE FEATURES

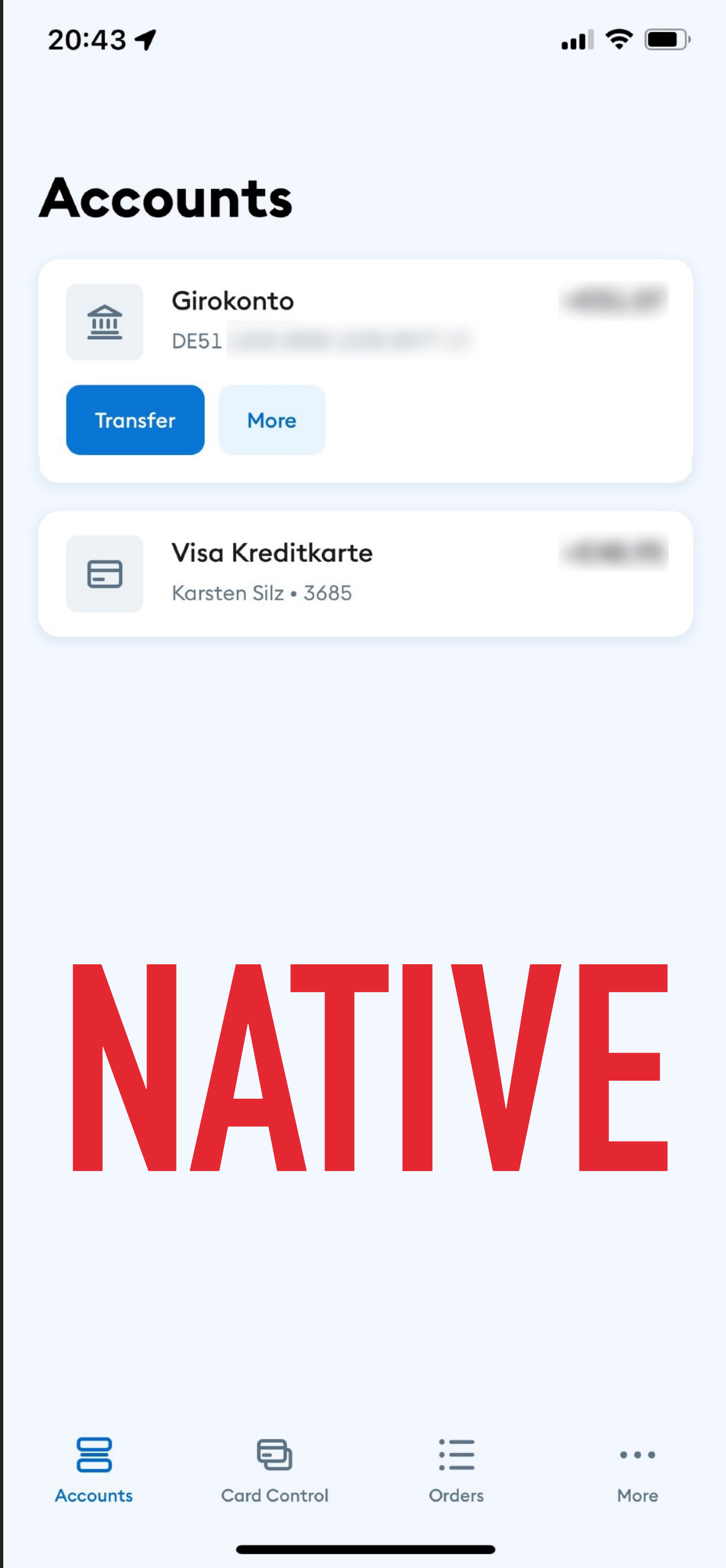
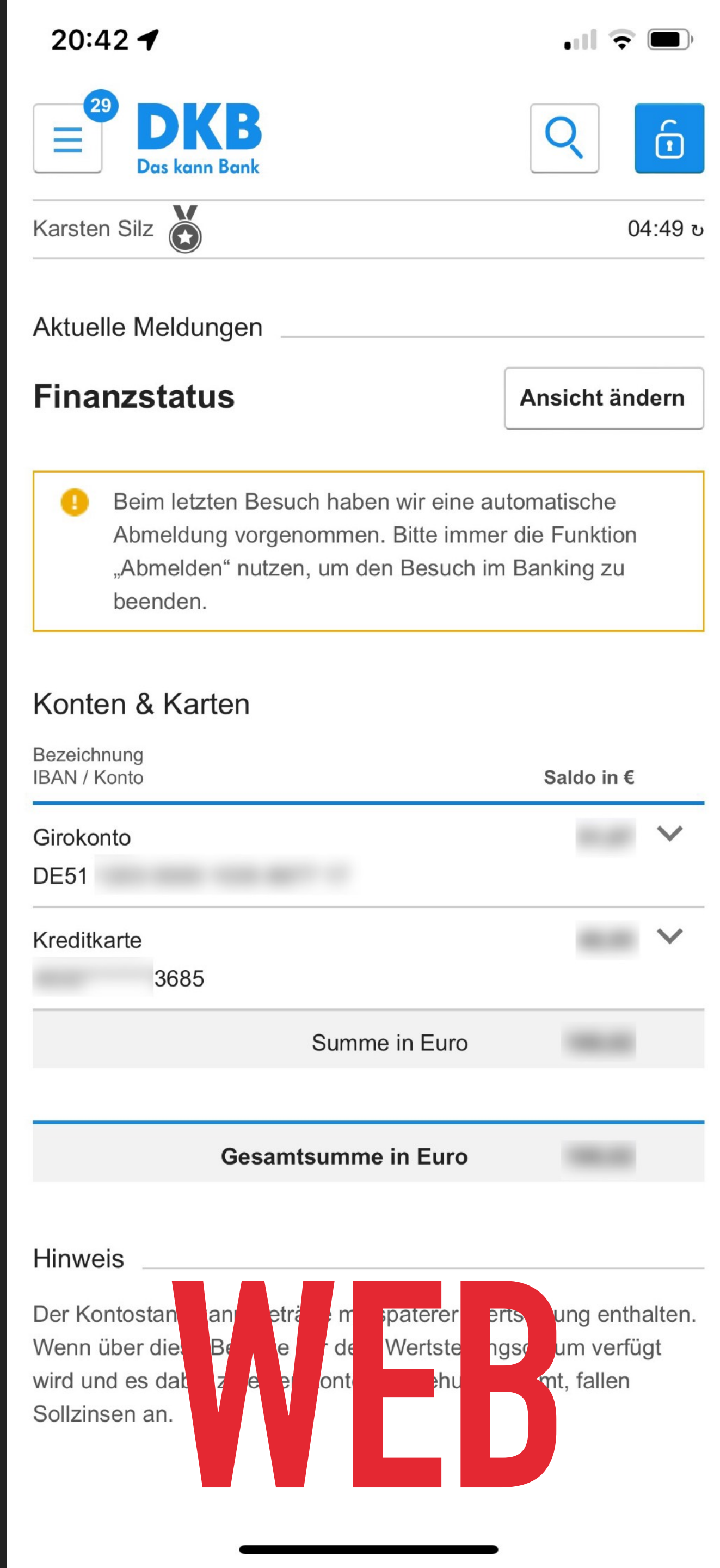
MOBILE **POWER** EASIER TO USE FROM NATIVE APPS

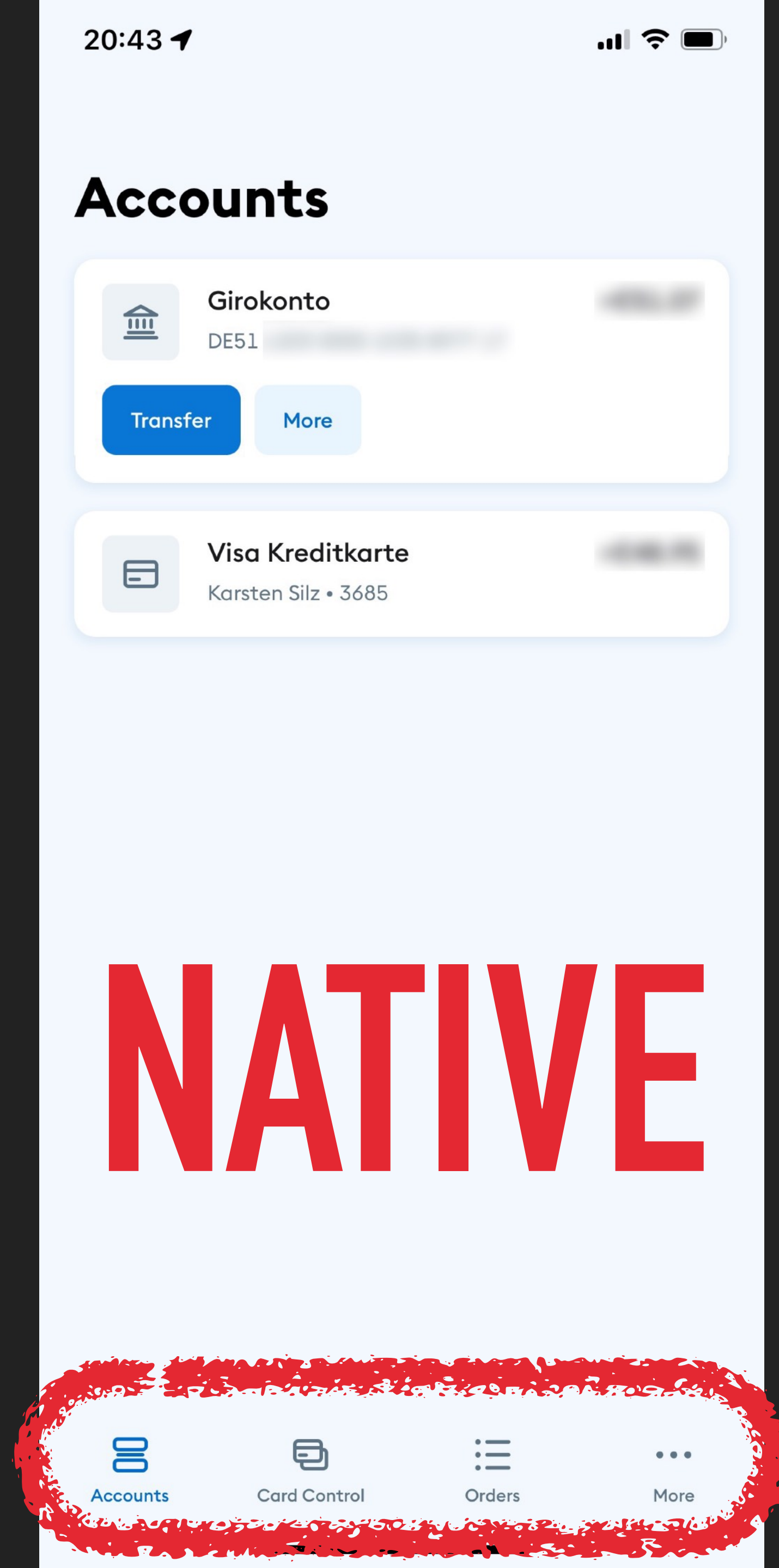
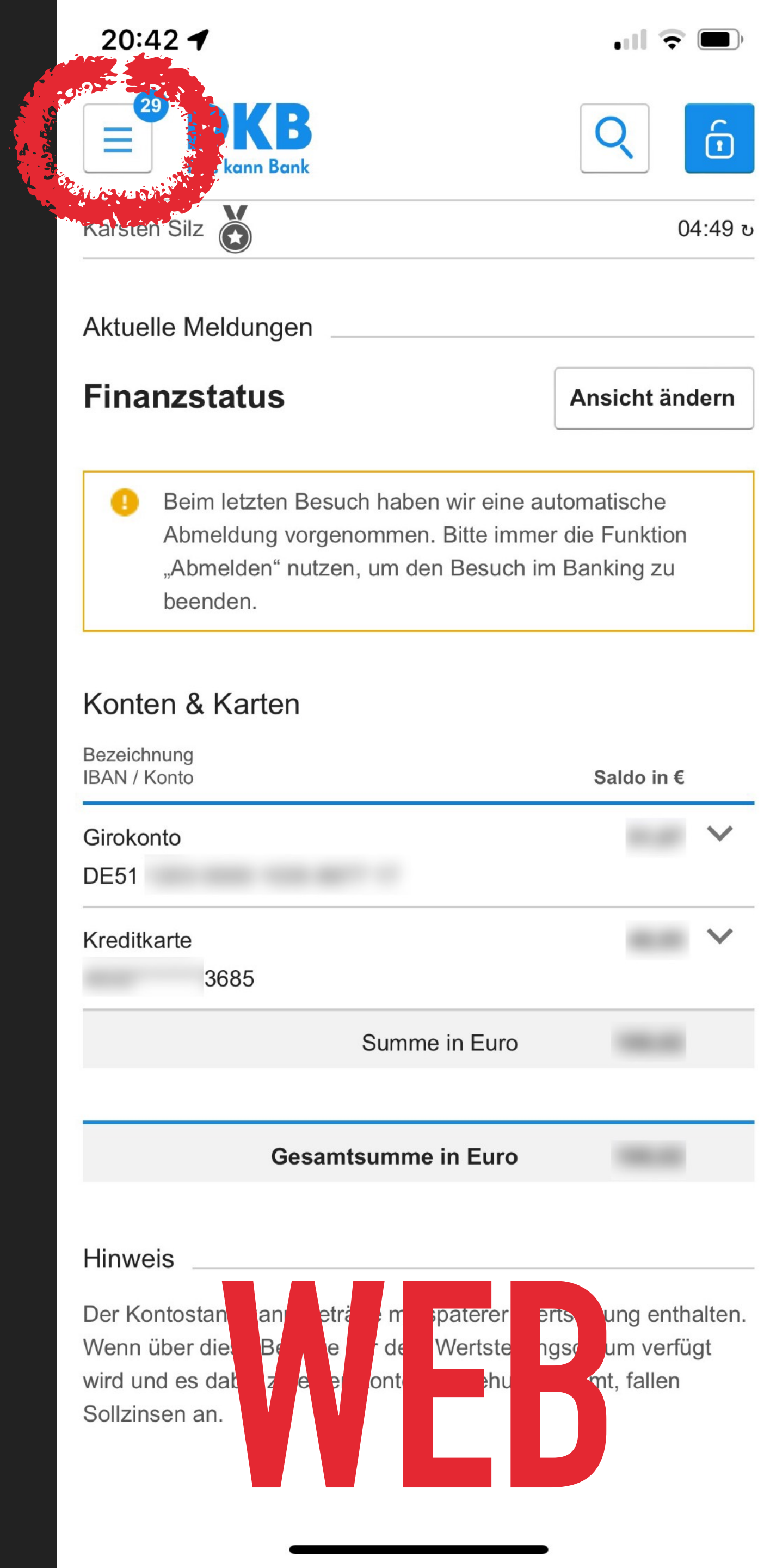
NO NATIVE **LOOK & FEEL**

