



BETTER PROJECTS  
**FASTER**

**QCon**  
LONDON by InfoQ

**KARSTEN SILZ**

**APRIL 4, 2022**



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**GOOGLE'S FLUTTER: MOBILE, WEB &  
DESKTOP FRONTENDS WITH 1 CODEBASE?**

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

**YES, WE CAN**

**I'LL SHOW YOU**

**BUT WE GENERALLY  
SHOULDN'T**

**I'LL TELL YOU WHY**

**FLUTTER ON MOBILE:**



**I'LL ALSO TELL YOU WHY**



**WHY** CROSS-PLATFORM?

**HOW** CROSS-PLATFORM?

**HOW** FLUTTER WORKS

**MY** FLUTTER EXPERIENCES

**WHY AM I HERE?**



**FLUTTER APP IN APP STORES**

**INFOQ JAVA EDITOR, PC QCON LONDON**

**JAVA DEVELOPER FOR 23 YEARS**

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

I GIVE YOU OPTIONS...

... **BUT YOU DECIDE!**



**SLIDES &  
MORE**

**[BPF.LI/QCN](https://bpf.li/qcn)**

**WHY** CROSS-PLATFORM

**HOW** CROSS-PLATFORM

**HOW** FLUTTER WORKS

**MY** FLUTTER EXPERIENCES

# **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!

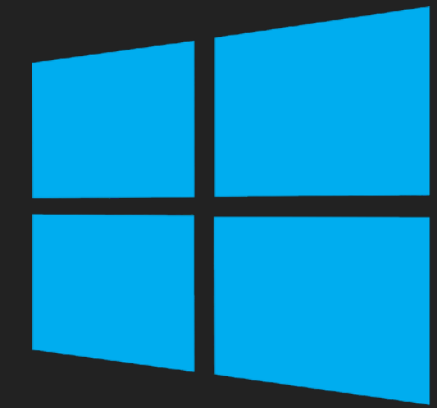
C++

SWIFTUI  
SWIFT

JETPACK  
COMPOSE  
KOTLIN

**PLATFORM SDK  
FRONT-ENDS:  
TOO EXPENSIVE**

# 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 CROSS-PLATFORM~~

HOW CROSS-PLATFORM

HOW FLUTTER WORKS

MY FLUTTER EXPERIENCES

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

**BIGGEST** SOFTWARE ECOSYSTEM EVER

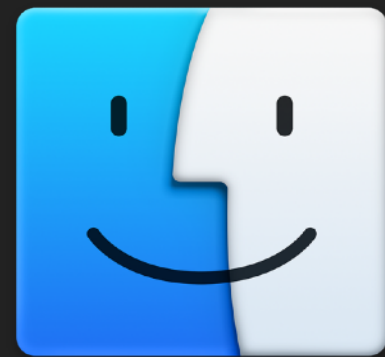
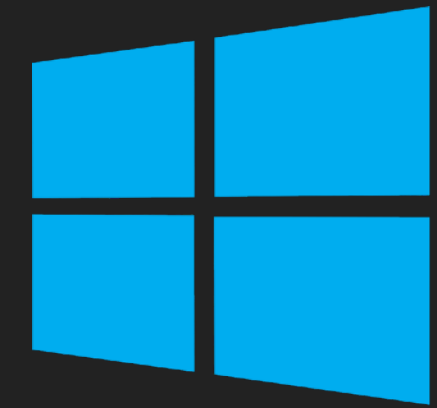
**MANY** & CHEAP DEVELOPERS

**REACT,** ANGULAR, VUE

HARD TO **LEARN**

**WEB**

# PC



# MOBILE



HTML, CSS  
JAVASCRIPT/TYPESCRIPT

**MISSING** ON IOS: PUSH NOTIFICATIONS, BACKGROUND SYNC

**RESTRICTED:** LOCAL STORAGE, NOT ALL NATIVE FEATURES

OFTEN **SLOWER** & LESS COMFORTABLE

DOESN'T HAVE "**PREMIUM FEEL**" OF NATIVE APP

**ISSUES: WEB ON MOBILE**

**WHY NATIVE**  
**LOOK & FEEL?**

**NON-NATIVE LOOK & FEEL:**  
**SOME USERS CONFUSED,**  
**SOME COMPLAIN**

**GOOGLE** APPS ON IOS:

MATERIAL UI =>

**NATIVE** IOS UI

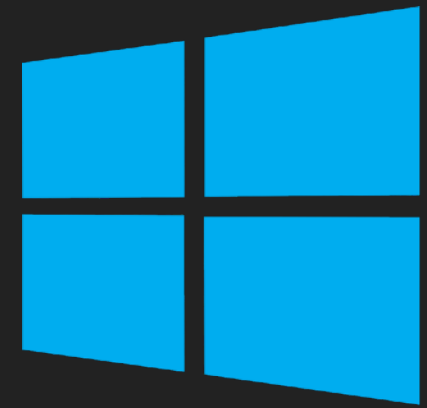


**"REALLY MAKE  
PRODUCTS FEEL GREAT  
ON APPLE PLATFORMS"**

**JEFF VERKOEYEN, GOOGLE**

# CROSS-PLATFORM X 2: WEB + NATIVE

# PC



HTML, CSS

JAVASCRIPT/TYPESCRIPT

# MOBILE



NATIVE CROSS-  
PLATFORM

**ADDING MOBILE APP TO  
EXISTING WEB APP...**

...OFTEN HAS **NO**  
BUSINESS CASE – UNLESS  
HARD RESTRICTION

**DEFINE: "NATIVE"**

**RUNS** NATIVELY, IN APP STORES

**NATIVE** LOOK & FEEL

**ACCESS** TO NATIVE PLATFORM FEATURES

**NATIVE X 3**

**NATIVE CROSS-  
PLATFORM  
FRAMEWORKS?**



**FLUTTER** (GOOGLE)

**XAMARIN/.NET MAUI**  
(MICROSOFT)

**REACT NATIVE** (META)

**JAVAFX** (GLUON)

**OPEN-SOURCE & JAVA-LIKE**

**DECLARATIVE UI MODEL**

# STANDARD FLUTTER APP (MODIFIED)

localhost:57317/#/

# Flutter Demo Home Page

Pushed 0 times



```
int _counter = 0;
[...]  
Column(  
  mainAxisAlignment:  
    MainAxisAlignment.center,  
  children: <Widget>[  
    Text('Pushed $_counter times'),  
    ElevatedButton(  
      onPressed: () =>  
        setState(() => _counter++),  
      child: Icon(Icons.add),  
    )  
  ],  
)
```

