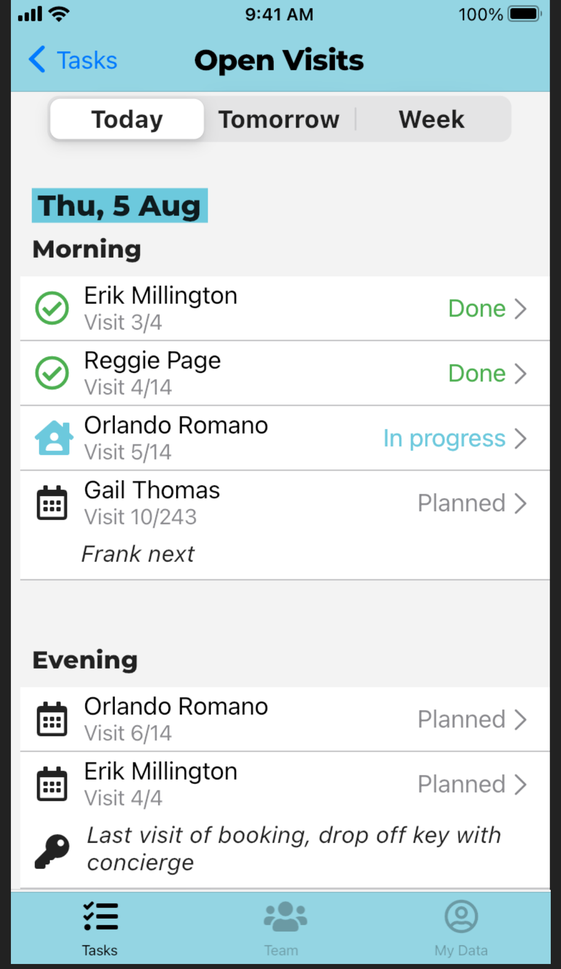
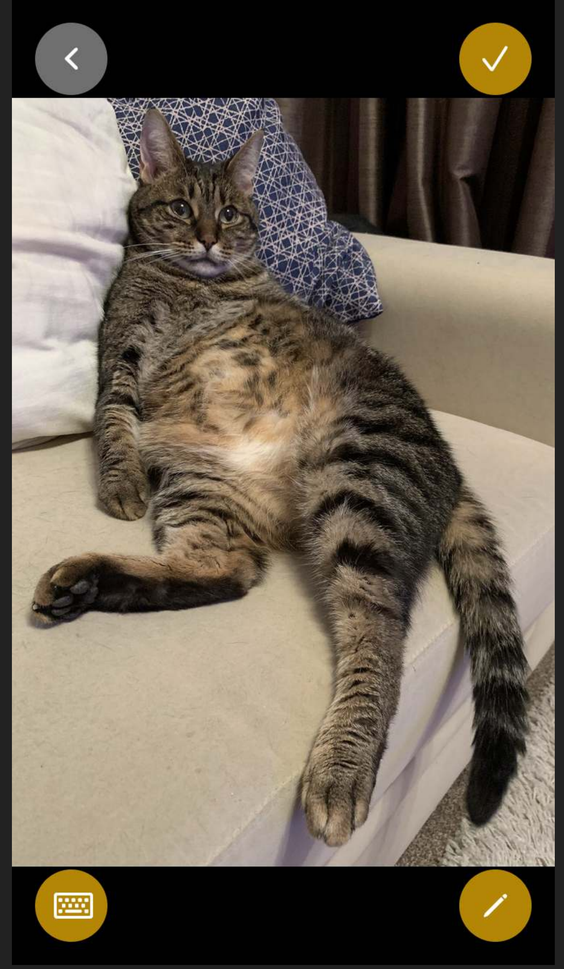
BETTER PROJECTS
FASTER

