



BETTER PROJECTS  
**FASTER**

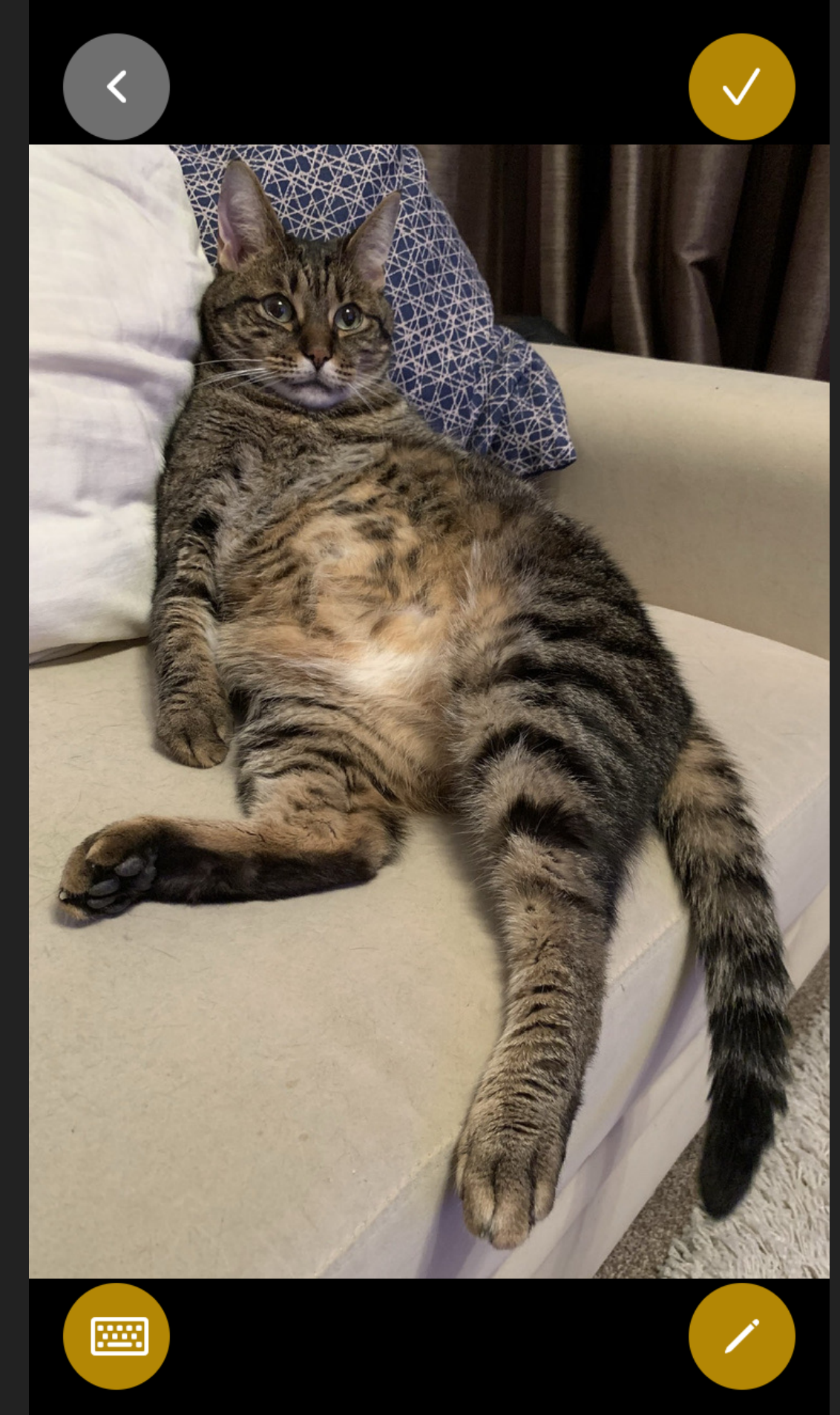