localhost:57317/#/

Flutter Demo Home Page

Pushed 0 times

+

```
int _counter = 0;
[...]
Column(
  mainAxisAlignment:
    MainAxisAlignment.center,
  children: <Widget>[
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    ElevatedButton(
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  ],
)
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localhost:57317/#/

Flutter Demo Home Page

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int _counter = 0;
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      onPressed: () =>
        setState(() => _counter++),
      child: Icon(Icons.add),
    )
  ],
)
```

**UI AS CODE**

```
int _counter = 0;
[...]  
Column(  
  mainAxisAlignment:  
    MainAxisAlignment.center,  
  children: <Widget>[  
    Text('Pushed $_counter times'),  
    ElevatedButton(  
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**UI AS CODE**



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**UI AS CODE**

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**UI AS CODE**

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        setState(() => _counter++),  
      child: Icon(Icons.add),  
    )  
  ],  
)
```

## STATUS & EVENTS

```
int _counter = 0;
[...]
Column(
  mainAxisAlignment:
    MainAxisAlignment.center,
  children: <Widget>[
    Text('Pushed $_counter times'),
    ElevatedButton(
      onPressed: () =>
        setState(() => _counter++),
      child: Icon(Icons.add),
    )
  ],
)
```

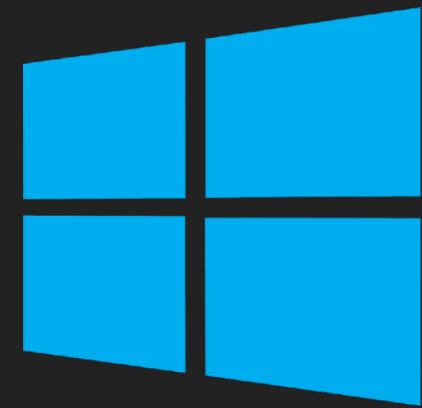
**FRAMEWORK  
UPDATES UI**