Google Developer Groups





KARSTEN SILZ

30 MARCH 2022

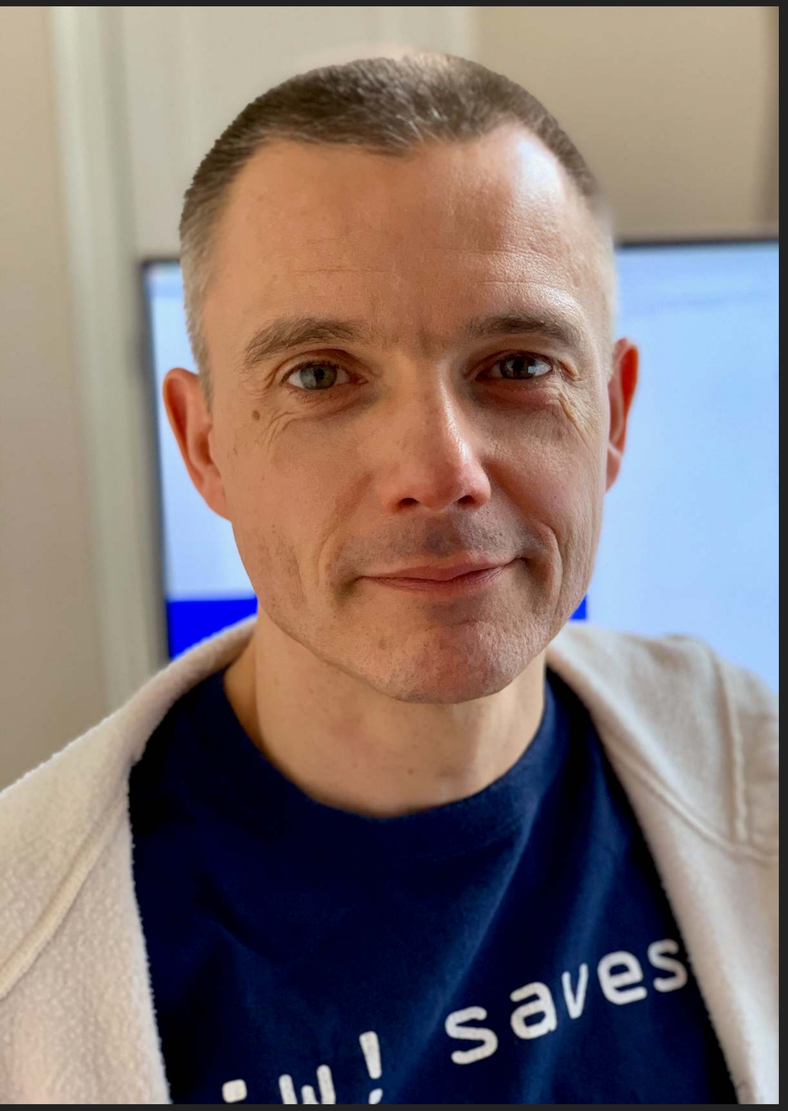
WHAT I LEARNED FROM BUILDING A FLUTTER APP FOR CAT-SITTERS

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

MOBILE











.NET
C#

S
S++

SWIFTUI
SWIFT

JETPACK
COMPOSE
KOTLIN

TOO EXPENSIVE!