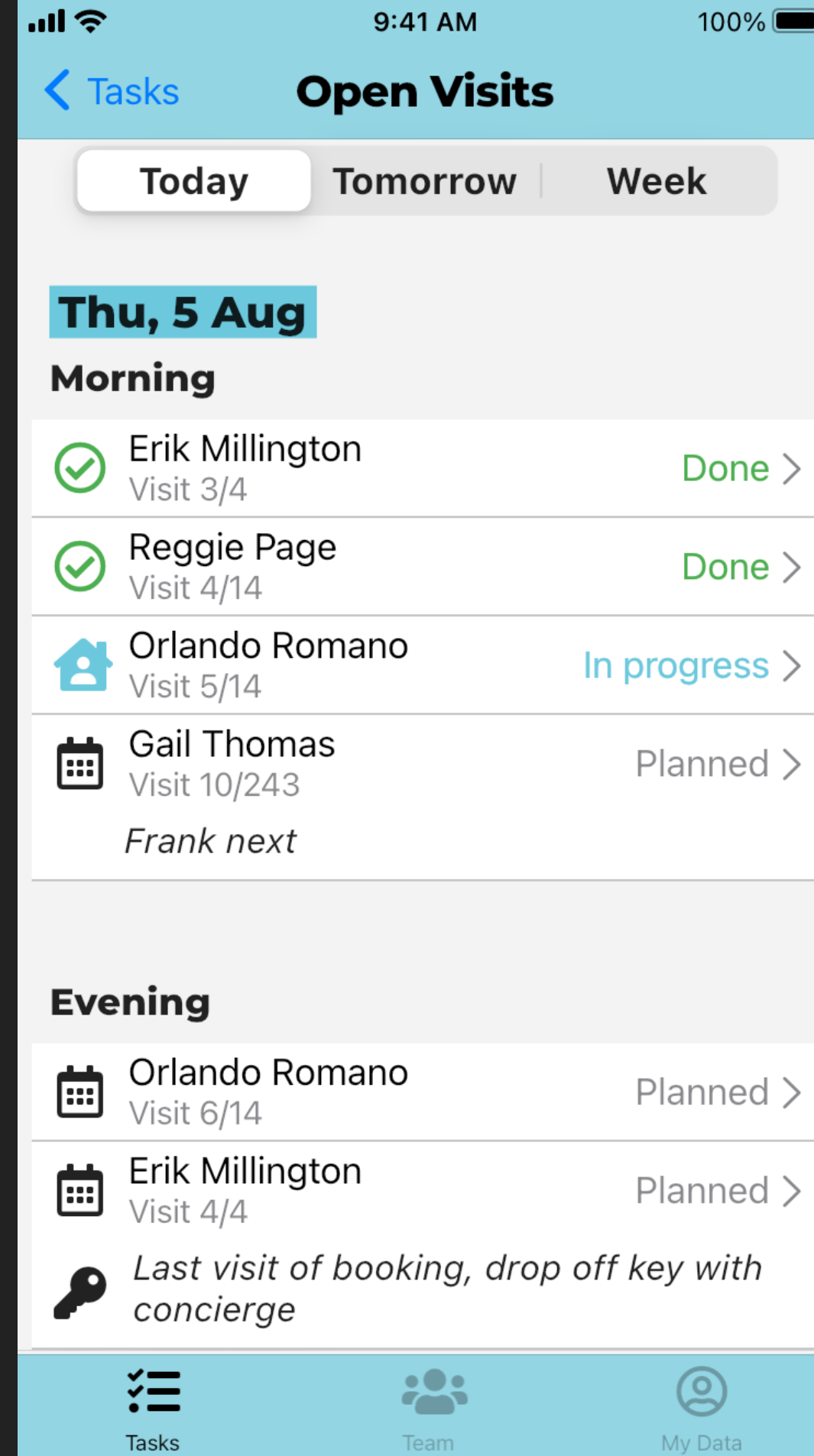