**UI AS CODE**

**STATUS & EVENTS**

**FRAMEWORK UPDATES UI**

**DECLARATIVE MODEL**



**.NET MAUI (Q2/2022)**



**SWIFTUI (2019)**

**REACT NATIVE (2015)**



**REACT (2013)**

**FLUTTER (2017)**



**SWIFTUI (2019)**



**JETPACK COMPOSE (JULY 2021)**

**XAMARIN – OLD:** OLD .NET, C#, UI WITH  
PLATFORM SDKS

**.NET MAUI – NEW:** NEW .NET, C#, UI IN MAUI

**XAMARIN/.NET MAUI**

**WHICH FRAMEWORK  
IS POPULAR?**



EASIER TO **USE**

EASIER TO **CONVINCE** TEAMMATES/BOSSES

ALL ELSE EQUAL: USE **MOST** POPULAR

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

**WHY** POPULARITY?

**I MEASURE TECHNOLOGY  
POPULARITY**

**TALK PAGE: GOOGLE  
SEARCHES & QUESTIONS  
@ STACK OVERFLOW**

**FLUTTER WINS**

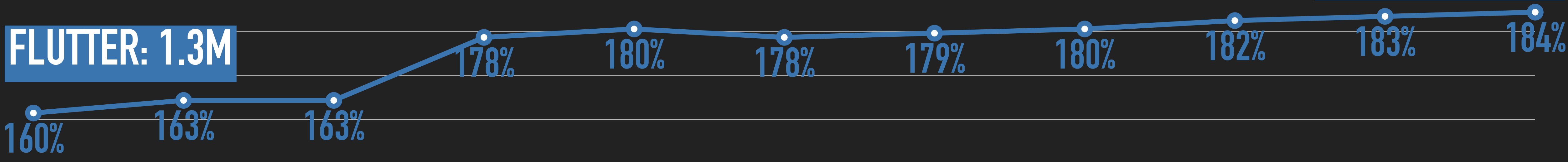
# **JOB MARKET – DEMAND & SUPPLY?**

**TEAMMATES &  
BOSSES LOOK THERE!**

**DEVELOPER SUPPLY PROXY:  
COURSES BOUGHT @  
UDEMY**

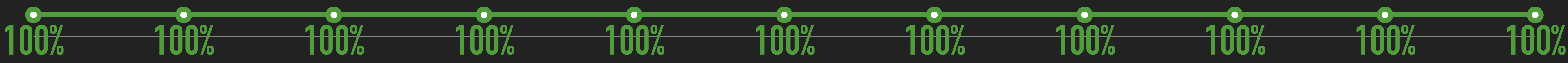
**FLUTTER: 2.06M**

**FLUTTER: 1.3M**



**REACT NATIVE: 812K**

**REACT NATIVE: 1.12M**

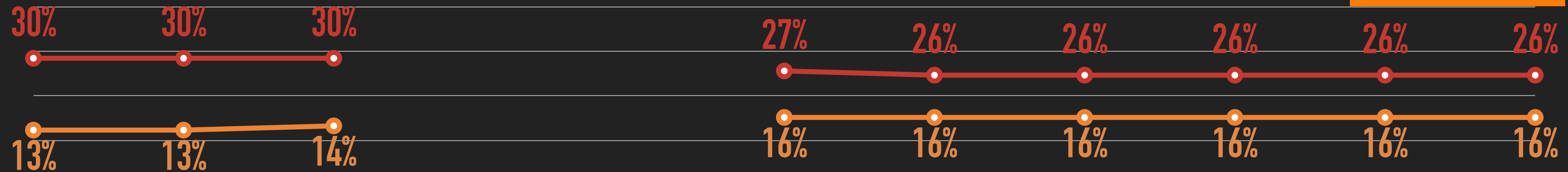


**XAMARIN: 241K**

**XAMARIN: 288K**

**JAVAFX: 109K**

**JAVAFX: 181K**

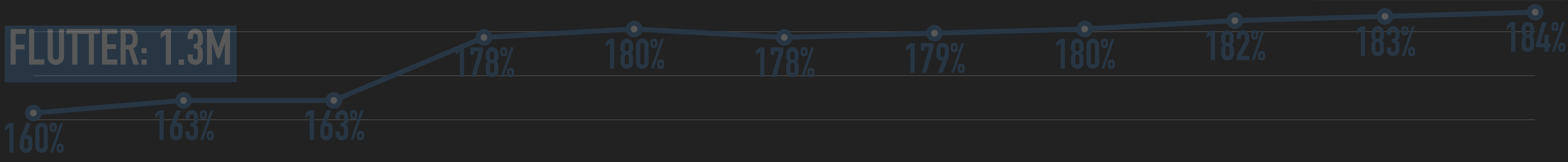


MAR 21   APR 21   MAY 21   AUG 21   SEP 21   OCT 21   NOV 21   DEC 21   JAN 22   FEB 22   MAR 22



FLUTTER: 2.06M

FLUTTER: 1.3M



REACT NATIVE: 812K

REACT NATIVE: 1.12M



FLUTTER: +700K

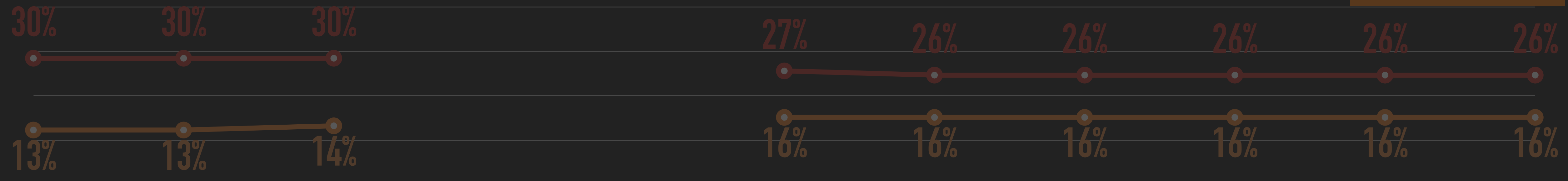
REACT NATIVE: +300K

XAMARIN: 241K

XAMARIN: 288K

JAVAFX: 109K

JAVAFX: 181K



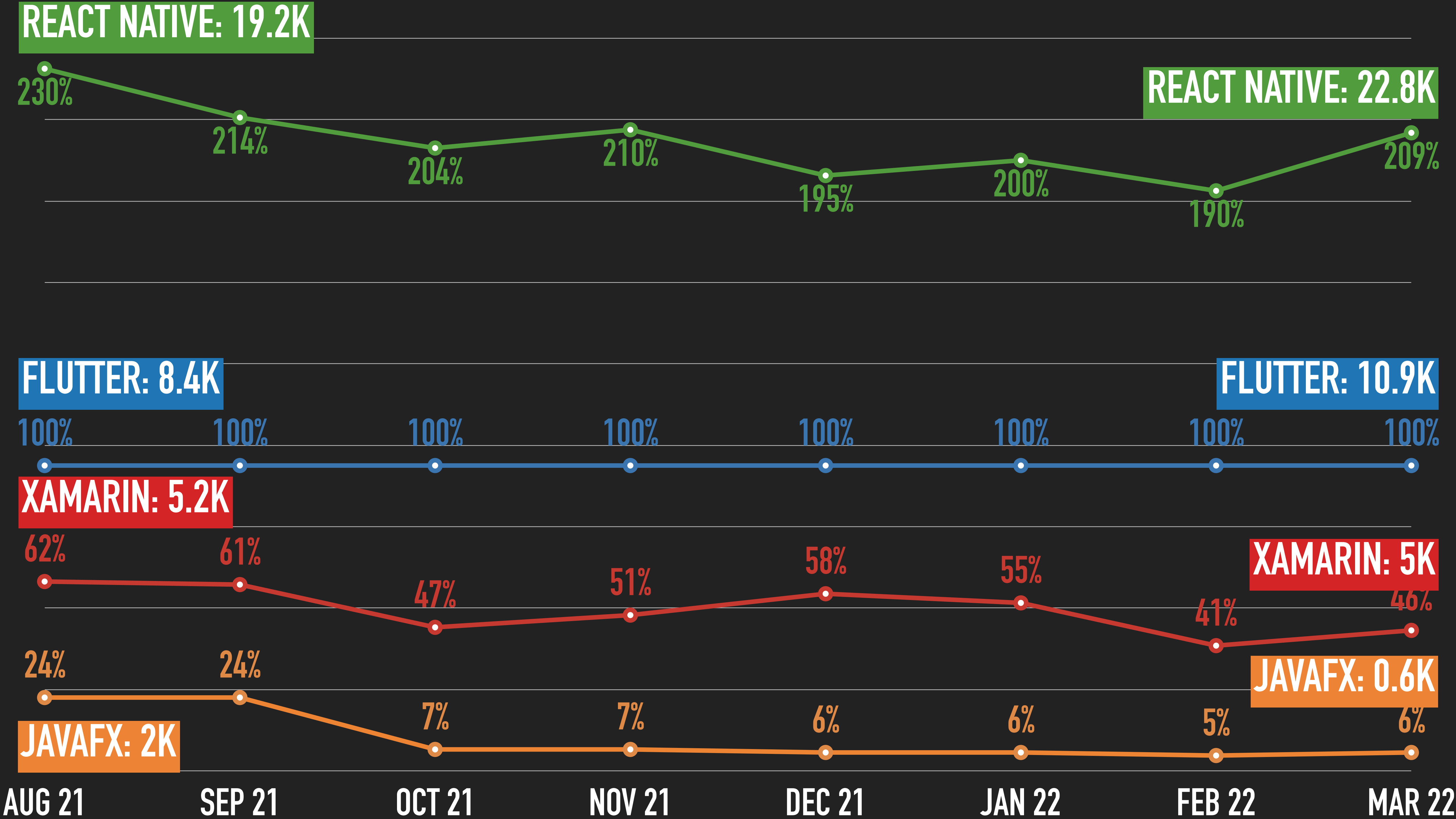
MAR 21 APR 21 MAY 21 AUG 21 SEP 21 OCT 21 NOV 21 DEC 21 JAN 22 FEB 22 MAR 22