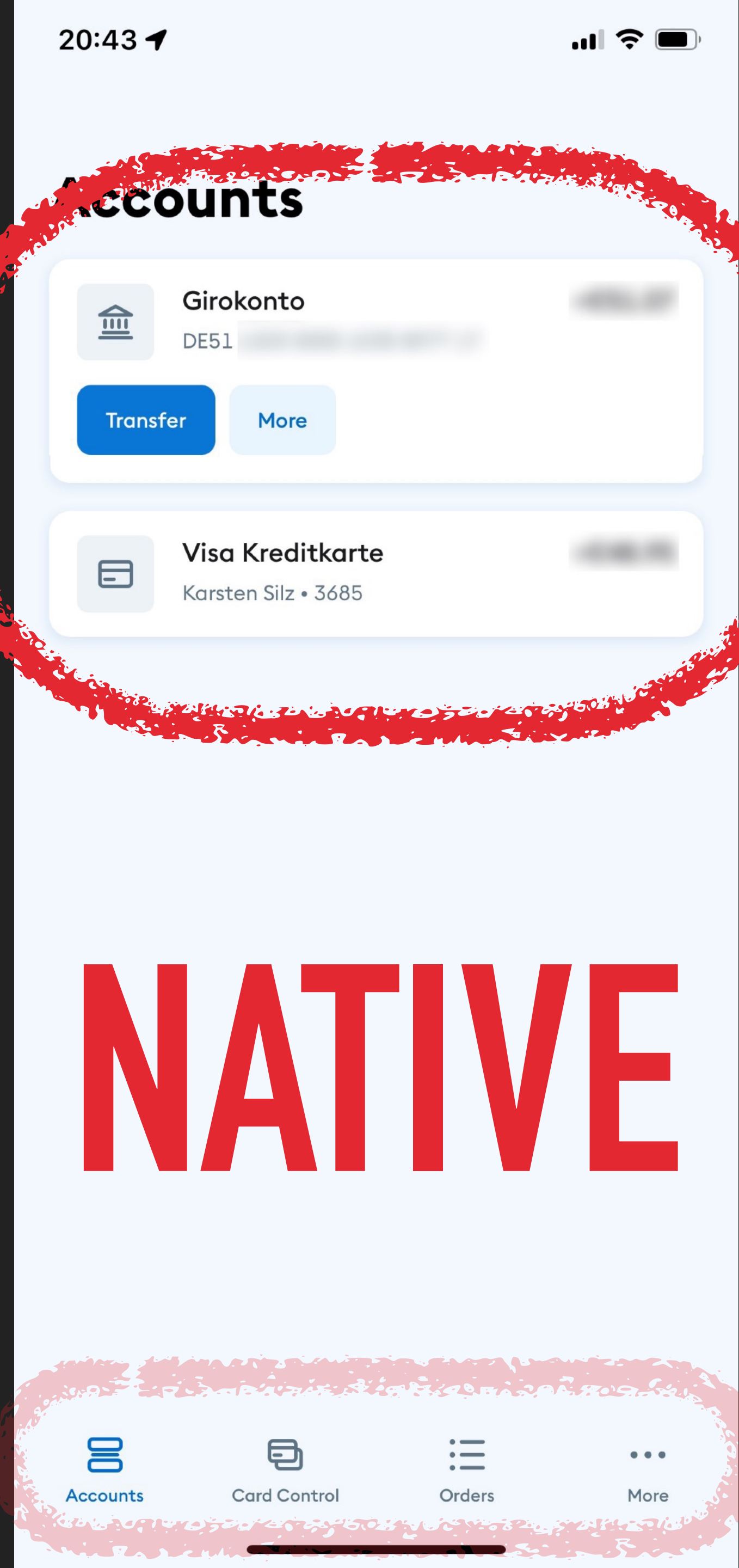
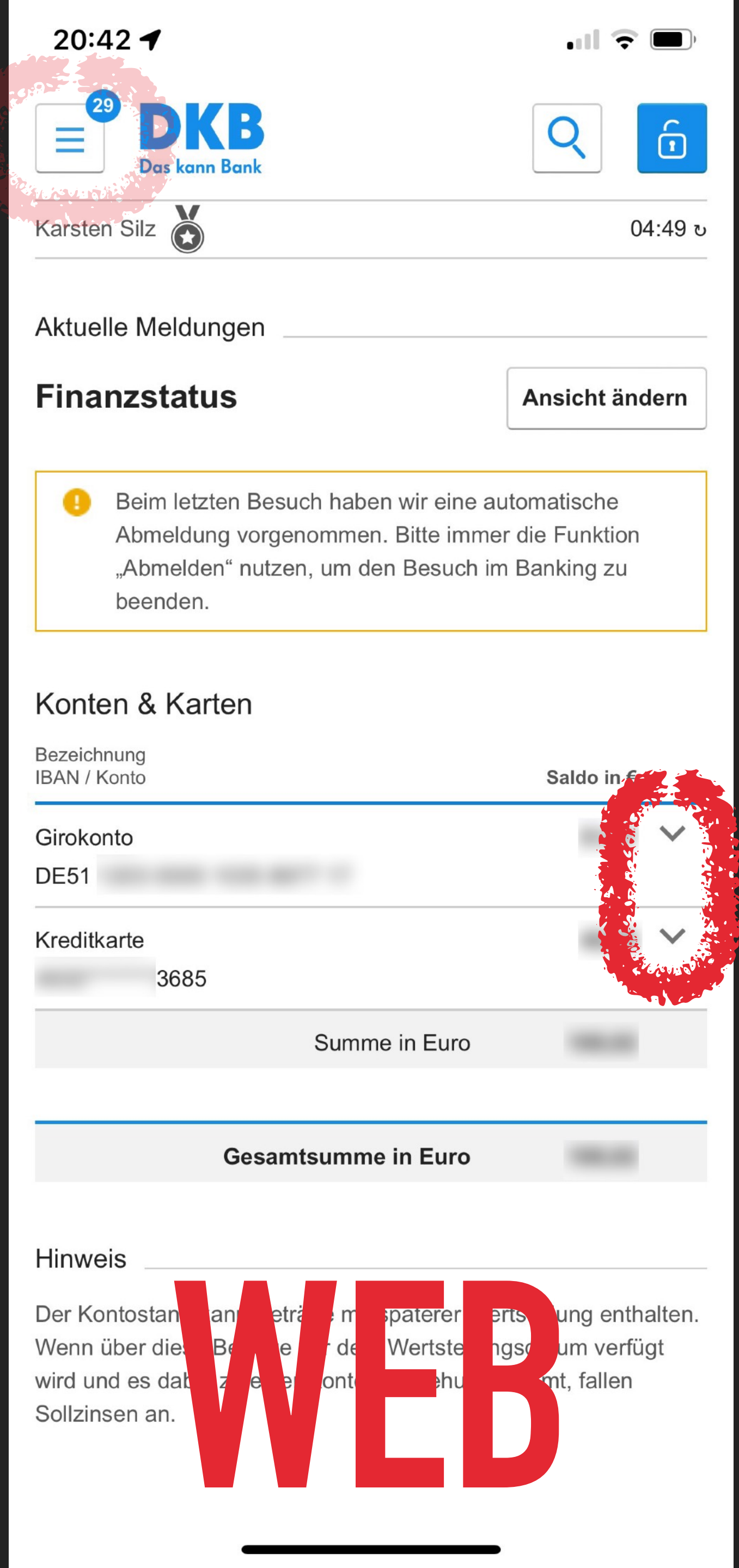
ISSUES: **WEB** ON MOBILE

WHY NATIVE
LOOK & FEEL?

GERMAN ONLINE BANKING APP







20:42



Karsten Silz

04:49

Aktuelle Meldungen

Finanzstatus

Ansicht ändern

! Beim letzten Besuch haben wir eine automatische Abmeldung vorgenommen. Bitte immer die Funktion „Abmelden“ nutzen, um den Besuch im Banking zu beenden.

Konten & Karten

Bezeichnung
IBAN / Konto

Saldo in €

Girokonto

DE51 [redacted]

Kreditkarte

[redacted] 3685

Summe in Euro

Gesamtsumme in Euro

Hinweis

Der Kontostand kann Beträge mit späterer Wertstellung enthalten. Wenn über die Beträge der Wertstellungsum verfügt wird und es dabei zu einer Kontoveränderung kommt, fallen Sollzinsen an.

WEB

20:43



Accounts



Girokonto

DE51 [redacted]

Transfer

More

LOOKS NICER!



Accounts



Card Control



Orders



More

NATIVE LOOK & FEEL:
EASIER TO USE ("LIKE OTHER
APPS"), LOOKS **NICER**

GOOGLE APPS ON IOS:

MATERIAL UI =>

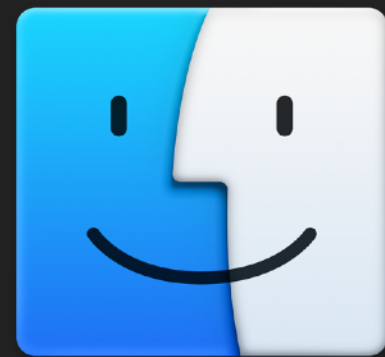
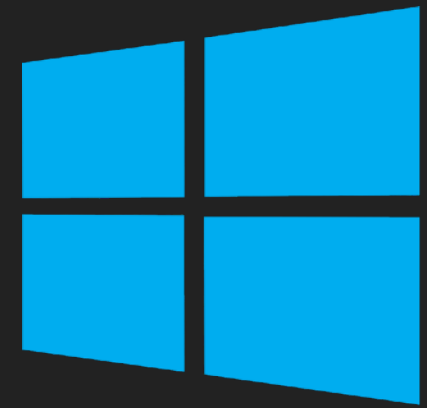
NATIVE IOS UI

**"REALLY MAKE
PRODUCTS FEEL GREAT
ON APPLE PLATFORMS"**

JEFF VERKOEYEN, GOOGLE

CROSS-PLATFORM X2:
WEB + NATIVE

PC



HTML, CSS
JAVASCRIPT/TYPESCRIPT

MOBILE



NATIVE CROSS-
PLATFORM

RUNS NATIVELY, IN APP STORES

NATIVE **LOOK & FEEL**

ACCESS TO NATIVE PLATFORM FEATURES

DEFINE: **"NATIVE"**

**NATIVE CROSS-
PLATFORM
FRAMEWORKS?**

**MANY FRAMEWORKS &
TOOLS: "1 APP FOR IOS
& ANDROID"!**

FLUTTER (GOOGLE)

XAMARIN/.NET MAUI
(MICROSOFT)

REACT NATIVE (META)

JAVAFX (GLUON)

OPEN-SOURCE & JAVA-LIKE

**WHICH FRAMEWORK
IS POPULAR?**

EASIER TO **USE** & LEARN

EASIER TO **CONVINCE** TEAMMATES/BOSSES

ALL ELSE EQUAL: USE **MOST** POPULAR

VERY UNPOPULAR: **DON'T** USE IT

WHY POPULARITY?

EMPLOYER POPULARITY:
MENTIONED IN JOB ADS @
INDEED (62 COUNTRIES)

TEAMMMATES:

CAN I FIND A JOB?

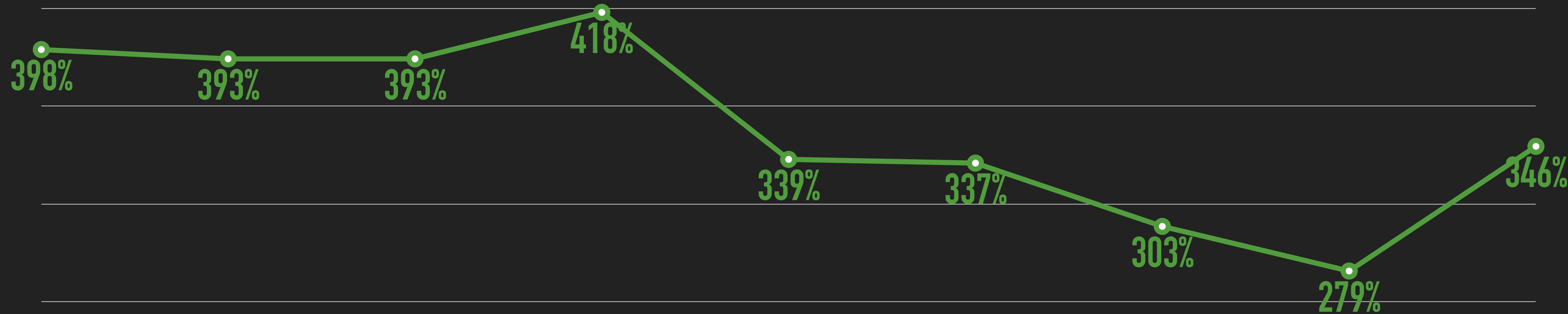
BOSS:

CAN I HIRE DEVELOPERS?