Google Developer Groups

KARSTEN SILZ

30 MARCH 2022

# WHAT I LEARNED FROM BUILDING A FLUTTER APP FOR CAT-SITTERS





**WRITE BETTER  
MOBILE APPS!**



**WHAT IS FLUTTER?**

**WHAT I LEARNED ABOUT FLUTTER**



**WHY LISTEN?**





**CONFERENCE TALKS UK & GERMANY**

**INFOQ JAVA EDITOR, PC QCON LONDON**

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

**DON'T SELL BOOKS/TRAINING**



**YOU DECIDE!**





**SLIDES &  
MORE**

**BPF.LI/MIK**



**WHAT IS FLUTTER?**

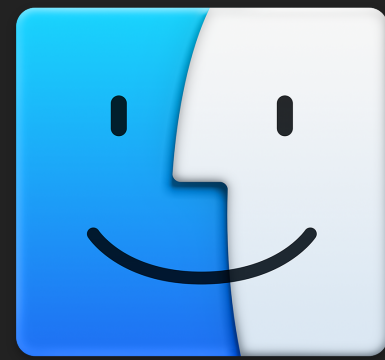
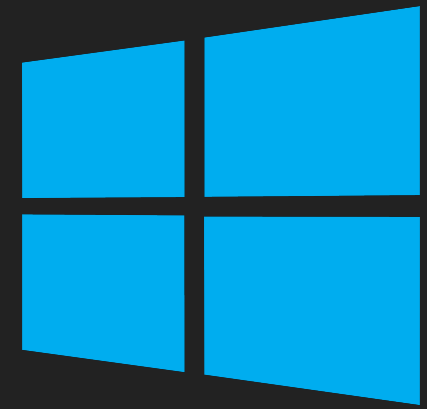
**WHAT I LEARNED ABOUT FLUTTER**



**WHY DO WE NEED FLUTTER?**



# PC



.NET  
C#

SWIFTUI  
SWIFT

GTK/KDE  
C++

# MOBILE

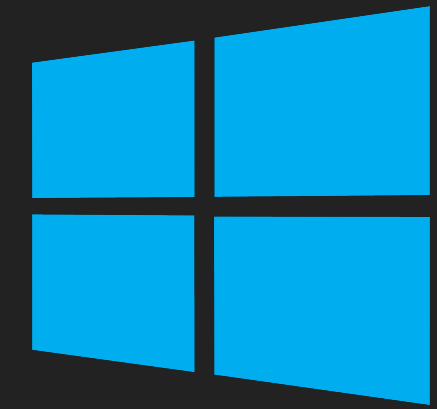


SWIFTUI  
SWIFT

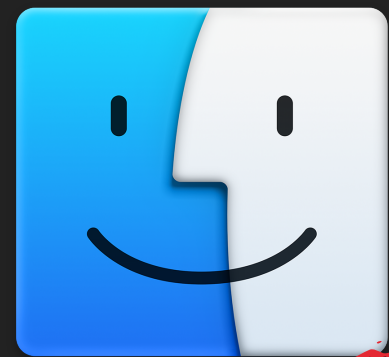
JETPACK  
COMPOSE  
KOTLIN



PC



.NET  
C#



TOO EXPENSIVE!

C++

MOBILE



SWIFTUI  
SWIFT

JETPACK  
COMPOSE  
KOTLIN



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

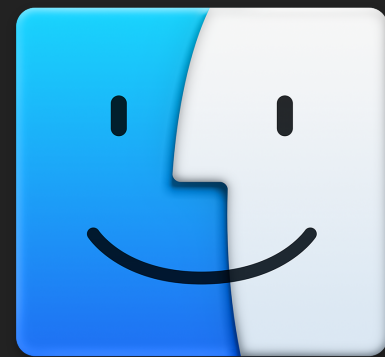
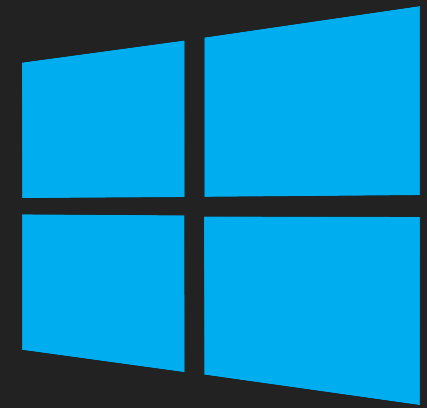