**TECHNOLOGY DEMAND**

**PROXY: MENTIONED IN JOB**

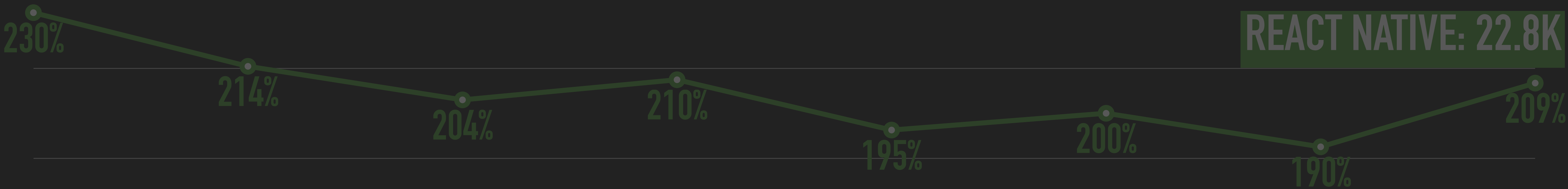
**ADS @ INDEED**

**(62 COUNTRIES)**



REACT NATIVE: 19.2K

REACT NATIVE: 22.8K



REACT NATIVE: +3.6K

FLUTTER: 8.4K

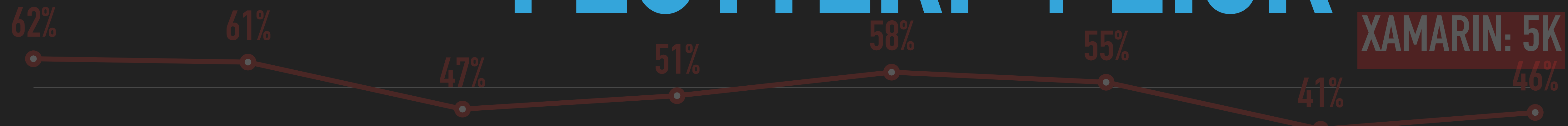
FLUTTER: 10.9K



FLUTTER: +2.5K

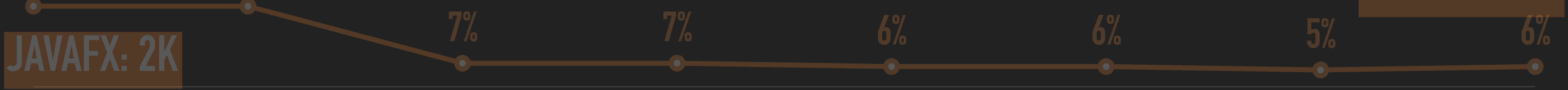
XAMARIN: 5.2K

XAMARIN: 5K



JAVAFX: 2K

JAVAFX: 0.6K



AUG 21    SEP 21    OCT 21    NOV 21    DEC 21    JAN 22    FEB 22    MAR 22

GOOGLE, STACK OVERFLOW, DEVELOPER SUPPLY:  
FLUTTER WINS, PULLING AWAY FROM REACT NATIVE

TECHNOLOGY DEMAND: REACT NATIVE WINS,  
HOLDING STEADY AGAINST FLUTTER

POPULARITY

**NEWSLETTER: ALSO**  
**JVM LANGUAGES &**  
**FRAMEWORKS, DATABASES,**  
**WEB FRAMEWORKS**

# SECTION SUMMARY

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

**NATIVE:** MOBILE, DECLARATIVE, FLUTTER  
(DEVELOPERS), REACT NATIVE (EMPLOYERS),  
XAMARIN



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

~~WHY CROSS PLATFORM~~

~~HOW CROSS PLATFORM~~

HOW FLUTTER WORKS

MY FLUTTER EXPERIENCES

# HOW FLUTTER WORKS

**WILL GOOGLE  
KILL FLUTTER?**



# Killed by Google

Search

All (264)



Follow @killedbygoogle on Twitter.



March 2023

## Google Currents (2019)

Running out of juice in 12 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

Dead as a doorknob in 9 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

Expiring in 9 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.



June 2022

## Google Chrome Apps

Off to the glue factory in 3 months, Google Chrome Apps were hosted or packaged web applications that ran on the Google Chrome browser. It will be over 11 years old.



May 2022

## G Suite (Legacy Free Edition)

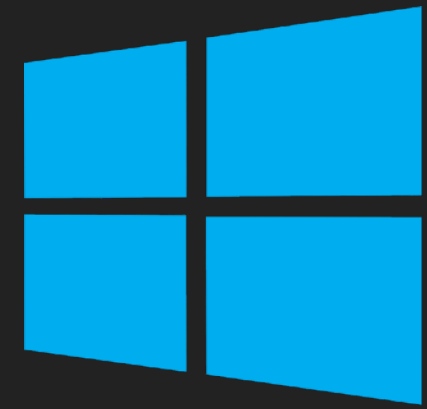
Expiring in 29 days, G Suite (Legacy Free Edition) was a free tier offering some of the services included in Google's productivity suite. It will be over 15 years old.

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

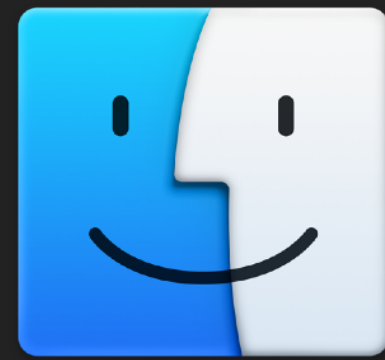
**WE DON'T KNOW!**

**WHICH PLATFORM**  
**STABLE SINCE WHEN?**

# PC



MAR  
2022



2022?