UK

REACT NATIVE: 727

REACT NATIVE: 817

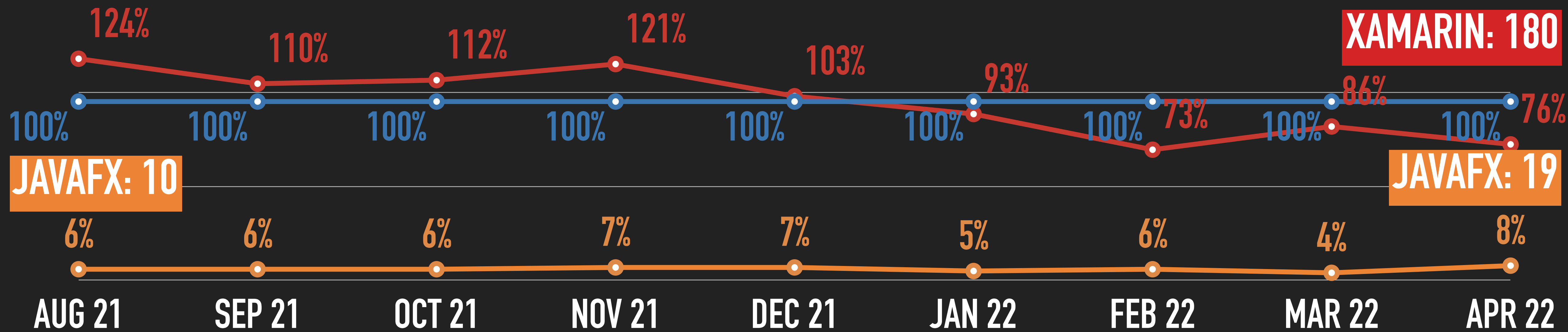


XAMARIN: 226

FLUTTER: 183

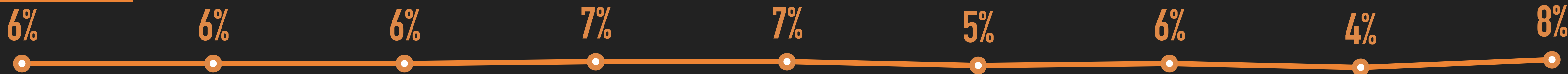
FLUTTER: 236

XAMARIN: 180



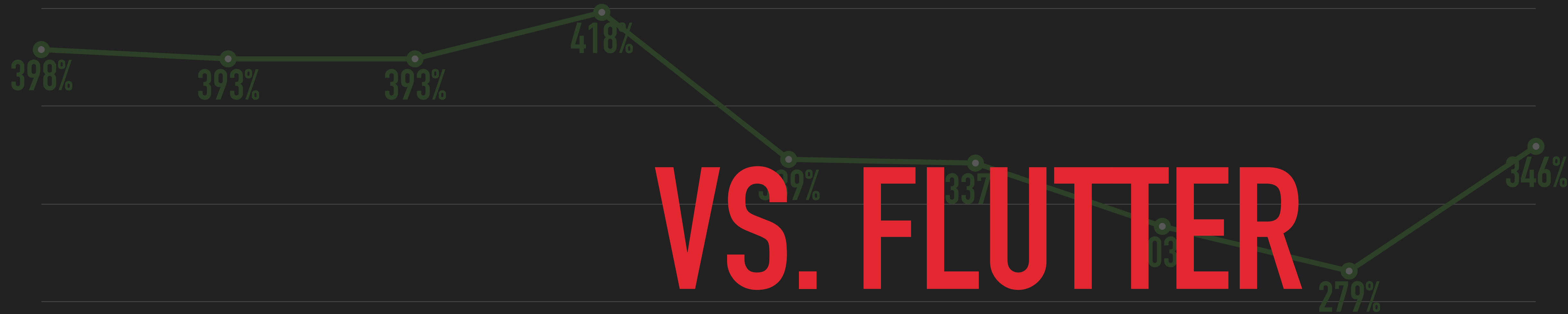
JAVAFX: 10

JAVAFX: 19



REACT NATIVE: 727

REACT NATIVE: 817



VS. FLUTTER

REACT NATIVE: -52%

XAMARIN: 226

FLUTTER: 183

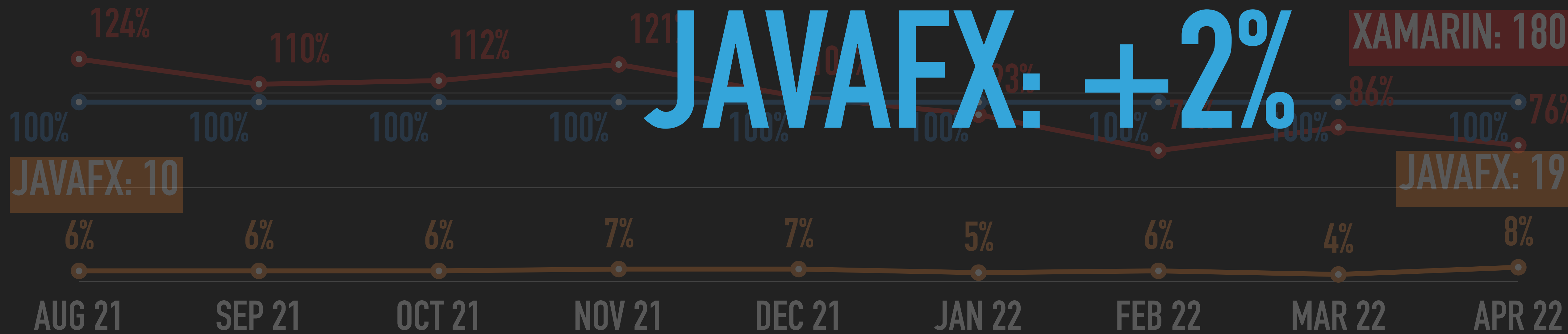