**CROSS-PLATFORM  
FRONT-ENDS:**

**CHEAPER & GOOD ENOUGH**



# PC



# MOBIL



CROSS-PLATFORM:  
**1** FRAMEWORK, **1** LANGUAGE



**BIGGEST** SOFTWARE PLATFORM EVER

**MANY** & CHEAP DEVELOPERS

**REACT**, ANGULAR, VUE

HARD TO **LEARN**

**CROSS-PLATFORM: WEB**



FOR JAVA/.NET **BACK-END** DEVELOPERS

**FLUTTER**, XAMARIN, REACT NATIVE (SOME WEB)

**NATIVE** LOOK & FEEL ON MOBILE & DESKTOP

CROSS-PLATFORM: **NO** WEB



# 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,  
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localhost:57317/#/

Flutter Demo Home Page

Pushed 0 times





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  ],  
)
```

UI AS CODE



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    )  
  ],  
)
```

## STATUS & EVENTS



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

**FRAMEWORK  
UPDATES UI**



**UI AS CODE**

**STATUS & EVENTS**

**FRAMEWORK UPDATES UI**

**DECLARATIVE PROGRAMMING**

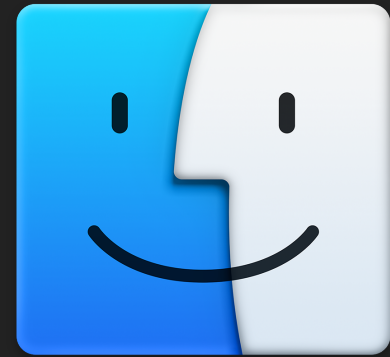


**OTHER DECLARATIVE  
FRAMEWORKS?**





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



**SWIFTUI (2019)**



**REACT (2013)**



**SWIFTUI (2019)**



**JETPACK COMPOSE (JULY 2021)**



**DECLARATIVE =**  
**STATE OF THE ART**



# WHAT IS FLUTTER?



GOOGLE'S **CROSS-PLATFORM**, OPEN-SOURCE UI TOOLKIT

**MOBILE** (DEC 2018), **WEB** (MAR 2021), **DESKTOP**  
(WINDOWS: MAR 2022), EMBEDDED

**DART:** "SIMPLIFIED JAVA FOR UI" WITH NULL SAFETY AND  
ASYNC/AWAIT

**FLUTTER**



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

# THIS IS JAVA



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

# THIS IS DART



LIBRARIES: **PLUGINS**, MOSTLY OPEN-SOURCE

**NATIVE** LOOK & FEEL (FLUTTER + THIRD-PARTY)

"**EXCELLENT** DEVELOPER EXPERIENCE"