# WEB



MAR  
2021

# MOBILE



DEC  
2018





**PROGRAMMING  
LANGUAGE: 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** & **ASYNC/AWAIT**

**1 MAIN** THREAD, CREATE THREADS (ISOLATES)

**DART**

GOOGLE TUNES  
DART FOR FLUTTER

```
return Column(  
  children: [  
    Text("First name: $firstName"),  
    Text("Last name: $lastName"),  
    if (isAdmin) Text("Password: $password"),  
  ],  
);
```

# SYNTACTIC SUGAR



```
return Column(  
  children: [  
    Text("First name: $firstName"),  
    Text("Last name: $lastName"),  
    if (isAdmin) Text("Password: $password"),  
  ],  
);
```

**INSTEAD OF SEPARATE ARRAY  
WITH IF STATEMENT**

# SYNTACTIC SUGAR

**LIBRARIES: PLUGINS**

**PLUGINS** – FLUTTER: 16K, DART: 14K

**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),  
    )  
  ],  
)
```

**WIDGETS ARE  
CLASSES**

**CONFIGURE BUILT-IN WIDGETS, CREATE YOUR OWN**

**EMULATED WITH GRAPHIC ENGINE SKIA (CHROME, FIREFOX)**

**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

**3<sup>RD</sup>-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**

**SWITCH** LOOK & FEEL  
BECAUSE "FLUTTER  
**PAINTS** PIXELS"







# SAMPLE APP ON GITHUB



CREATED MY **OWN** WIDGETS

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

**HOW DOES IT WORK?**

GLOBAL **STATE** MANAGEMENT: "PROVIDER"

**WIDGET SET:** MATERIAL/NATIVE/CUSTOM

**ROUTING:** SIMPLE ("NAVIGATOR")/COMPLEX ("ROUTER")

**LAYOUT:** NO DEFAULT – 3<sup>RD</sup> PARTY PLUGIN

ARCHITECTURAL **CHOICES**

**NATIVE INTEGRATION**

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**: **C/C++**

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

**PLATFORM TOOL CHAINS**

**CODE, BUILD & DEPLOY**



**"EXCELLENT DEV  
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

**PLATFORM CHECK**

**FLUTTER VS. WORLD**

- ⊕ **NATIVE LOOK & FEEL**
- ⊕ **ACCESS TO NATIVE OS LIBRARIES**
- ⊕ **FAST BUILD & DEPLOY**

**MOBILE:** 👍 👍

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

**WEB:** 👎



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

DESKTOP: 👎

**JAVASCRIPT**

**SLOWER**

**NATIVE UI ELEMENTS**

**SEPARATE PROJECTS**

**(WINDOWS & MACOS)**

**DART**

**FASTER**

**PAINTS PIXEL**

**MONOREPO**

**WINDOWS, MAC, LINUX**

**REACT NATIVE VS. FLUTTER**

NO NEED TO LEARN **WEB** STACK