FLUTTER: 236

XAMARIN: 180

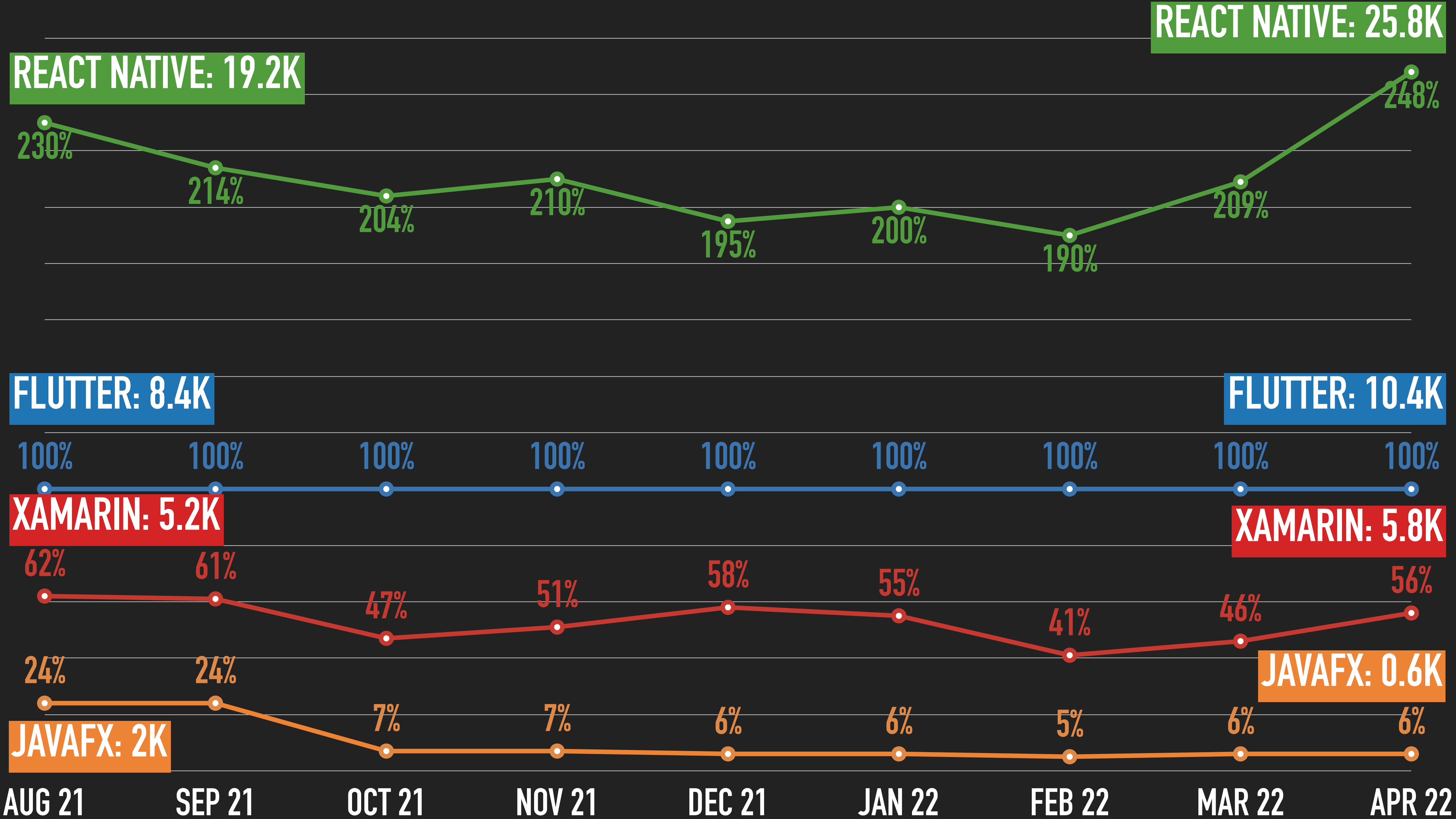
JAVAFX: +2%

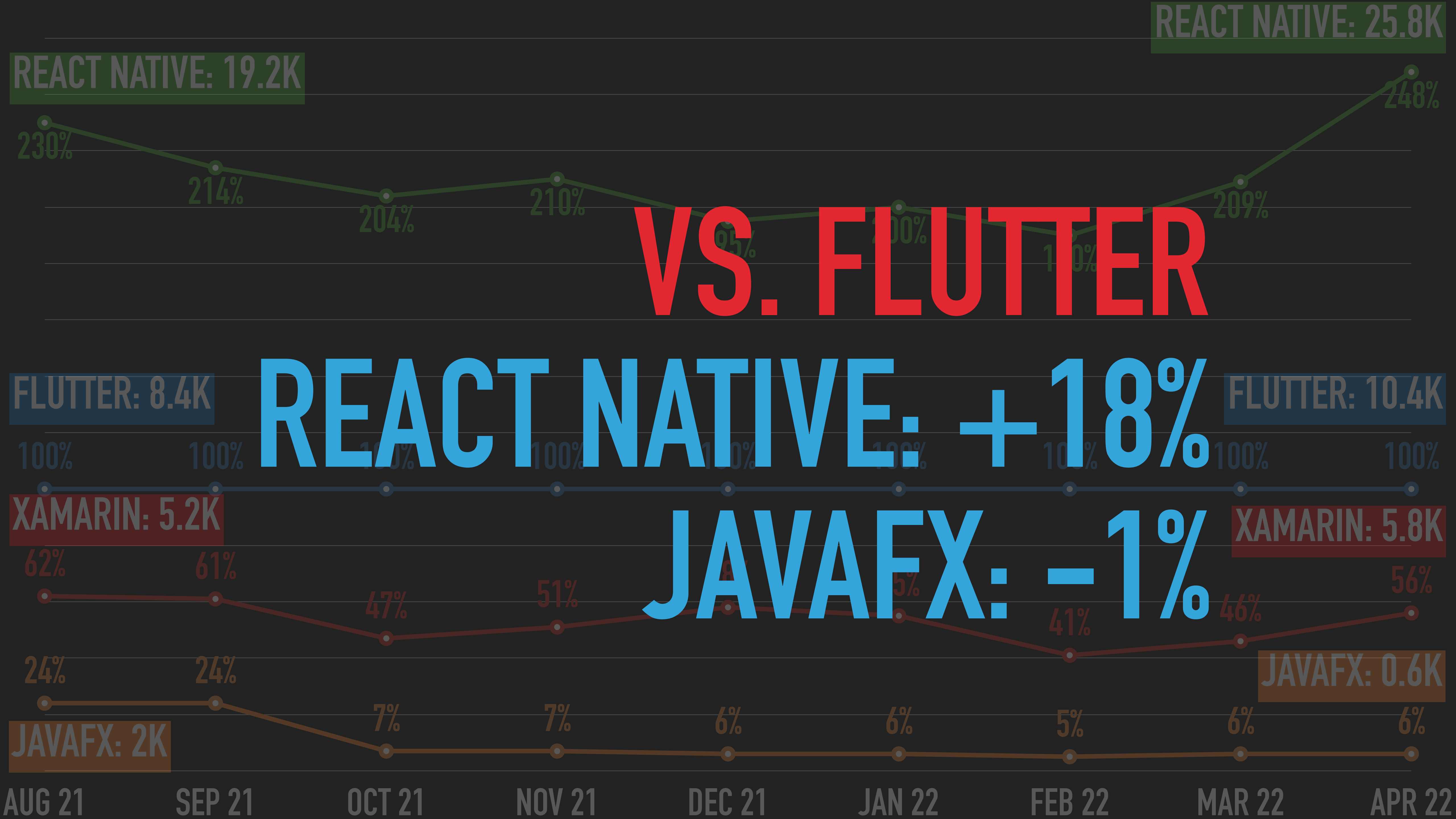
JAVAFX: 10

JAVAFX: 19

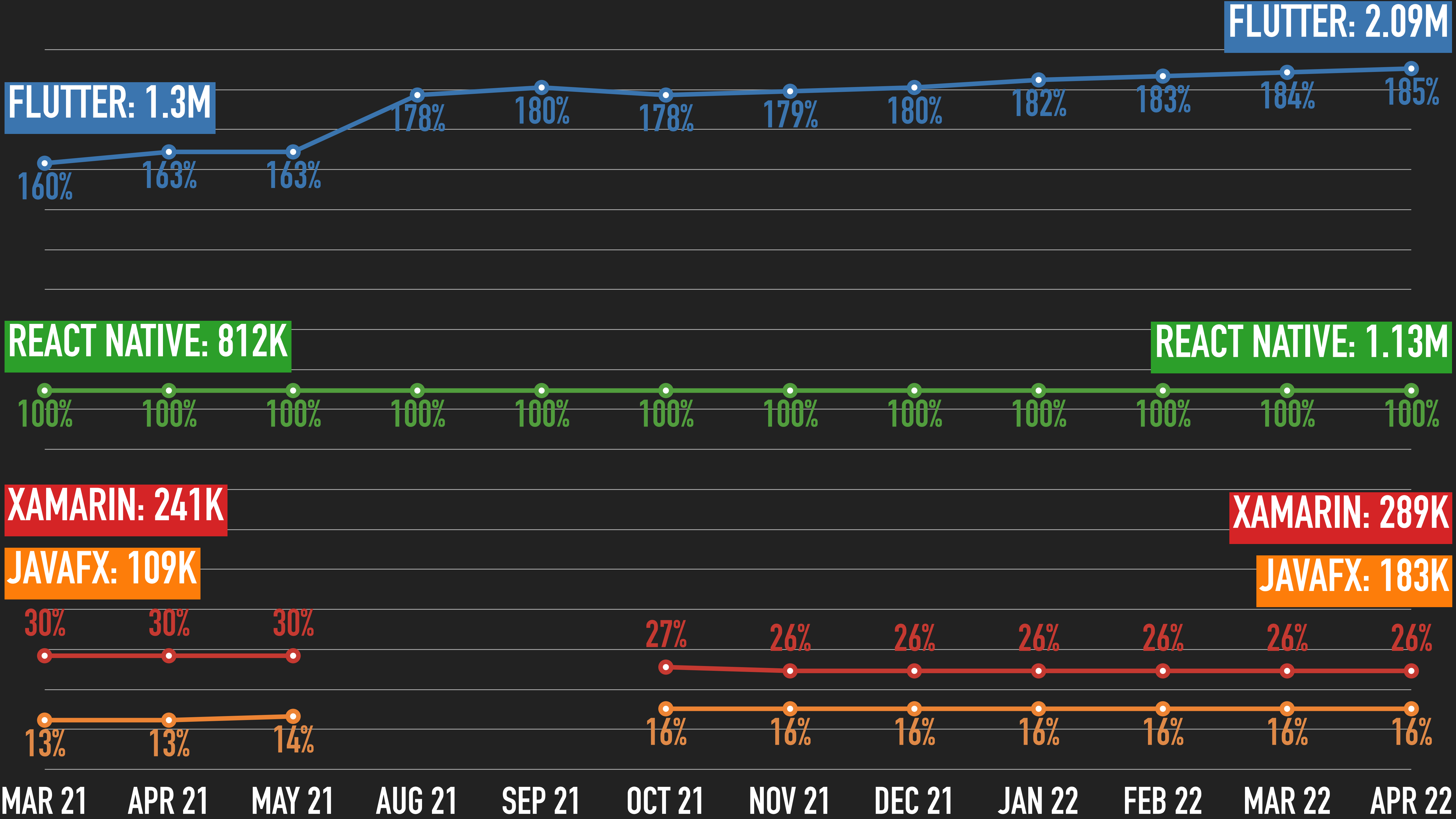


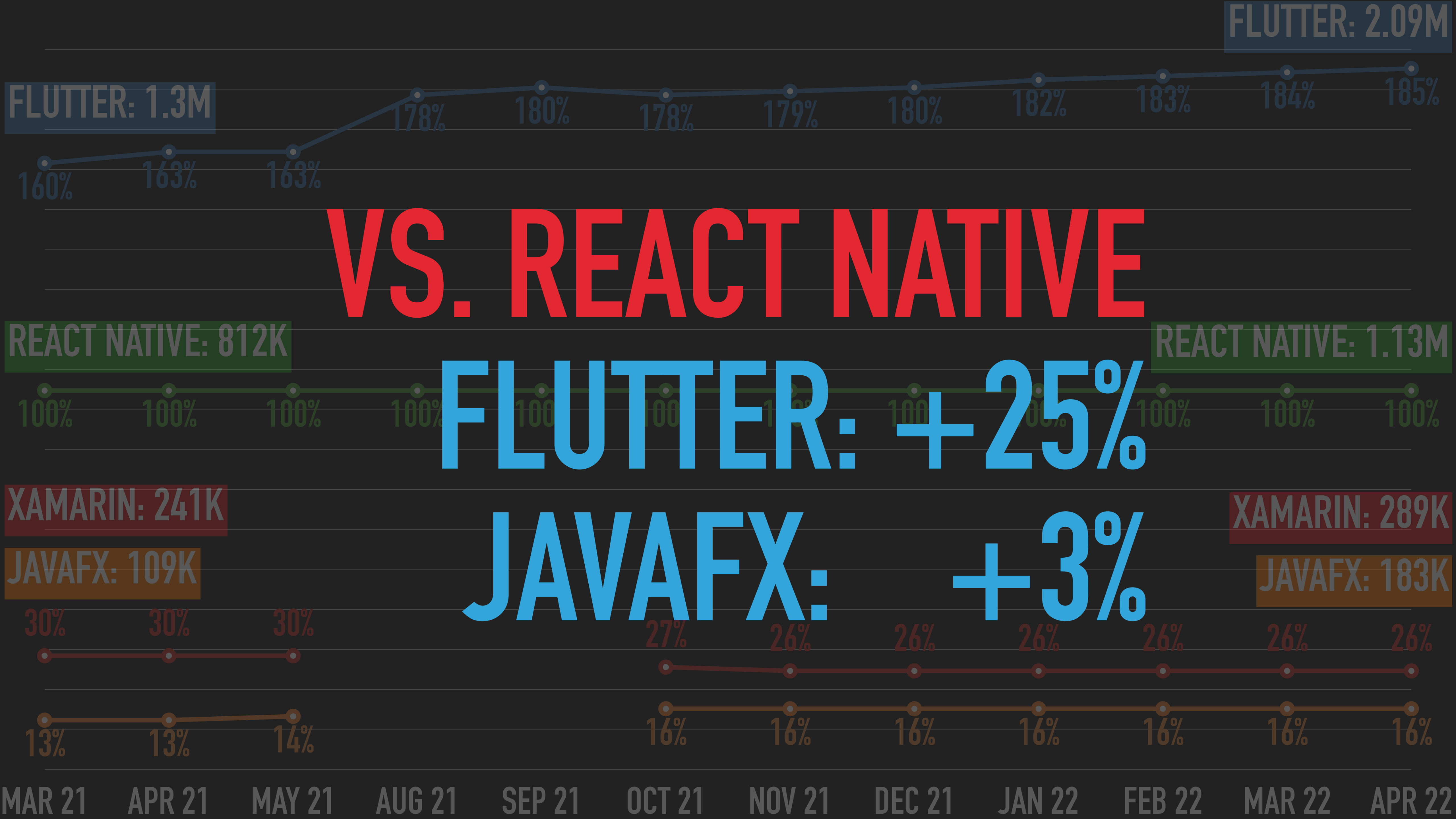
GLOBAL



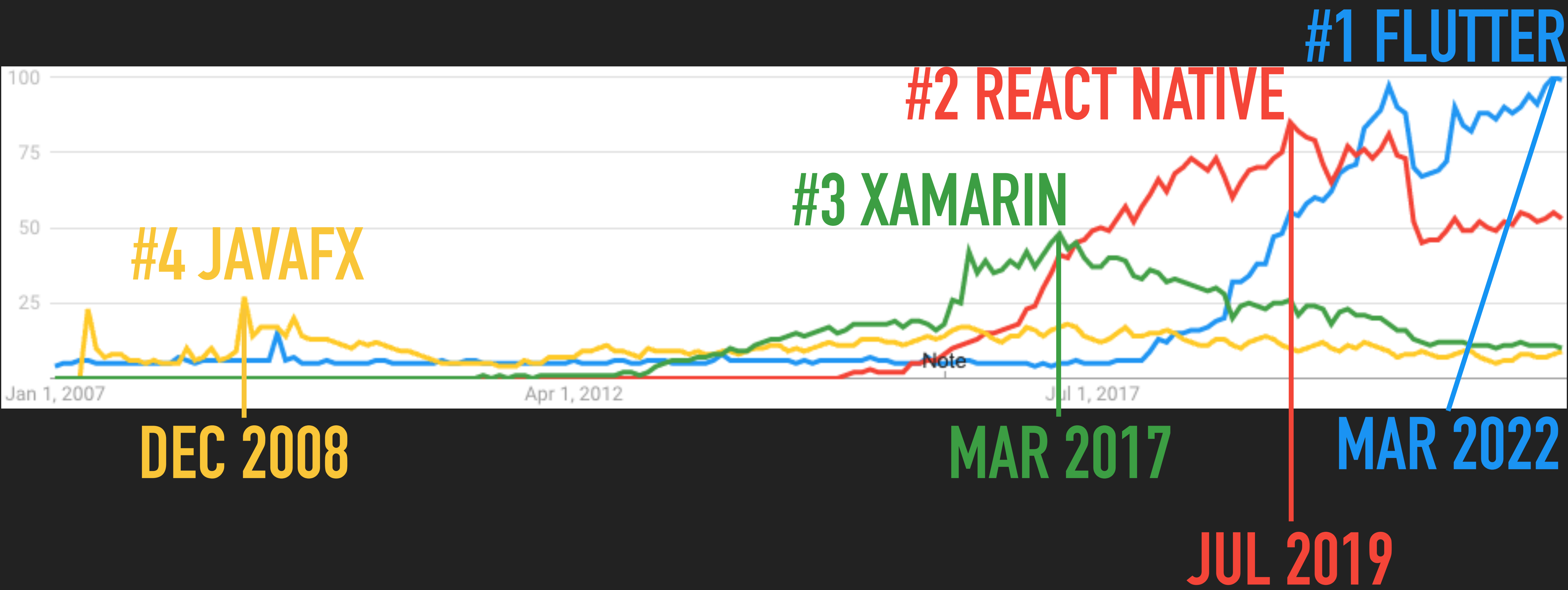


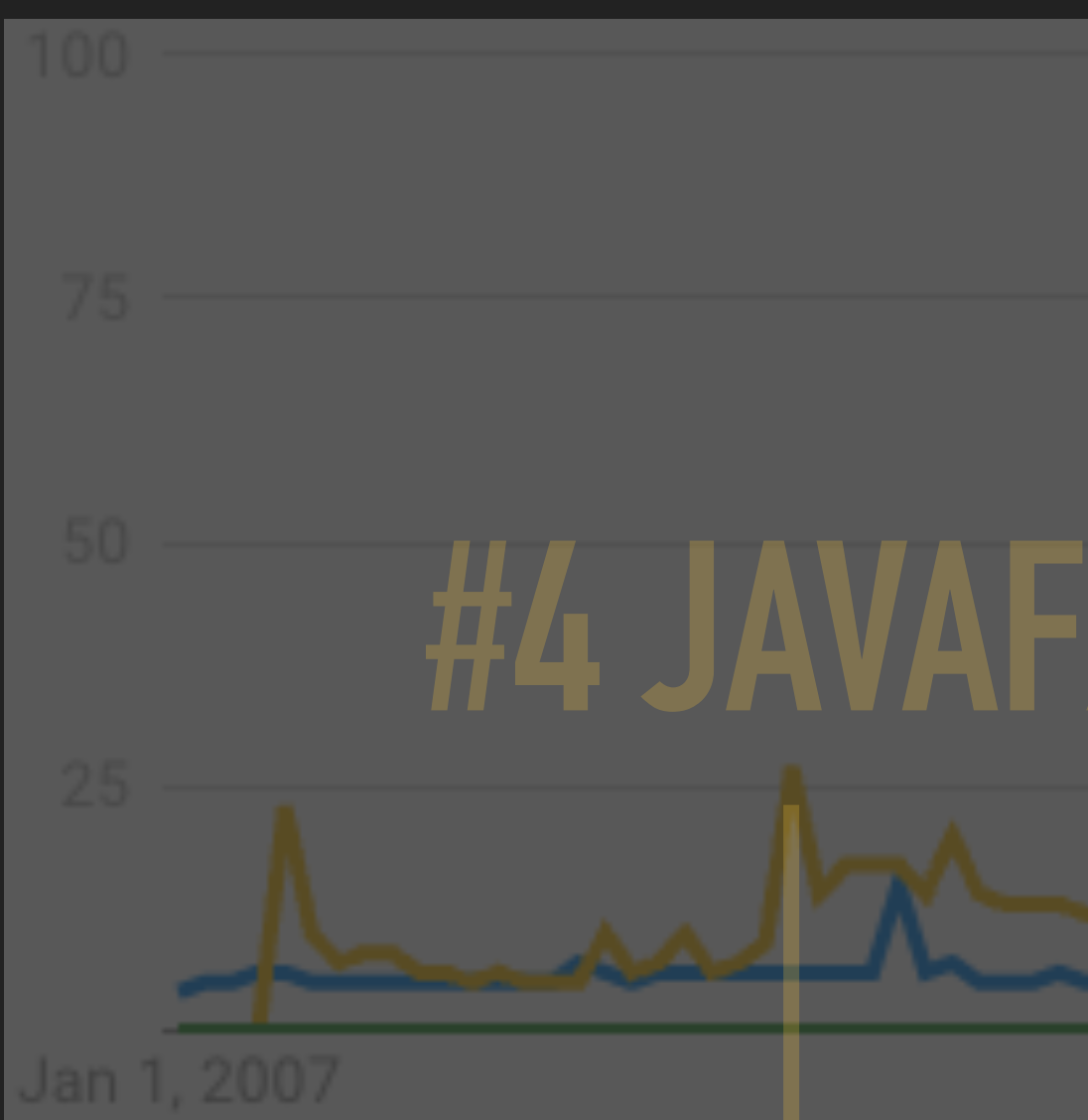
DEVELOPER POPULARITY:
COURSES BOUGHT @
UDEMY