MOST **POPULAR** WITH DEVS, GAINING WITH EMPLOYERS

# FLUTTER



**NATIVE UI WITH 1  
CODEBASE & FLUTTER?**



Karsten

Last name

VIP customer

IOS



Info



Form



Settings



Cancel

x

Form

SAVE

First name

Karsten

Last name

VIP customer



ANDROID



Info



Form

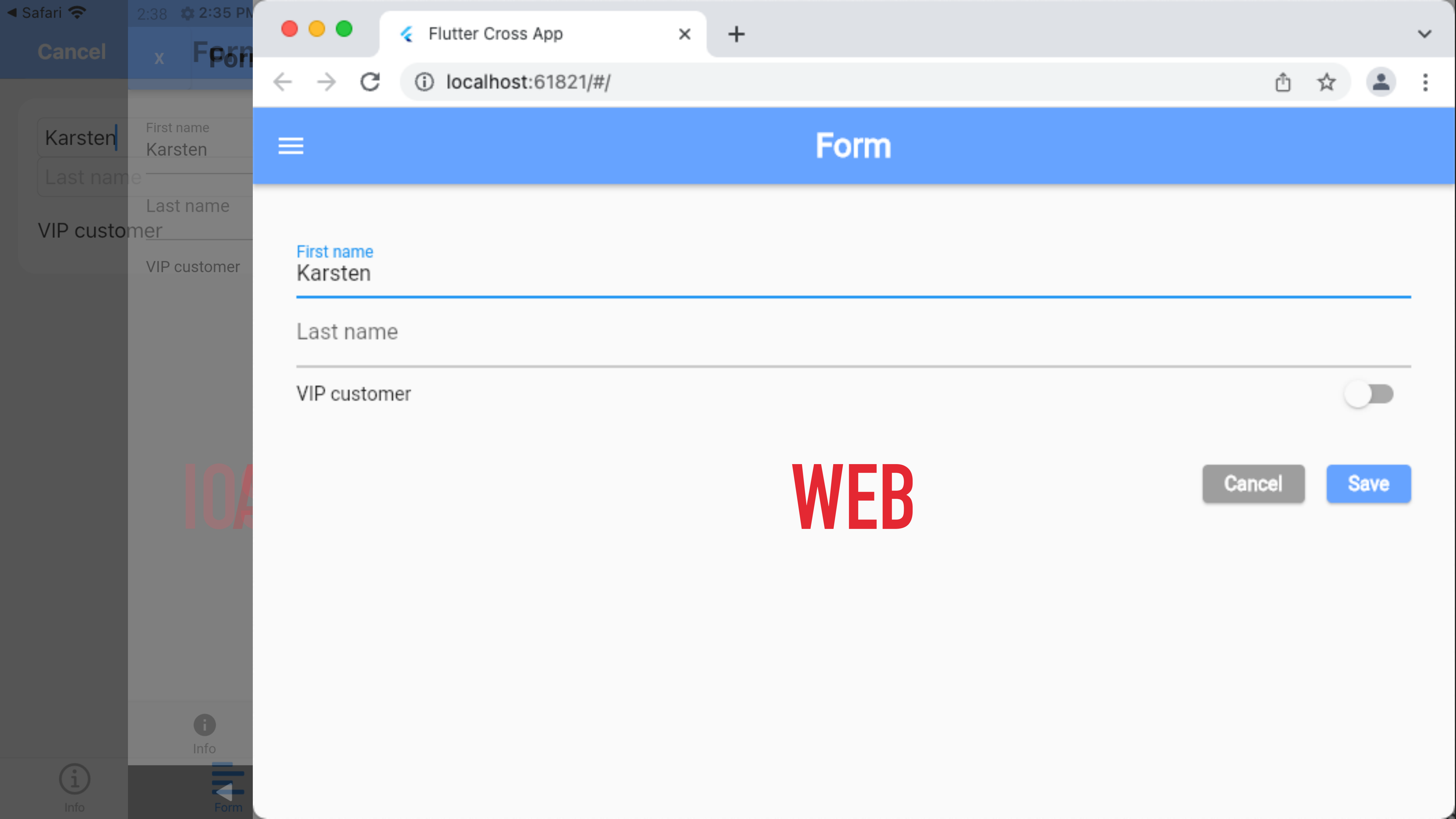


Settings

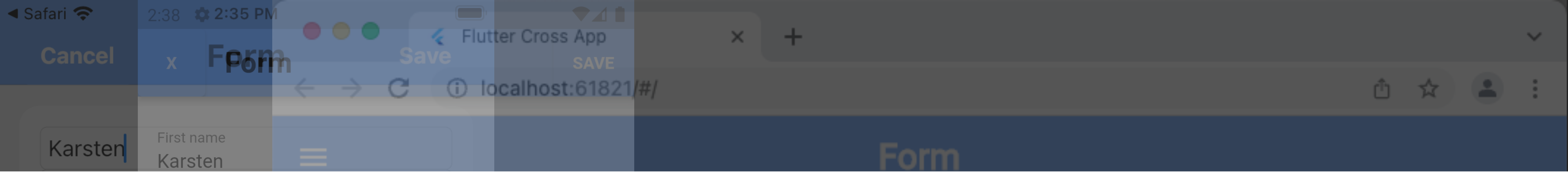


Info









flutter\_native\_ui\_cross\_example

## Form

- Info
- Form**
- Settings

First name

Karsten

Last name

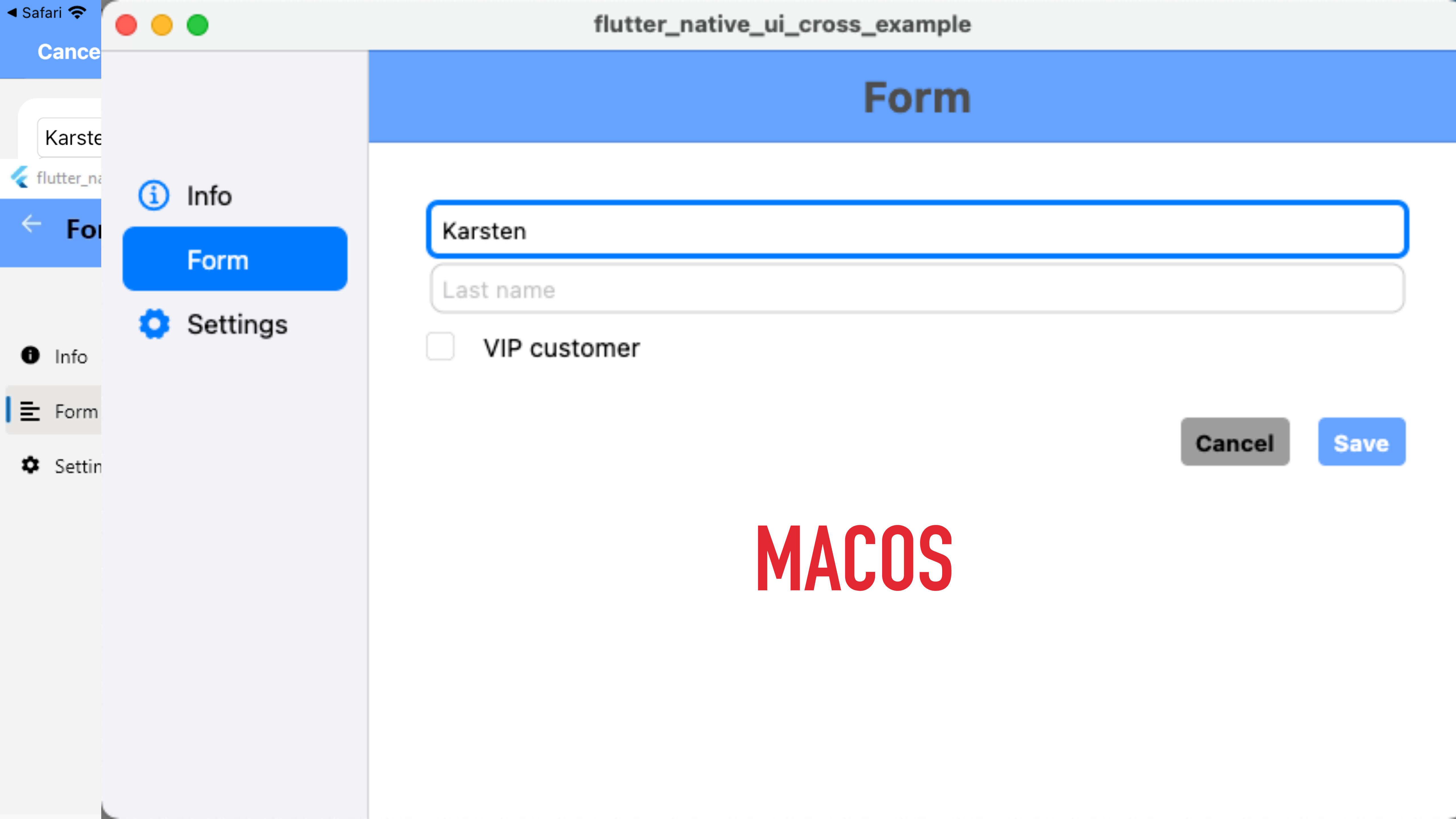
Doe

☐ VIP customer

Save Cancel

WINDOWS





MACOS



**MY SAMPLE APP  
IS ON GITHUB**



# SECTION SUMMARY



**CROSS-PLATFORM**  
**FRONT-ENDS: CHEAPER**  
**& GOOD ENOUGH**

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

**NO WEB: BACK-END**  
**DEVS, NATIVE UI –**  
**FLUTTER, XAMARIN,**  
**REACT NATIVE**

**FLUTTER: DECLARATIVE,**  
**DART, PLUGINS, NATIVE**  
**UI, DEV EXPERIENCE**



# WHAT IS FLUTTER?



~~WHAT IS FLUTTER?~~

WHAT I LEARNED ABOUT FLUTTER



# WHAT I LEARNED ABOUT FLUTTER



**MY PROJECT**





**YOUR HOME IN  
GOOD HANDS**



**SAAS** FOR COMPANIES WITH CAT-SITTERS

WORKFORCE AUTOMATION: SAVE **TIME** & FEWER  
**ISSUES** IN "WHO DOES WHAT BY WHEN & HOW?"