DART = SIMPLER **JAVA**

UI AS **CODE** WITH CLASSES

USE 2 OF THE 3 TOP JAVA **IDES**

**FLUTTER FITS JAVA**

# SECTION SUMMARY

**DART**

**NATIVE INTEGRATION**

**PLUGINS**

**RUNS NATIVELY**

**WIDGETS**

**CODE, BUILD & DEPLOY**

**WIDGET SETS**

**PLATFORM CHECK**

**THAT'S HOW  
FLUTTER WORKS**

~~WHY CROSS PLATFORM~~

~~HOW CROSS PLATFORM~~

~~HOW FLUTTER WORKS~~

MY FLUTTER EXPERIENCES

# MY FLUTTER EXPERIENCES



**B2B SAAS** FOR COMPANIES WITH CAT-SITTERS

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

I WROTE THE CODE

**MY START-UP**



CAT-  
SITTER

**FLUTTER**

IOS & ANDROID

FRONT-  
END

**ANGULAR**

BROWSER

MANA-  
GER

**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**

**WORKS** AS DESIGNED: "2 APPS FOR PRICE OF 1.2"

**MINOR** QUIBBLES (E.G. SIMULATOR DOESN'T STOP)

**APPLE** TROUBLE (E.G., NO PASTE INTO SIMULATOR)

FLUTTER **LISTENS** (BUG FIXES, DEV SURVEYS)

**FLUTTER ON MOBILE** 👍

WORKS **WELL** ON IOS & ANDROID

**IOS** QUIBBLES (NO LIST TILE)

FLUTTER TEAM: "**CUSTOMIZE** MATERIAL"

**FLUTTER PAINTS PIXELS**

GOOGLE'S "BACK-END AS A **SERVICE**" FOR  
MOBILE, WEB, SERVER

MOSTLY **FREE** SERVICES, SOME **PAID**

**1 SERVICE** INSTEAD OF 2 (IOS + ANDROID):  
CRASH LOGGING, TEST VERSIONS, ...

**FIREBASE** 👍

**MOBILE POWER**





**TikTok**

**EDIT VIDEOS  
ON PHONES!**

**THINK MORE**

**"DESKTOP CLIENT" . . .**

validators.ui\*

Filter

Layouts

- Vertical Layout
- Horizontal Layout
- Grid Layout
- Form Layout

Spacers

- Horizontal Spacer
- Vertical Spacer

Buttons

- Push Button
- Tool Button
- Radio Button
- Check Box
- Comman...Button
- Button Box

Item Vie...I-Based)

- List View
- Tree View
- Table View
- Column View

Item Wi...-Based)

- List Widget
- Tree Widget
- Table Widget

Containers

QIntValidator

Min: 0

Max: 1000

editingFinished()

QDoubleValidator

Min: 0.00

Max: 1000.00

Format: Standard

Decimals: 2

editingFinished()

Quit

Sender	Signal	Receiver	Slot
pushButton	clicked()	Valid...sForm	close()

Action Editor    Signals & Slots Editor

Object

Object	Class
ValidatorsForm	QWidget
<noname>	QHBoxLayout
<noname>	Spacer
localeSelector	Local...ector