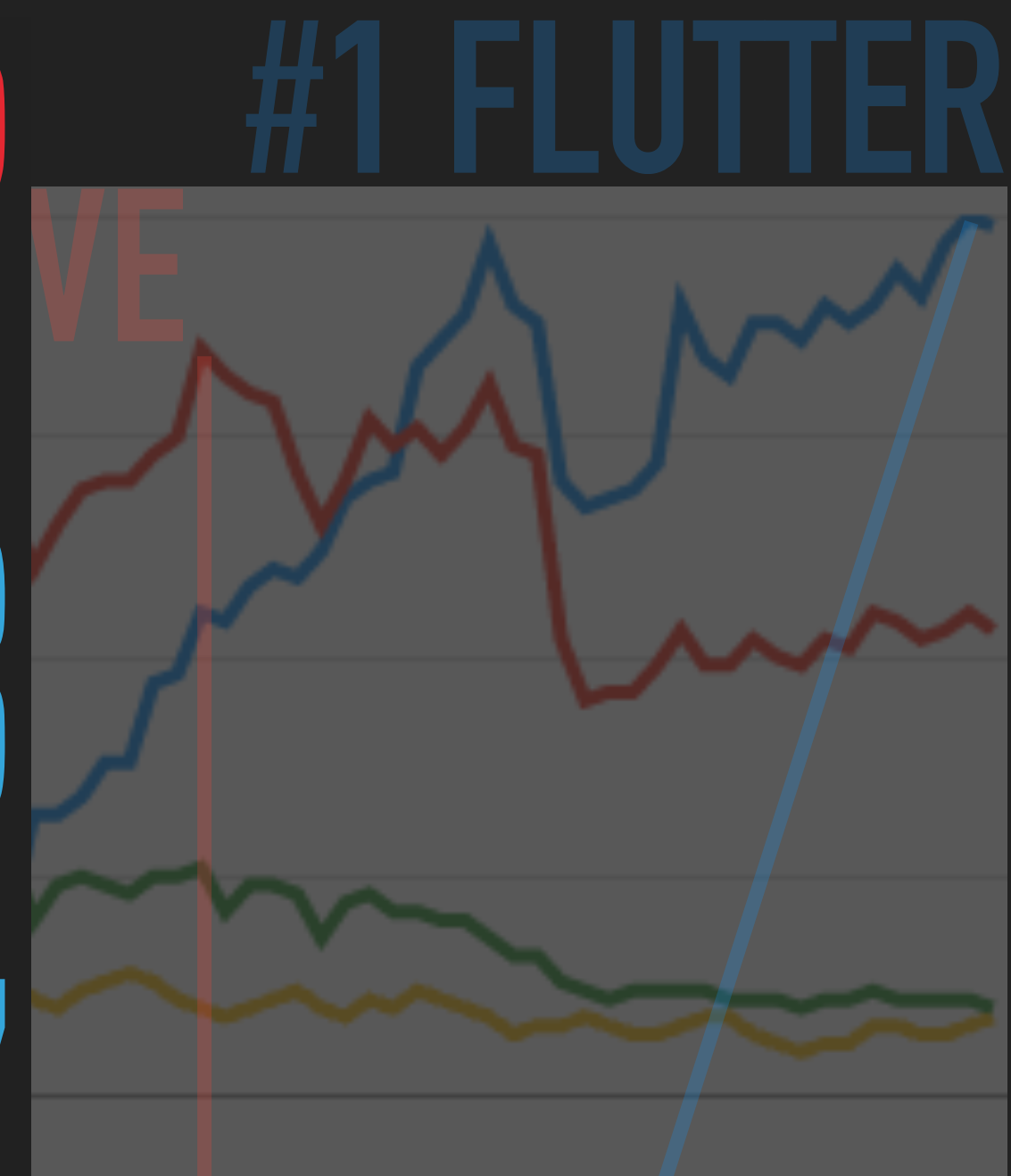
DEVELOPER POPULARITY:
GOOGLE SEARCHES





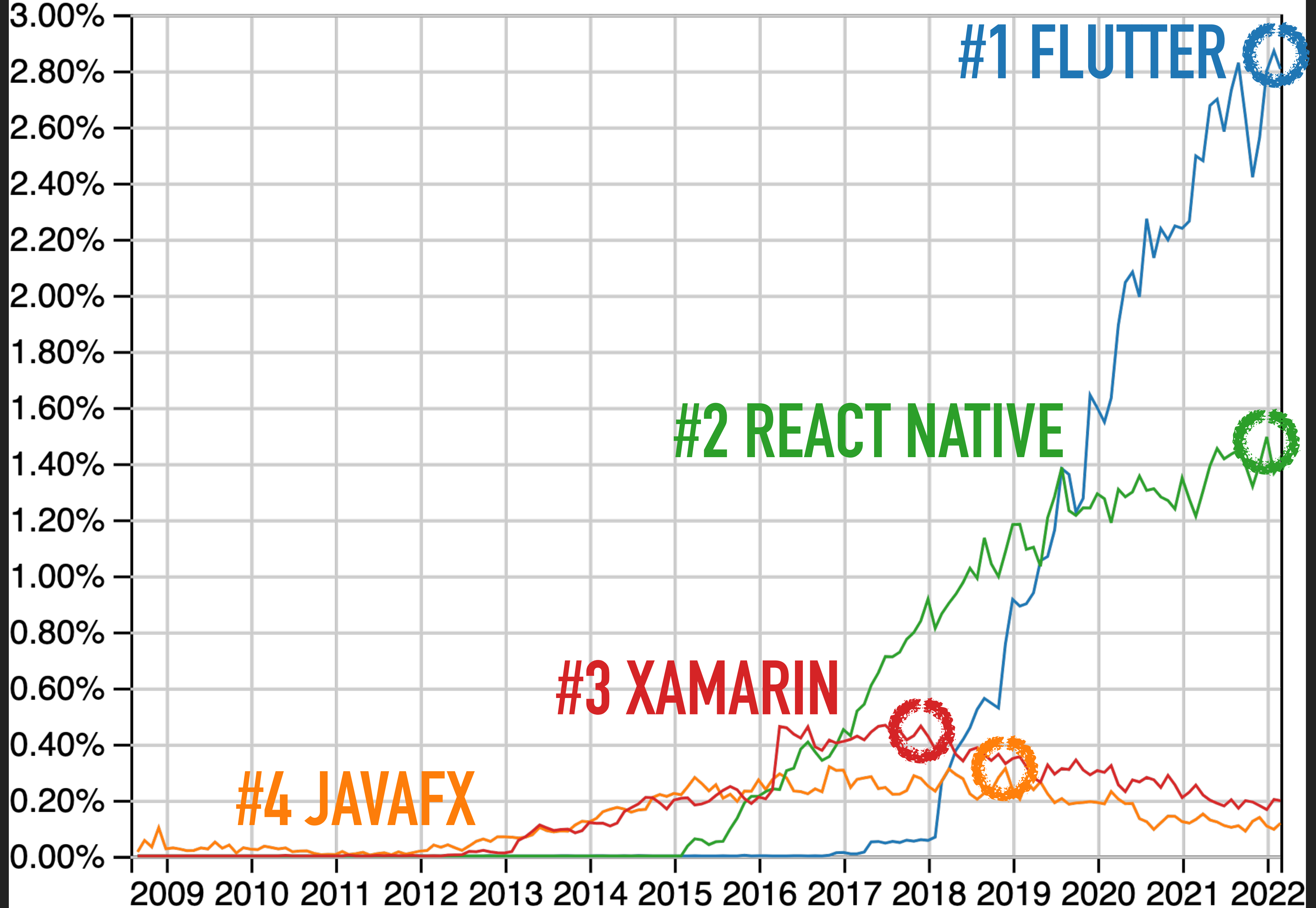
DEC 2008

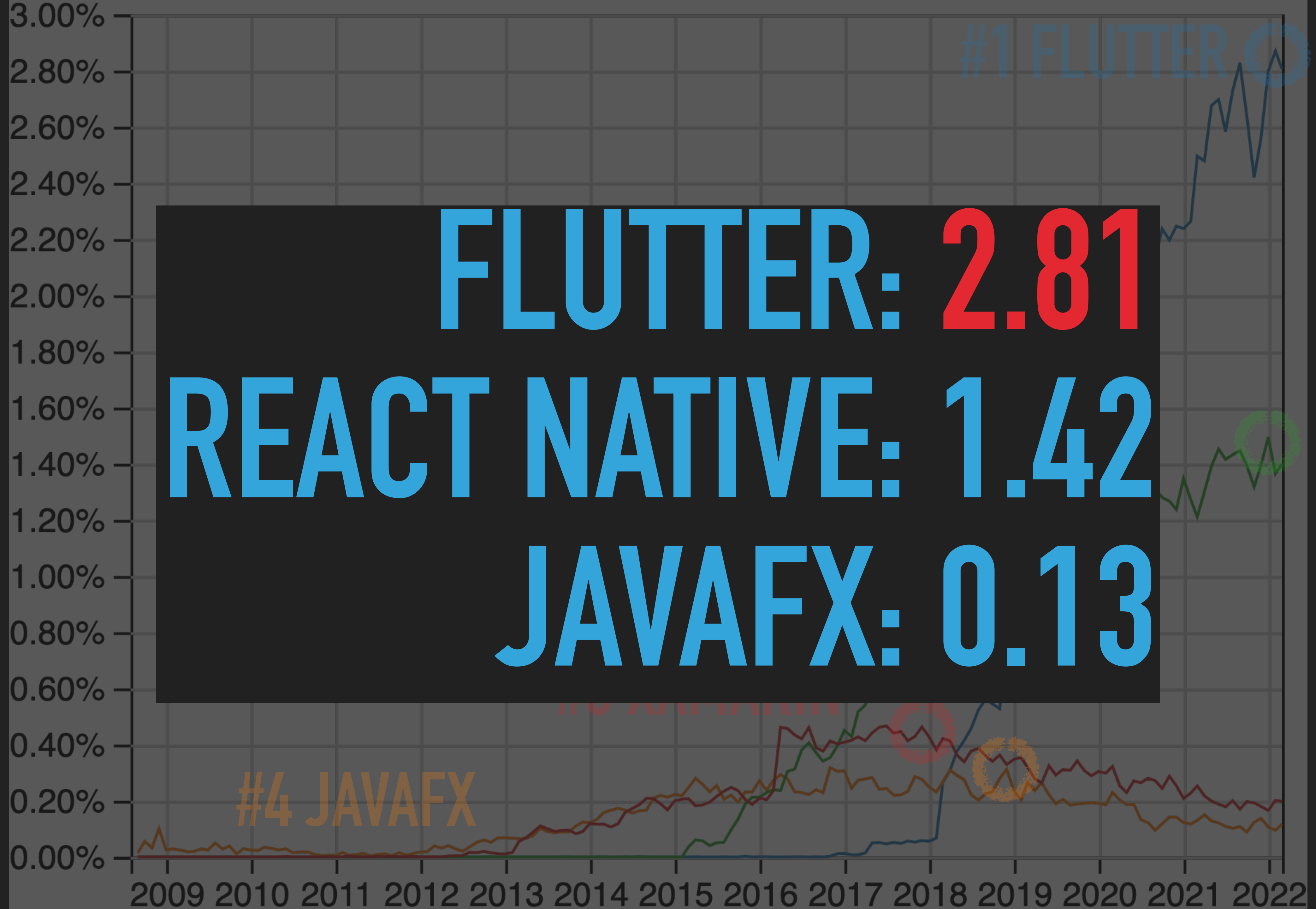
FLUTTER: 99
REACT NATIVE: 53
JAVA FX: 7



JUL 2019

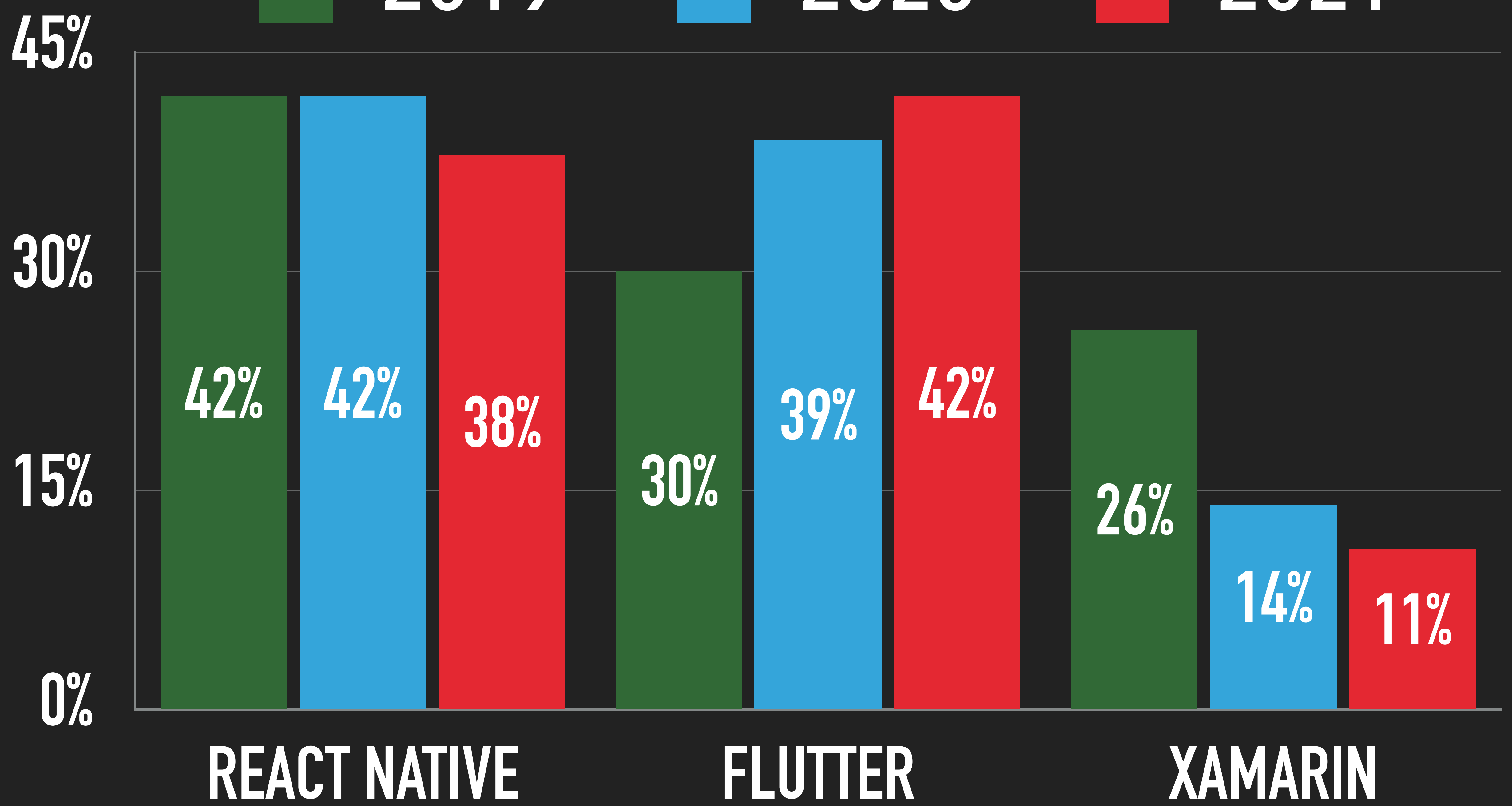
DEVELOPER POPULARITY:
QUESTIONS @
STACK OVERFLOW





DEVELOPER SURVEY: STATISTA (32K, JULY 2021)