I WROTE THE CODE

**MY START-UP**



CAT-  
SITTER

FRONT-  
END

MANA-  
GER

FLUTTER

IOS & ANDROID

ANGULAR

BROWSER

AUTHENTICATION

FILES

FIREBASE

JAVA & SPRING

DB

BACK-  
END



"2 APPS FOR THE PRICE OF 1.25"

ACCESS TO NATIVE LIBRARIES

NATIVE LOOK & FEEL

BUILD & DEPLOY FASTER THAN NATIVE

FLUTTER: MOBILE 👍



**ONLY** MATERIAL UI VS. HUNDREDS OF WEB OPTIONS

**NO** ACCESS TO NATIVE LIBRARIES

**FEW** LIBRARIES VS.  $>$  1 MILLION WEB LIBRARIES

**FLUTTER: WEB** 🙄



**WEB IS GOOD ENOUGH!**

**WINDOWS & MACOS UI: INCOMPLETE, SUSTAINABLE?**

**ACCESS TO NATIVE LIBRARIES**

**WINDOWS ONLY JUST STABLE, MAC & LINUX NOT YET**

**FLUTTER: DESKTOP** 🙄



GOOGLE'S "BACK-END AS A SERVICE"

MANY FREE SERVICES, SOME PAID

GOOD FLUTTER INTEGRATION

FIREBASE 👍



**MOBILE POWER**





**TikTok**



**EDIT VIDEOS**  
**ON PHONES!**



IOS & ANDROID POWERFUL

STORE DATA LOCALLY – HELPS OFFLINE

LOAD & SAVE DATA IN BACKGROUND

WEB: LIMITED & HARDER

MOBILE POWER



**AVOID "UI OUT OF SYNC"**



# GERMAN IPHONE SPORTS APP "KICKER"



Bundesliga, 27. Spieltag



Bayern

— 1. Platz



Union

^ 7. Platz



-W-

IHRE WETTE IN SICHEREN HÄNDEN.



Jetzt 100 € Bonus sichern!

tipico

18+. Glücksspiel kann süchtig machen. Hilfe unter [www.spielerambulanz.de](http://www.spielerambulanz.de).

Coman 16'



16' ⚽ Tor für Bayern



Kingsley  
Coman

Rechtsschuss





Bundesliga, 27. Spieltag



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

Apple Music 2 apps are signed  
music activity and

Manage

Karsten Silz  
\$38.38





Apple Account

Balance: \$113.38

Account Access

\$113 - OR \$38?