<noname>	QHBoxLayout
<noname>	Spacer
pushButton	QPushButton
<noname>	Spacer
groupBox	QGroupBox
<noname>	QHBoxLayout
<noname>	QGridLayout
label	QLabel
label 2	QLabel

Filter

ValidatorsForm : QWidget

Property	Value
QObject	
<b>objectName</b>	ValidatorsForm
QWidget	
enabled	<input checked="" type="checkbox"/>
<b>geometry</b>	[(0, 0), 526 x 409]
X	0
Y	0
Width	526
Height	409
<b>sizePolicy</b>	[Preferred, Preferred, ...]
Horizontal Policy	Preferred

Type to locate (Ctrl...)

1 Issues    2 Search R...    3 Applicatio...    4 Compile ...    5 QML/JS C...    6 To-Do Ent...    7 Version C...    8 General M...

...AND LESS

"SIMPLE WEB BROWSER"

# Sign up for Last.fm

Desired username:



Try another name

(max 15 characters, no spaces)

Email:



The occasional newsletter to keep me up-to-date.

Password:



Confirm password:



IOS & ANDROID **POWERFUL**

STORE DATA **LOCALLY** – HELPS OFFLINE

LOAD & SAVE DATA IN **BACKGROUND**

**WEB:** LIMITED & HARDER

**MOBILE POWER**

**ONE** SOURCE OF  
UI TRUTH



**AVOID "UI OUT OF SYNC"**

**GERMANY BIGGEST  
SPORTS APP "KICKER"**



0 : 0



Bayern


— 1. Platz

1:0 - OR 0:0?


tipico

Info unter [www.spielerambulanz.de](http://www.spielerambulanz.de).

Coman 16' 1 : 0

16'  Tor für Bayern



Kingsley  
Coman 

Rechtsschuss

1 : 0

**MACOS APP STORE**

# Apple Account

Balance: \$113.38

## Account Access

... are signed  
... music activity and

**\$113 - OR \$38?**

Karsten Silz  
\$38.38



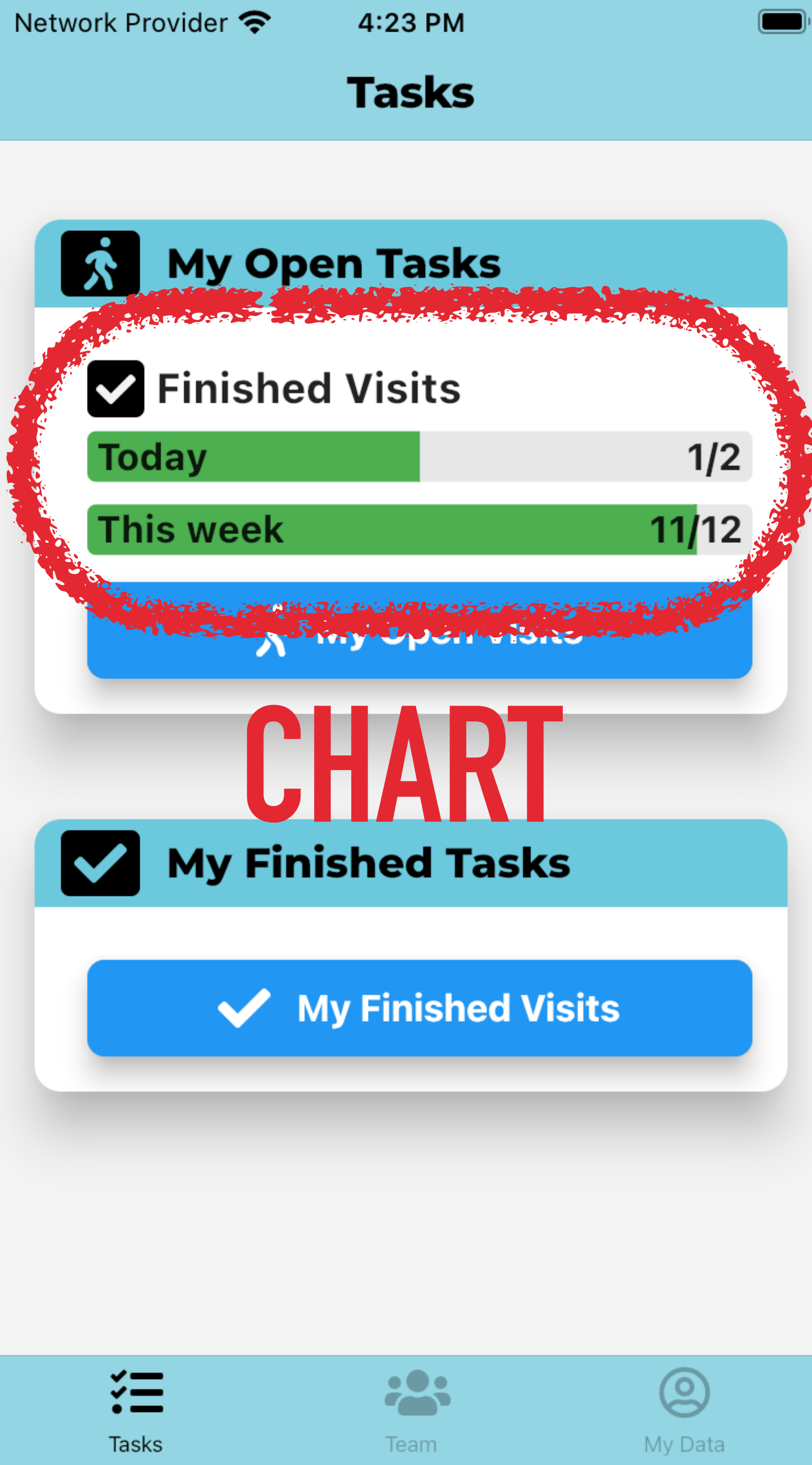
**HOW TO AVOID  
"UI OUT OF SYNC"?**

ONE **GLOBAL** DATA STORE

DATA STORE CHANGES => **ENTIRE** UI UPDATES

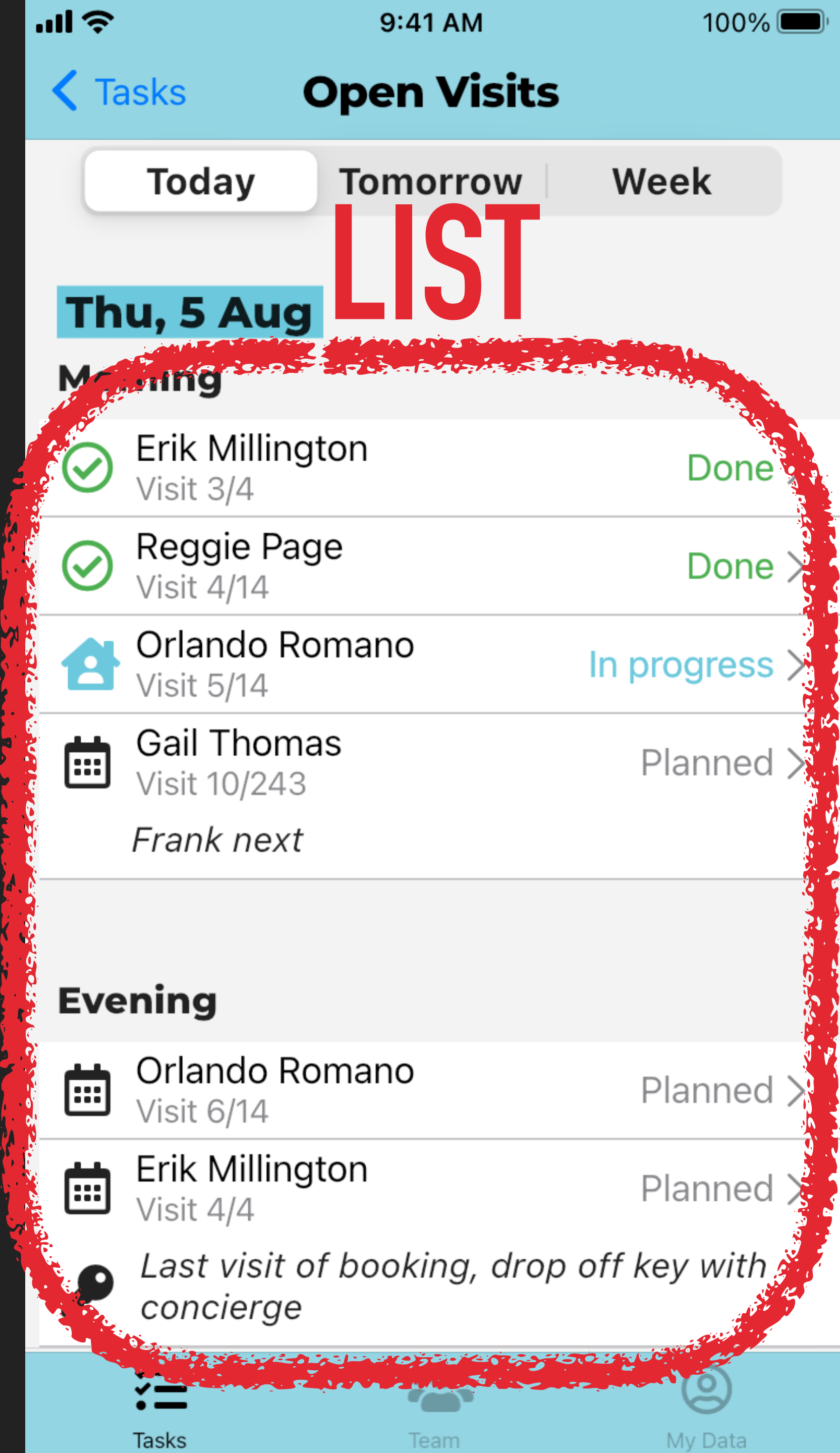
NO "**STATUS DUPLICATES**" IN DATA STORE

**ONE SOURCE OF UI TRUTH**



INITIALLY: TWO  
DIFFERENT OBJECTS  
=> OUT OF SYNC

NOW: CHART =  
REAL-TIME  
CALCULATION  
OVER LIST





**"STATUS DUPLICATES"**

**=> REAL-TIME**

**CALCULATION**

**MOBILE POWER**

AVOID UI SYNC ISSUES: ONE GLOBAL DATA STORE

DATA STORE CHANGES => ENTIRE UI UPDATES

NO "STATUS DUPLICATES" IN DATA STORE

WORKS OFFLINE – BUT DUPLICATES SERVER CODE

ONE SOURCE OF UI TRUTH

**BE CONSISTENT**



What's here?

Version 2022.1.10



Karsten K Silz

Home