2019 2020 2021



2019 2020 2021

45%

30%

15%

0%

REACT NATIVE

FLUTTER

XAMARIN

42%

42%

38%

30%

39%

42%

26%

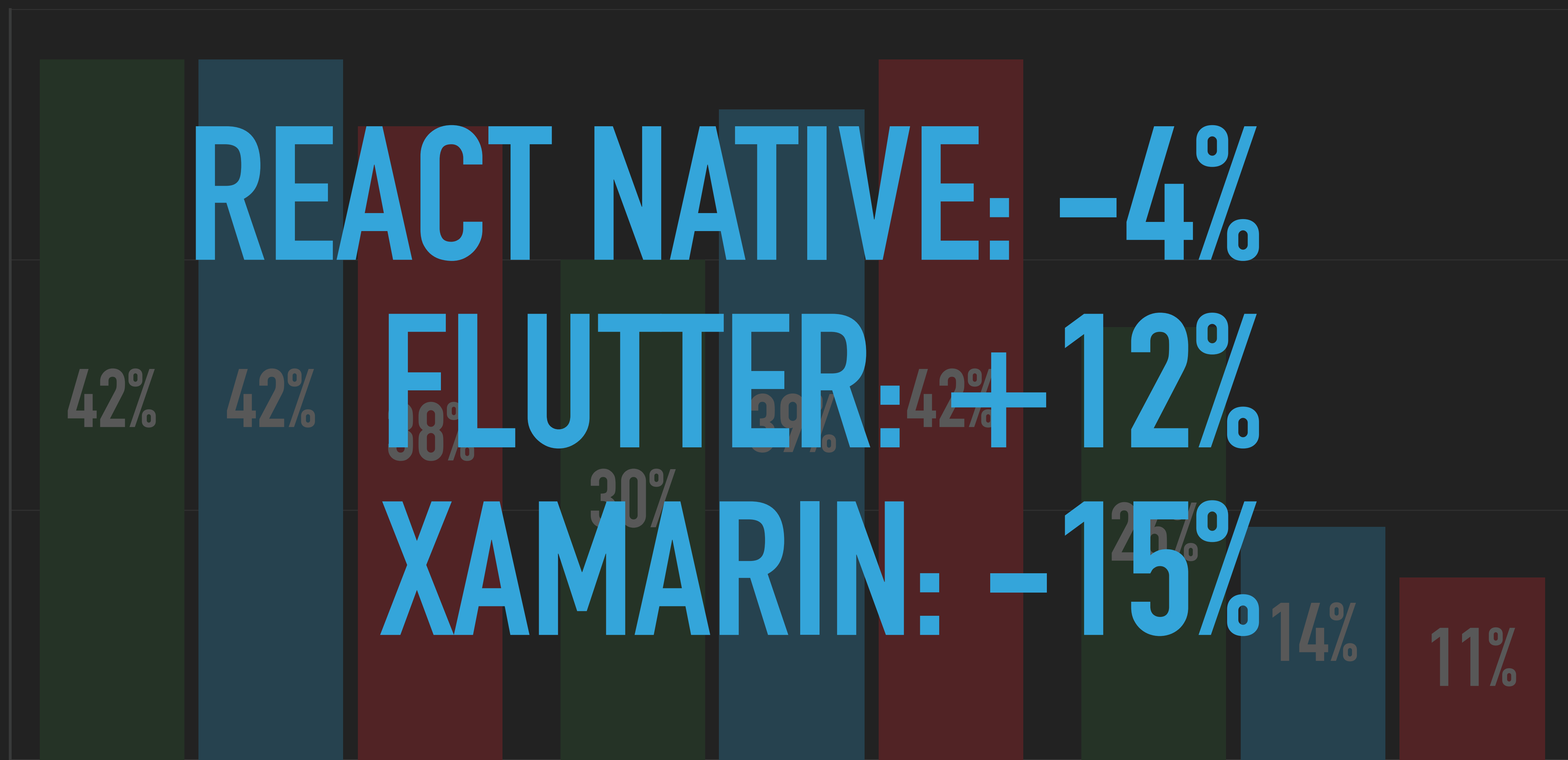
14%

11%

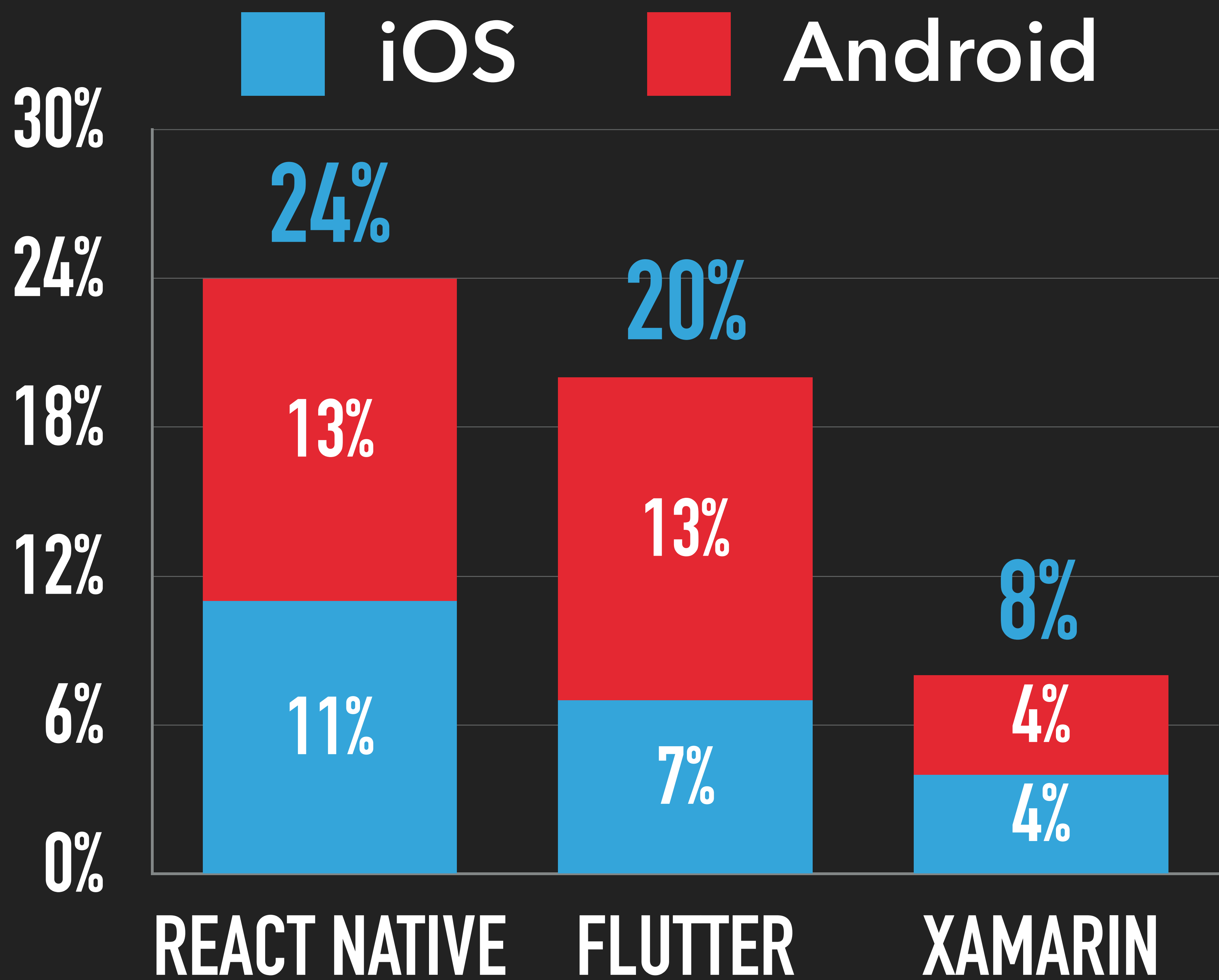
REACT NATIVE: -4%

FLUTTER: +12%

XAMARIN: -15%



APP ANALYSIS: APPFIGURES



EMPLOYER POPULARITY: REACT NATIVE
WINS 3.5X, LOOSING TO FLUTTER (UK) /
2.5X, PULLING AWAY FROM FLUTTER
(GLOBAL)

DEVELOPER POPULARITY: FLUTTER WINS UP
TO 2X, PULLING AWAY FROM REACT NATIVE

POPULARITY

MY NEWSLETTER:

**JVM LANGUAGES &
FRAMEWORKS, DATABASES,
WEB FRAMEWORKS**

SECTION SUMMARY

WEB: BIGGEST, MANY DEVS, HARD TO LEARN –
REACT, ANGULAR, VUE

NATIVE: RUN/LOOK & FEEL/ACCESS ON MOBILE
– FLUTTER (DEVELOPERS), REACT NATIVE
(EMPLOYERS), XAMARIN/.NET MAUI, JAVA FX

THAT'S HOW
CROSS-PLATFORM
FRONT-ENDS!

~~WHY & HOW CROSS PLATFORM~~

HOW FLUTTER WORKS

MY FLUTTER EXPERIENCES

WHEN TO USE WHICH FRAMEWORK

HOW FLUTTER WORKS

MASCOT DASH



**WILL GOOGLE
KILL FLUTTER?**



Killed by Google

Search

All (267)



Follow @killedbygoogle on Twitter.



March
2023

Google Currents (2019)

Like a fork stuck in the outlet in 11 months, Google Currents was service that provided social media features similar to Google+ for Google Workspace customers. It will be almost 4 years old.



December
2022

YouTube Originals

Sentenced to death in 8 months, YouTube Originals was a variety of original content including scripted series, educational videos, and music and celebrity programming. It will be over 6 years old.



December
2022

Google OnHub

Getting unplugged in 7 months, Google OnHub was a series of residential wireless routers manufactured by Asus and TP-Link that were powered by Google software, managed by Google apps, and offered enhanced special features like Google Assistant. It will be over 7 years old.



August
2022

YouTube Go

Going poof in 3 months, YouTube Go was an app aimed at making YouTube easier to access on mobile devices in emerging markets through special features like downloading video on wifi for viewing later. It will be over 5 years old.



June
2022

Google Chrome Apps

Off to the glue factory in about 2 months, Google Chrome Apps were hosted or packaged web applications that ran on the Google Chrome browser. It will be over 11 years old.

- ⊖ **IN-HOUSE COMPETITION:** ANGULAR, JETPACK COMPOSE
- ⊕ **POPULAR:** WINS WITH DEVS, 2ND PLACE IN JOBS
- ⊕ **EXTERNAL COMMITMENT:** TOYOTA, UBUNTU

WE DON'T KNOW!

WHICH PLATFORM
STABLE SINCE WHEN?

PC



FEB
2022



MAY 11
2022



WEB



MAR
2021

MOBILE



DEC
2018



**PROGRAMMING
LANGUAGE: DART**



**CAN'T WE USE
JAVA?**

```
class MyClass extends AnotherClass {  
    String firstName = "Karsten";  
    int yearsOfJava = 23;  
    List<String> myList = List.empty();  
  
    String sayHello(String name) {  
        var feedback = "Hello, " + name;  
        return feedback;  
    }  
}
```

THIS IS DART

```
class MyClass extends AnotherClass {  
    String firstName = "Karsten";  
    int yearsOfJava = 23;  
    List<String> myList = new LinkedList<>();  
  
    String sayHello(String name) {  
        var feedback = "Hello, " + name;  
        return feedback;  
    }  
}
```

THIS IS JAVA


```
class MyClass extends AnotherClass {  
    String firstName = "Karsten";  
    int yearsOfJava = 23;  
    List<String> myList = List.empty();  
  
    String sayHello(String name) {  
        var feedback = "Hello, " + name;  
        return feedback;  
    }  
}
```

THIS IS DART

```
class MyClass extends AnotherClass {  
    var firstName = "Karsten";  
    var yearsOfJava = 23;  
    var myList = <String>[];  
  
    sayHello(String name) => "Hello, $name";  
}
```

CONCISE DART

```
class MyClass extends AnotherClass {  
    String firstName = "Karsten";  
    int yearsOfJava = 23;  
    List<String> myList = new LinkedList<>();  
  
    String sayHello(String name) {  
        var feedback = "Hello, " + name;  
        return feedback;  
    }  
}
```

THIS IS JAVA

ORIGINALLY FOR BROWSER

"SIMPLIFIED JAVA FOR UI DEVELOPMENT"

SOUND NULL SAFETY (LIBRARIES) & ASYNC/AWAIT

1 MAIN THREAD, CREATE THREADS (ISOLATES)

DART

MAJOR RELEASE EVERY 2–3 MONTHS

3–5 **MINOR** RELEASES INBETWEEN

MAJOR FLUTTER RELEASES INCLUDE
NEW **DART** RELEASE

RELEASES

LIBRARIES: PLUGINS

23K PLUGINS, NOT ALL FOR WEB/DESKTOP

MOST ARE **OPEN-SOURCE**

GOOD "PLUGIN **SURVIVAL RATIO**"

FORKING PLUGINS IS EASY

PLUGINS

UI ELEMENTS: WIDGETS


```
Column(  
  mainAxisAlignment:  
    MainAxisAlignment.center,  
  children: <Widget>[  
    Text('Pushed $_counter times'),  
    ElevatedButton(  
      onPressed: () =>  
        setState(() => _counter++),  
      child: Icon(Icons.add),  
    )  
  ],  
)
```

UI AS CODE

```
Column(  
  mainAxisAlignment:  
    MainAxisAlignment.center,  
  children: <Widget>[  
    Text('Pushed $_counter times'),  
    ElevatedButton(  
      onPressed: () =>  
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      child: Icon(Icons.add),  
    )  
  ],  
)
```