are signed  
music activity and

Karsten Silz  
\$38.38





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



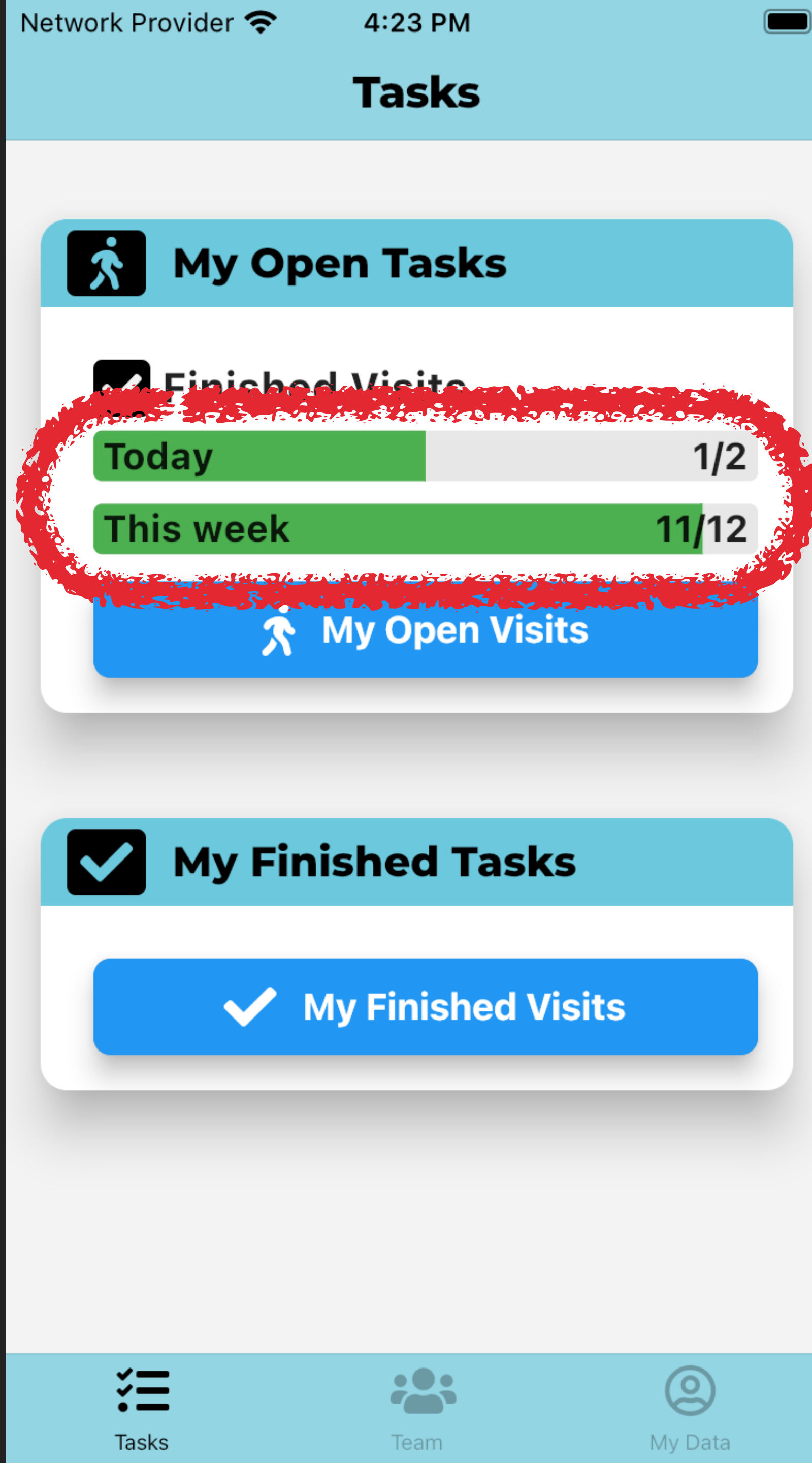
ONE GLOBAL DATA STORE

DATA STORE CHANGES => ENTIRE UI UPDATES

NO "STATUS DUPLICATES" IN DATA STORE

ONE SOURCE OF UI TRUTH





REAL-TIME  
CALCULATION  
WITH ALL VISITS



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



**RESPECT PARADIGMS –  
BUT SHARE**





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



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

## 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**



**THAT'S WHAT I LEARNED  
ABOUT FLUTTER**



~~WHAT IS FLUTTER?~~

~~WHAT I LEARNED ABOUT FLUTTER~~



# SUMMARY



**CROSS-PLATFORM**  
**FRONT-ENDS: CHEAPER**  
**& GOOD ENOUGH**

**WEB: BIGGEST, MANY**  
**DEVS, HARD TO LEARN**  
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**FLUTTER: DECLARATIVE,**  
**DART, PLUGINS, NATIVE**  
**UI, DEV EXPERIENCE**



FLUTTER: MOBILE 👍

ONE SOURCE OF UI TRUTH

FLUTTER: OTHER 🙄

BE CONSISTENT

FIREBASE 👍

BACK TO BASICS

MOBILE POWER



**WRITE BETTER  
MOBILE APPS!**





**SLIDES & VIDEOS**

**EXTRA INFORMATION**

**GET STARTED WITH FLUTTER!**

**NATIVE UI SAMPLE PROJECT**

**FEEDBACK**

**BPF.LI/MIK**