# Your Home in Good Hands

Please look at your content below. Or access your account by clicking on your name in the top right.

Visits **Customers** Team Sys Admin

**Customers**

Active: 407

Manage Customers

Create

**Veterinaries**

Total: 42

View Veterinaries

Network Provider

4:23 PM

## Tasks

**My Open Tasks**

**Finished Visits**

Today 1/2

This week 11/12

My Open Visits

**My Finished Tasks**

My Finished Visits



Tasks



Team



My Data

**RESPECT** PLATFORM PARADIGMS

SHARE **COLORS** (BRAND & BOOTSTRAP)

SHARE  **FONTS** (GOOGLE FONTS)

SHARE **ICONS** (FONTAWESOME)

**BE CONSISTENT**

**REUSE** CODE: USE FLUTTER PLUGINS

**DRY:** WRITE YOUR OWN COMPONENTS

**STRUCTURE:** VERTICAL & HORIZONTAL LAYERS

**BACK TO BASICS**

# SECTION SUMMARY



**BUSINESS CASE**

**MOBILE POWER**

**FLUTTER** 👍

**1 SOURCE OF UI TRUTH**

**FLUTTER PAINTS PIXELS**

**BE CONSISTENT**

**FIREBASE** 👍

**BACK TO BASICS**

# MY FLUTTER EXPERIENCES

~~WHY CROSS PLATFORM~~

~~HOW CROSS PLATFORM~~

~~HOW FLUTTER WORKS~~

~~MY FLUTTER EXPERIENCES~~

# SUMMARY

**CROSS-PLATFORM**

**FRONT-ENDS:**

**CHEAPER & GOOD ENOUGH**

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

**NATIVE:** MOBILE, DECLARATIVE – FLUTTER  
(DEVELOPERS), REACT NATIVE (EMPLOYERS),  
XAMARIN

**DART**

**NATIVE INTEGRATION**

**PLUGINS**

**RUNS NATIVELY**

**WIDGETS**

**CODE, BUILD & DEPLOY**

**WIDGET SETS**

**PLATFORM CHECK**

**BUSINESS CASE**

**MOBILE POWER**

**FLUTTER** 👍

**1 SOURCE OF UI TRUTH**

**FLUTTER PAINTS PIXELS**

**BE CONSISTENT**

**FIREBASE** 👍

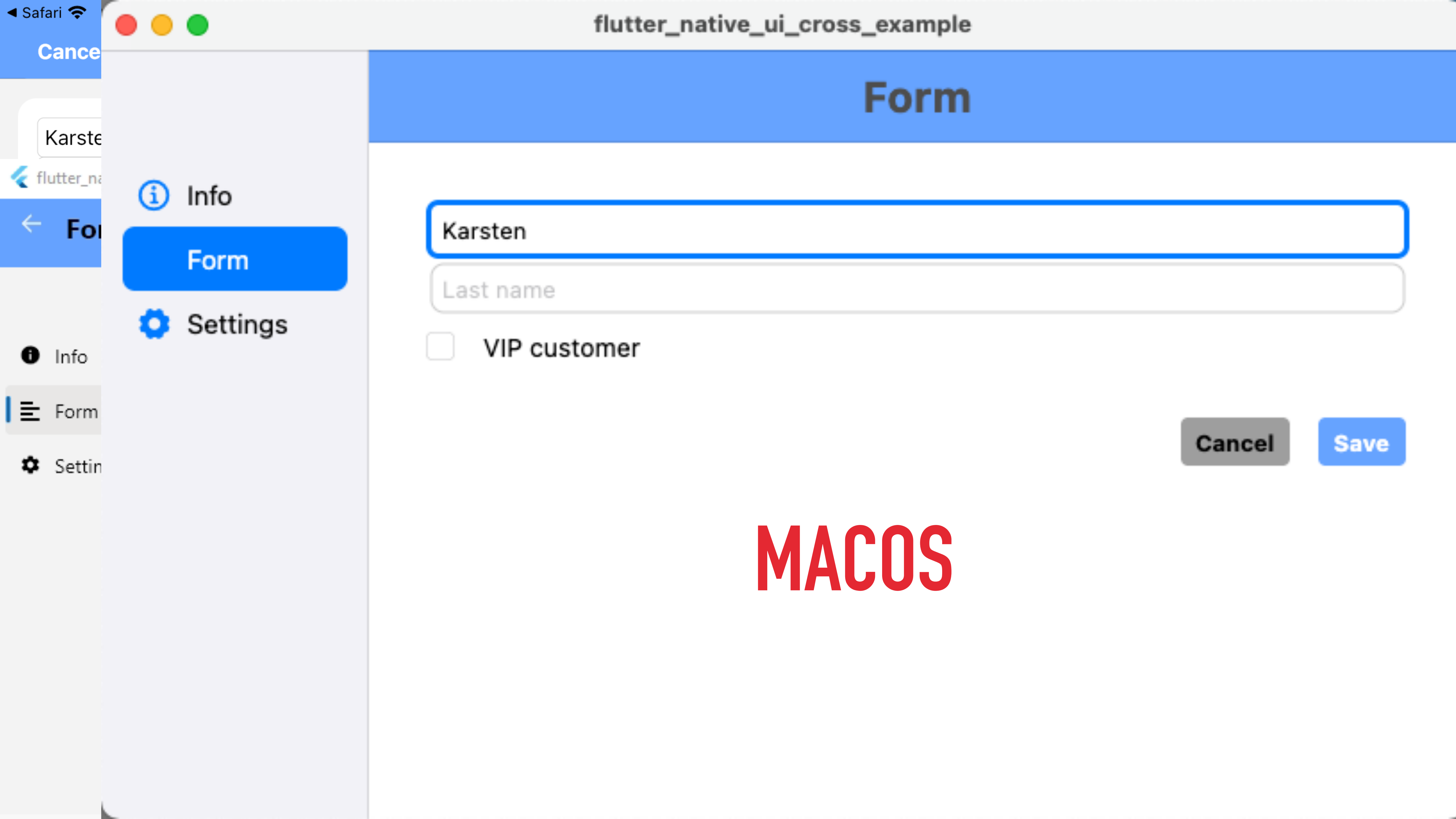
**BACK TO BASICS**



# BACK TO THE BIG QUESTION

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

**YES, WE CAN**



# Form

Karsten

Last name

VIP customer

Cancel

Save

MACOS

Cancel

Karste

flutter\_na

Form

Info

Form

Settings

Info

Form

Settin

**BUT WE GENERALLY  
SHOULDN'T**

**WEB:** ONLY MATERIAL UI, NO NATIVE  
LIBRARIES, FEW PLUGINS

**DESKTOP:** WHY NOT WEB, ONLY WINDOWS  
STABLE, WIDGET SETS MAINTAINED

**FLUTTER VS. WORLD**

**FLUTTER ON MOBILE:**



**"2 APPS FOR THE PRICE OF 1.2"**

**ALL NATIVE CAPABILITIES**

**FAST BUILD & DEPLOY**

**FLUTTER ON MOBILE**





*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/QCN](https://bpf.li/qcn)**