UI AS CODE

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Column(  
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      child: Icon(Icons.add),  
    )  
  ],  
)
```

UI AS CODE

IOS & MACOS: SWIFT UI (SEP 2019)

ANDROID: JETPACK COMPOSE (JUL 2021)

**WINDOWS, MACOS, IOS, ANDROID:
.NET MAUI (Q2/2022)**

DECLARATIVE PROGRAMMING

UI AS CODE – NO GRAPHICAL UI BUILDER, NO CSS

CONFIGURE BUILT-IN WIDGETS, CREATE YOUR OWN

EMULATED – NO NATIVE SDK UI ELEMENTS:
"FLUTTER PAINTS PIXELS"

WIDGETS

LOOK & FEEL: WIDGET SETS

BASE: CONTAINER, ROW, COLUMN, TEXT, IMAGES,
SHAPES, ...

BUILT-IN LOOK & FEEL: MATERIAL DESIGN, IOS

3RD-PARTY LOOK & FEEL: MACOS, WINDOWS, LINUX

WIDGETS SETS

SAMPLE FLUTTER APP:
5 NATIVE LOOK & FEEL
WITH 1 CODEBASE

LIVE DEMO

SAMPLE FLUTTER APP



5 NATIVE LOOK & FEEL

SWITCH LOOK & FEEL

SAMPLE APP
ON GITHUB

CREATED MY **OWN** WIDGETS

WIDGETS HAVE **SWITCH** STATEMENT =>
CREATES WIDGET FOR CURRENT PLATFORM

HOW DOES **SWITCH** WORK?

GLOBAL **STATE** MANAGEMENT: "PROVIDER"

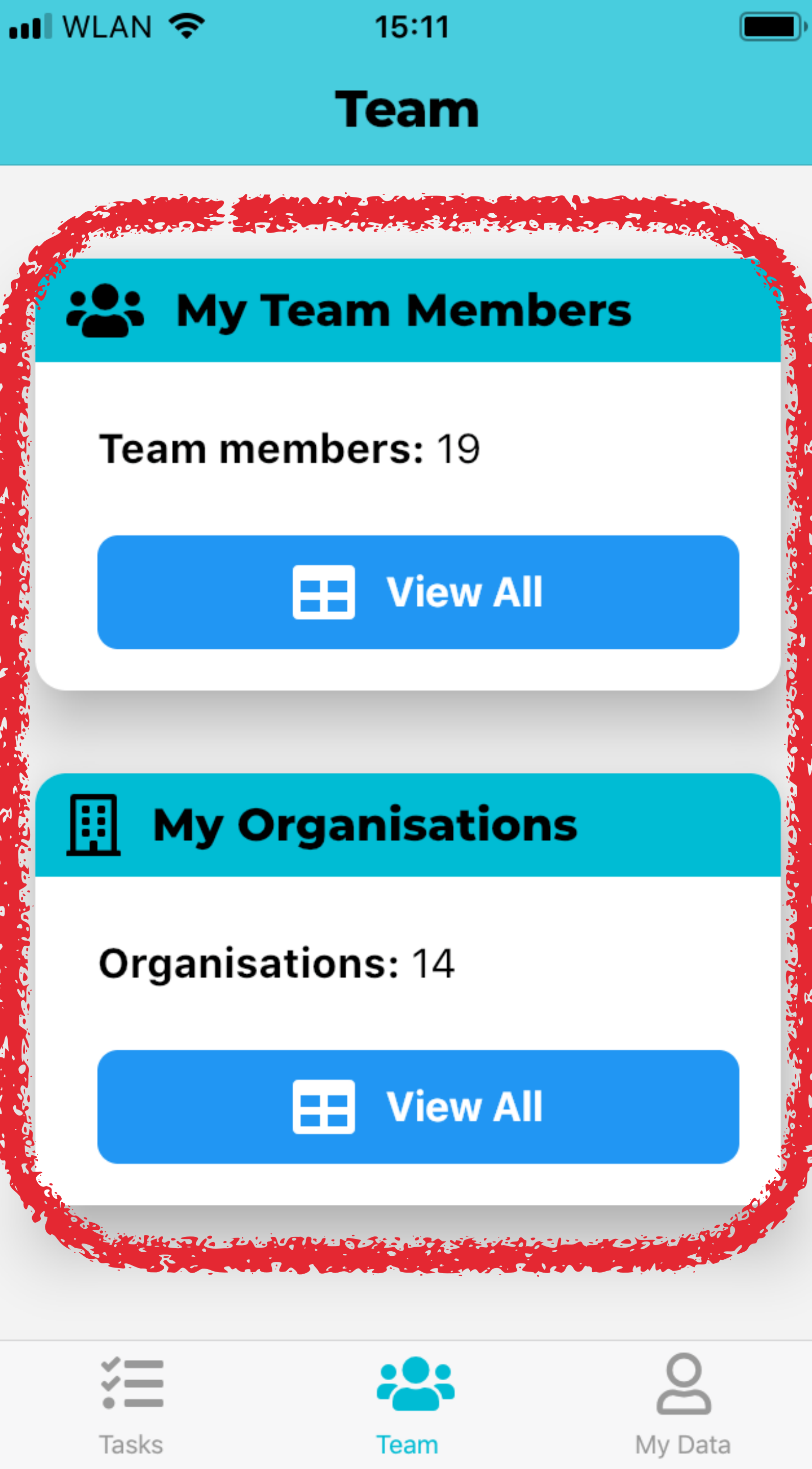
WIDGET SET: MATERIAL/NATIVE/CUSTOM

RESPONSIVE **LAYOUT:** ADAPT TO SCREEN SIZES
& ORIENTATION: NO DEFAULT, 3RD PARTY PLUGIN

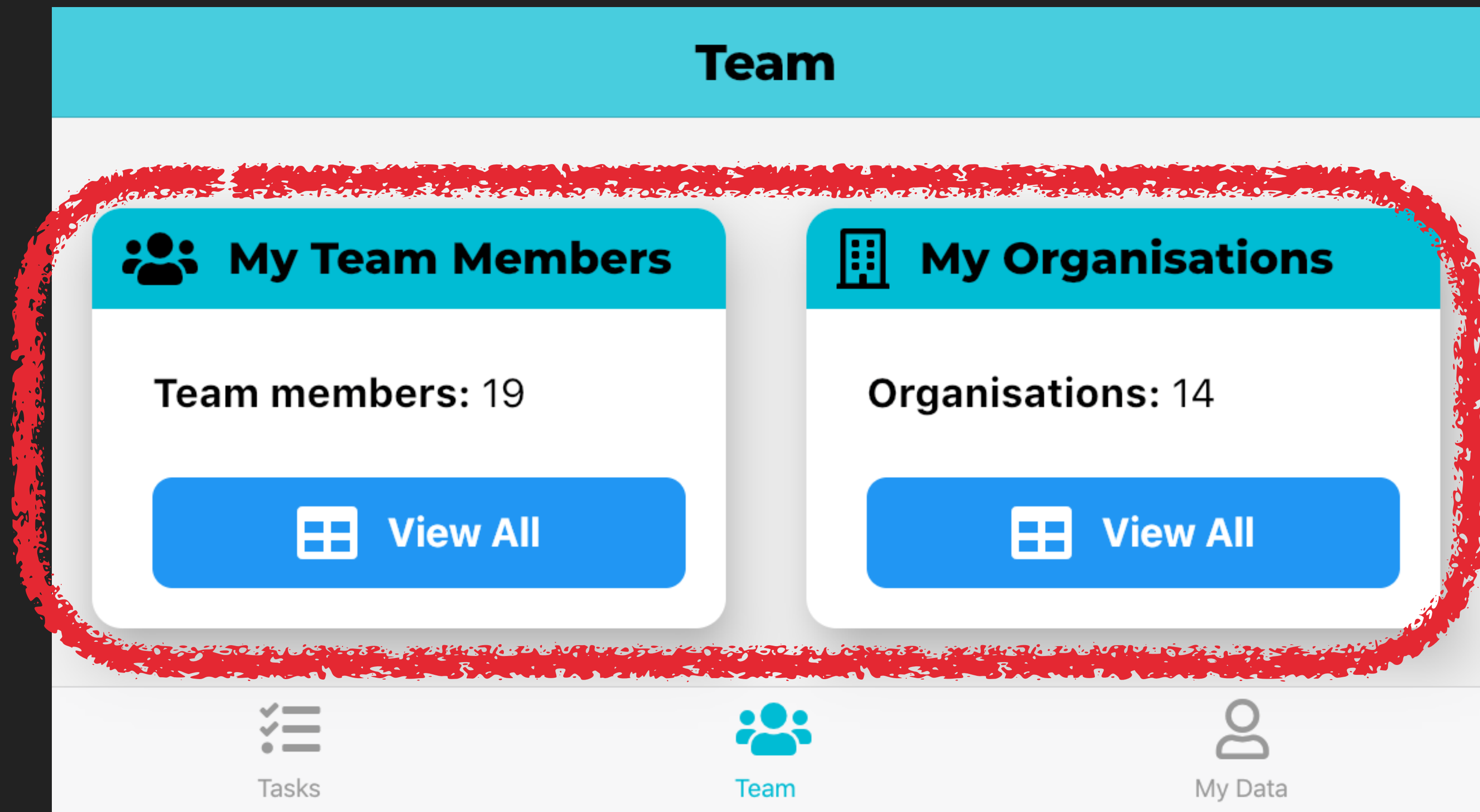
ARCHITECTURAL **CHOICES**

SIZE DIFFERENCES





ORIENTATION CHANGES



NATIVE INTEGRATION

PUT SOME FLUTTER **SCREENS** INTO NATIVE APPS

IOS/ANDROID: **STABLE**

WEB/DESKTOP: **UNDER CONSTRUCTION?**

FLUTTER **IN** NATIVE APPS

PLUGINS: CAMERA, PICTURES, LOCATION, ...

MOBILE: SHOW NATIVE **SCREENS** + **WEB VIEWS**

MOBILE: **CHANNELS** (PUBLISH & SUBSCRIBE) TO
NATIVE CODE & **C-API**

NATIVE CODE IN FLUTTER

RUN NATIVELY

ANDROID: **ANDROID STUDIO**, IOS/MACOS: MACOS + **XCODE**,
WINDOWS: WINDOWS + **VISUAL STUDIO**

FLUTTER **ENGINE**: JAVASCRIPT + C++ (WEB), C++ (ELSE)

FLUTTER **APP**: NATIVE ARM LIBRARY (MOBILE), JAVASCRIPT
(WEB), C++ (WINDOWS, LINUX), OBJECTIVE-C (MACOS)

PLATFORM TOOL CHAINS

CODE, BUILD & DEPLOY

**"EXCELLENT
DEVELOPER
EXPERIENCE"**

IDE: INTELLIJ/ANDROID STUDIO & VISUAL STUDIO CODE

DEV TOOLS: INSPECTOR, PROFILER FOR MEMORY, CPU & NETWORK, "JANK" DIAGNOSIS, WORK IN TERMINAL

CODE

MONOREPO: CODE FOR ALL PLATFORMS IN 1 GIT PROJECT

1 FOLDER FOR **DART**, 1 FOLDER PER **PLATFORM** (SOME PROJECTS – XCODE, ANDROID STUDIO)

PLATFORM: NATIVE **SHELLS** (APPDELEGATE.SWIFT, MAINACTIVITY.KT)

PROJECT STRUCTURE

SLOW IOS/ANDROID BUILDS

DART **VM** DURING DEVELOPMENT

HOT **RESTART**: APP STARTS OVER IN 3 SECONDS

HOT **RELOAD**: 1 SECOND FROM "SAVED" TO "RUNNING"

FAST BUILD & DEPLOY

FLUTTER PLATFORM CHECK

- ⊕ **"2 APPS FOR PRICE OF 1"**
- ⊕ **NATIVE LOOK & FEEL**
- ⊕ **ACCESS TO NATIVE OS LIBRARIES**
- ⊕ **FAST BUILD & DEPLOY**

MOBILE: 👍 👍

- ➖ **ONLY** MATERIAL UI
- ➖ **NO** ACCESS TO PLATFORM LIBRARIES (JAVASCRIPT)
- ➖ TINY AMOUNT OF **LIBRARIES** VS. JAVASCRIPT

WEB: 👎

- ⊖ WHY NOT **WEB**?
- WINDOWS STABLE, MAC & LINUX JUST GOT STABLE
- ⊕ **ACCESS** TO NATIVE OS LIBRARIES
- WINDOWS & MACOS UI: INCOMPLETE, **MAINTAINED?**

DESKTOP: 👎

SECTION SUMMARY

DART

NATIVE ACCESS

PLUGINS

RUNS NATIVELY

WIDGETS

CODE, BUILD & DEPLOY

WIDGETS SETS

PLATFORM CHECK

**THAT'S HOW
FLUTTER WORKS**

~~WHY & HOW CROSS PLATFORM~~

~~HOW FLUTTER WORKS~~

MY FLUTTER EXPERIENCES

WHEN TO USE WHICH FRAMEWORK

MY FLUTTER EXPERIENCES

B2B SAAS FOR UK COMPANIES
THAT EMPLOY CAT-SITTERS

REMOVE **FRICTION** & SAVE **TIME**

I WROTE THE CODE

MY **TINY** START-UP

TEAM
MEMBER

FLUTTER

IOS & ANDROID

FRONT-
END

MANA-
GER

ANGULAR

BROWSER

JSON
REST

AUTHENTICATION

FILES

FIREBASE

BACK-
END

JAVA & SPRING

DB

UNLIMITED STORAGE, PUSH NOTIFICATIONS

AS FAST & EASY TO USE AS POSSIBLE => NATIVE UI

PRODUCTIVITY: DART + FAST CODE, BUILD & DEPLOY

FLUTTER BUSINESS CASE

FLUTTER 👍

POWER

NATIVE 👍

1 SOURCE

FIREBASE 👍

CONSISTENT

BASICS

MORE ON TALK PAGE

MY FLUTTER EXPERIENCES

~~WHY & HOW CROSS PLATFORM~~

~~HOW FLUTTER WORKS~~

~~MY FLUTTER EXPERIENCES~~

WHEN TO USE WHICH FRAMEWORK

WHEN TO USE WHICH
MOBILE NATIVE CROSS-
PLATFORM FRAMEWORK?

SUMMARY SO FAR

WHY CROSS-PLATFORM FRONT-ENDS?

CROSS-PLATFORM

FRONT-ENDS:

CHEAPER & GOOD ENOUGH

**HOW CROSS-PLATFORM
FRONT-ENDS?**

WEB: BIGGEST, MANY DEVS, HARD TO LEARN –
REACT, ANGULAR, VUE

NATIVE: RUN/LOOK & FEEL/ACCESS ON MOBILE
– FLUTTER (DEVELOPERS), REACT NATIVE
(EMPLOYERS), XAMARIN/.NET MAUI, JAVA FX

HOW FLUTTER WORKS

DART

NATIVE ACCESS

PLUGINS

RUNS NATIVELY

WIDGETS

CODE, BUILD & DEPLOY

WIDGETS SETS

PLATFORM CHECK

MY FLUTTER EXPERIENCES

BUSINESS

POWER

FLUTTER 👍

1 SOURCE

NATIVE 👍

CONSISTENT

FIREBASE 👍

BASICS

FLUTTER *VS.* WORLD

JAVASCRIPT

SLOWER

NATIVE UI ELEMENTS

SEPARATE PROJECTS

DESKTOP: UNOFFICIAL

DART

FASTER

EMULATED UI ELEMENTS

MONOREPO

DESKTOP: OFFICIAL

REACT NATIVE VS. FLUTTER

JOB AD MENTIONS UK: 13X

COURSES BOUGHT: 11X

GOOGLE SEARCHES: 14X

STACK OVERFLOW QUESTIONS: 22X

POPULAR: FLUTTER VS. JAVA FX

JAVA

UI BUILDER

NO NATIVE L&F

LIMITED FEATURES

WEB IMMATURE

JAVAFX

DART

UI AS CODE

NATIVE L&F

FULL FEATURES

DESKTOP IMMATURE

FLUTTER

VS.

WHEN TO USE WHICH
MOBILE NATIVE CROSS-
PLATFORM FRAMEWORK?

WEB: REACT NATIVE

.NET: .NET MAUI

JAVA + LEGACY JAVA-BIBLIOTHEK: JAVAFX

SONST: FLUTTER

DEVELOPER EXPERIENCE

BACK TO THE BIG QUESTION

**BUILD MOBILE, WEB &
DESKTOP FRONTENDS WITH
FLUTTER & 1 CODEBASE?**

YES, WE CAN

Karsten

Last name

VIP customer ☐

IOS



Info



Form



Settings

Cancel

x

Form

SAVE

First name

Karsten

Last name

VIP customer



ANDROID



Info



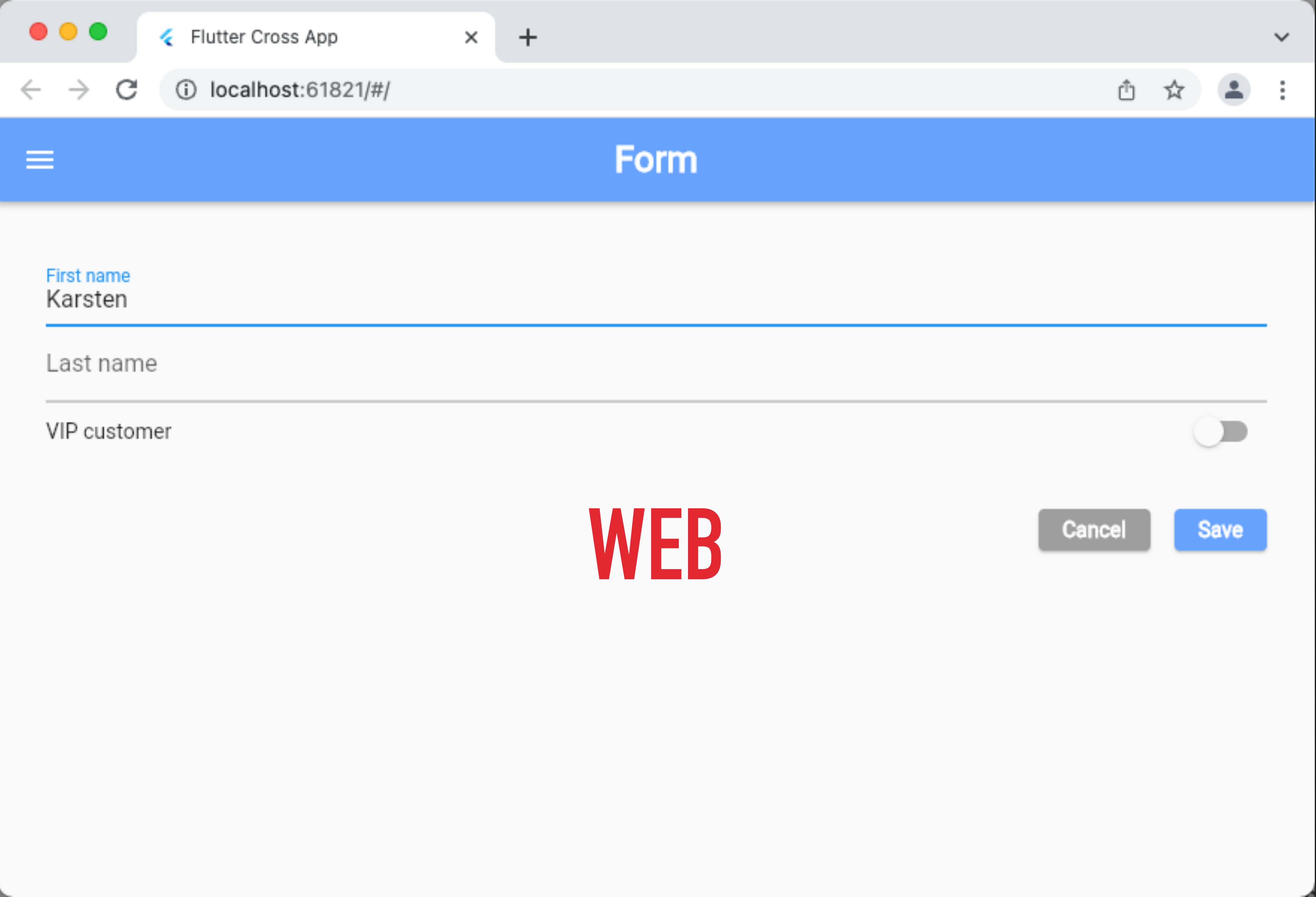
Form



Settings

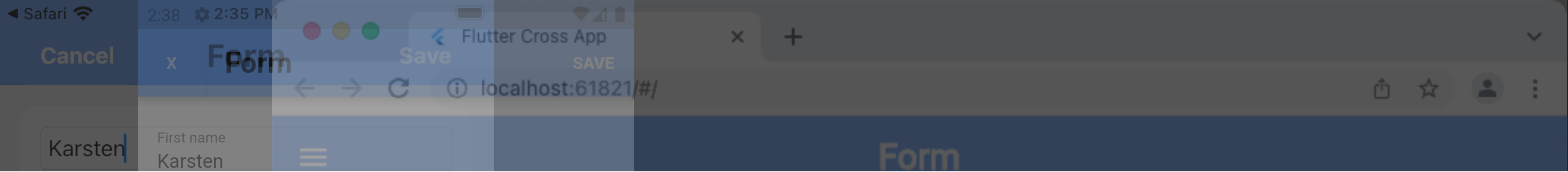


Info



100%

WEB



flutter_native_ui_cross_example

Form

- Info
- Form
- Settings

First name

Karsten

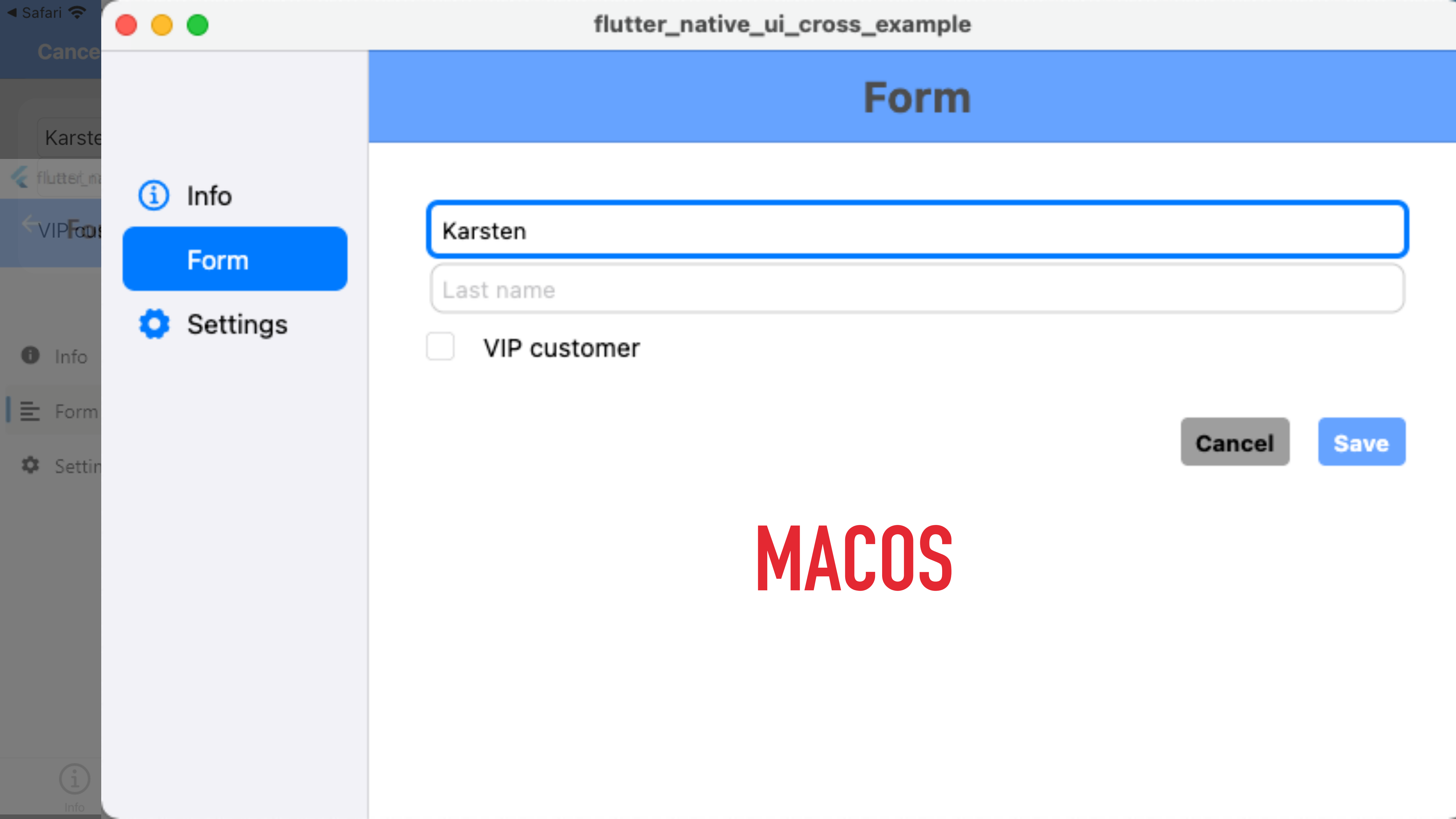
Last name

Doe


☐ VIP customer

Save Cancel


WINDOWS



Form

 Info

Form

 Settings

Karsten

Last name

☐ VIP customer

Cancel

Save

MACOS

BUT WE SHOULDN'T

MOBILE: 👍

WEB: 👎

DESKTOP: 👎

- ⊕ "2 APPS FOR PRICE OF 1"
- ⊕ NATIVE LOOK & FEEL
- ⊕ ACCESS TO NATIVE OS LIBRARIES
- ⊕ FAST BUILD & DEPLOY

MOBILE: 👍

- ➖ **ONLY** MATERIAL UI
- ➖ **NO** ACCESS TO PLATFORM LIBRARIES (JAVASCRIPT)
- ➖ TINY AMOUNT OF **LIBRARIES** VS. JAVASCRIPT

WEB: 👎

- ⊖ WHY NOT **WEB**?
- WINDOWS STABLE, MAC & LINUX JUST GOT STABLE
- ⊕ **ACCESS** TO NATIVE OS LIBRARIES
- WINDOWS & MACOS UI: INCOMPLETE, **MAINTAINED?**

DESKTOP: 👎

JSF: 👎

JAVAFX: 👎

STANDARD JAVA WEB FRONT-END LIBRARY

NO SINGLE PAGE APPLICATIONS (SPA)

UNPOPULAR: VERY FEW JOBS (VUE: 14X , ANGULAR: 27X, REACT: 40X)/ GOOGLE SEARCHES / STACK OVERFLOW QUESTIONS

NO NEW FEATURES FOR FIVE YEARS (COMING MID-2022)

JAKARTA SERVER FACES: 

JOB AD MENTIONS UK: 13X

COURSES BOUGHT: 11X

GOOGLE SEARCHES: 14X

STACK OVERFLOW QUESTIONS: 22X

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**WHEN TO USE WHICH
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~~WHY & HOW CROSS PLATFORM~~

~~HOW FLUTTER WORKS~~

~~MY FLUTTER EXPERIENCES~~

~~WHEN TO USE WHICH FRAMEWORK~~

The image features a classic 'The End' title card. It consists of a series of concentric circles in shades of red, creating a tunnel-like effect that draws the eye toward the center. The circles are slightly offset, giving a 3D or layered appearance. In the very center is a solid black circle. Overlaid on this central black circle is the text 'The End' in a white, elegant, cursive script. The text has a subtle drop shadow, making it stand out against the black background.

The End

**MY TALK DOESN'T STOP
WHEN I STOP TALKING!™**



SLIDES & VIDEOS

ADDITIONAL INFORMATION

NATIVE UI SAMPLE APP

GET STARTED WITH FLUTTER

FEEDBACK & NEWSLETTER

BPF.LI/DUK

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IMAGE SOURCES