PLATTFORM 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

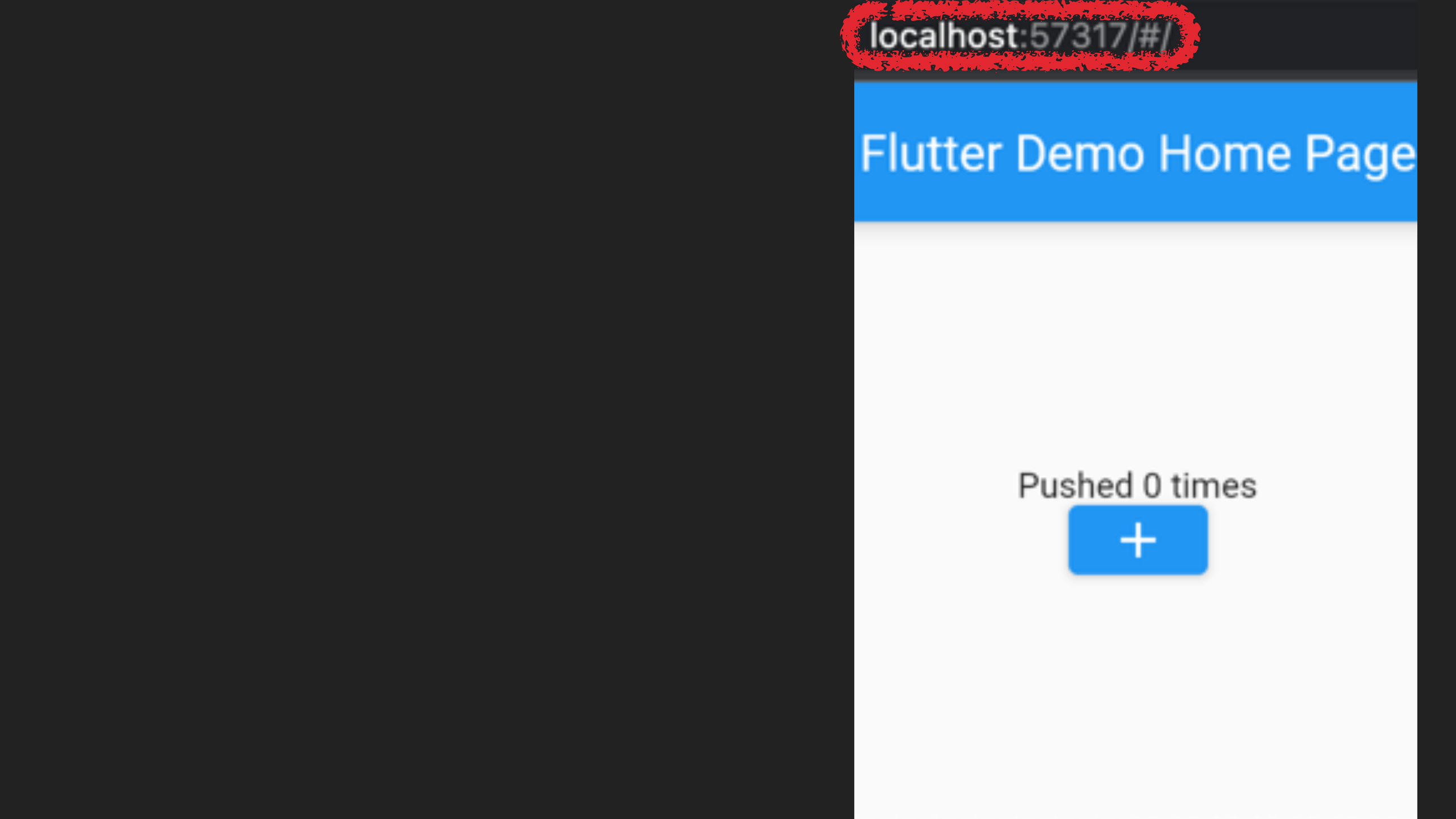
FOR JAVA/.NET BACK-END DEVELOPERS

FLUTTER, XAMARIN, REACT NATIVE (SOME WEB)

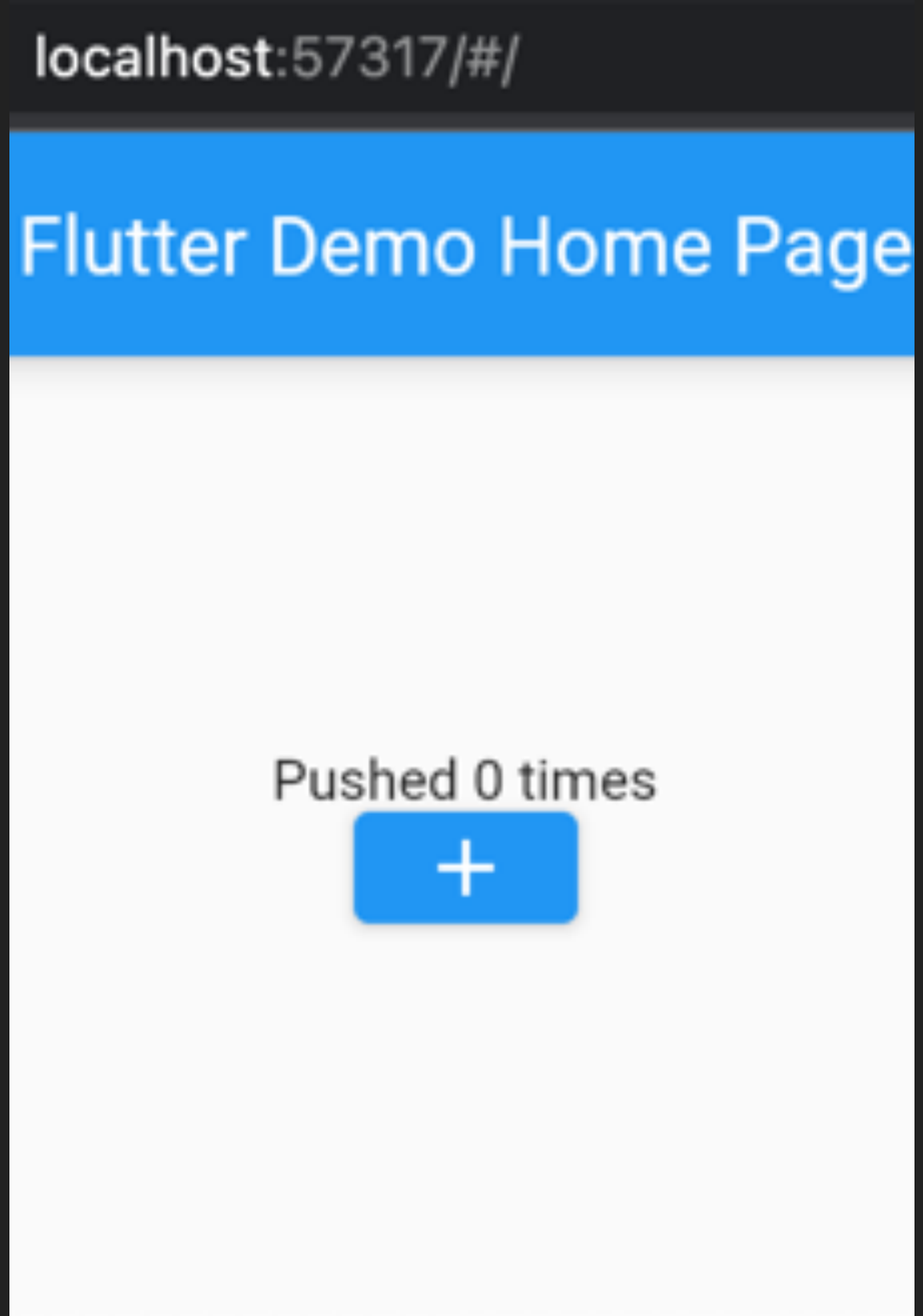
NATIVE LOOK & FEEL ON MOBILE & DESKTOP

CROSS-PLATFORM: NO WEB

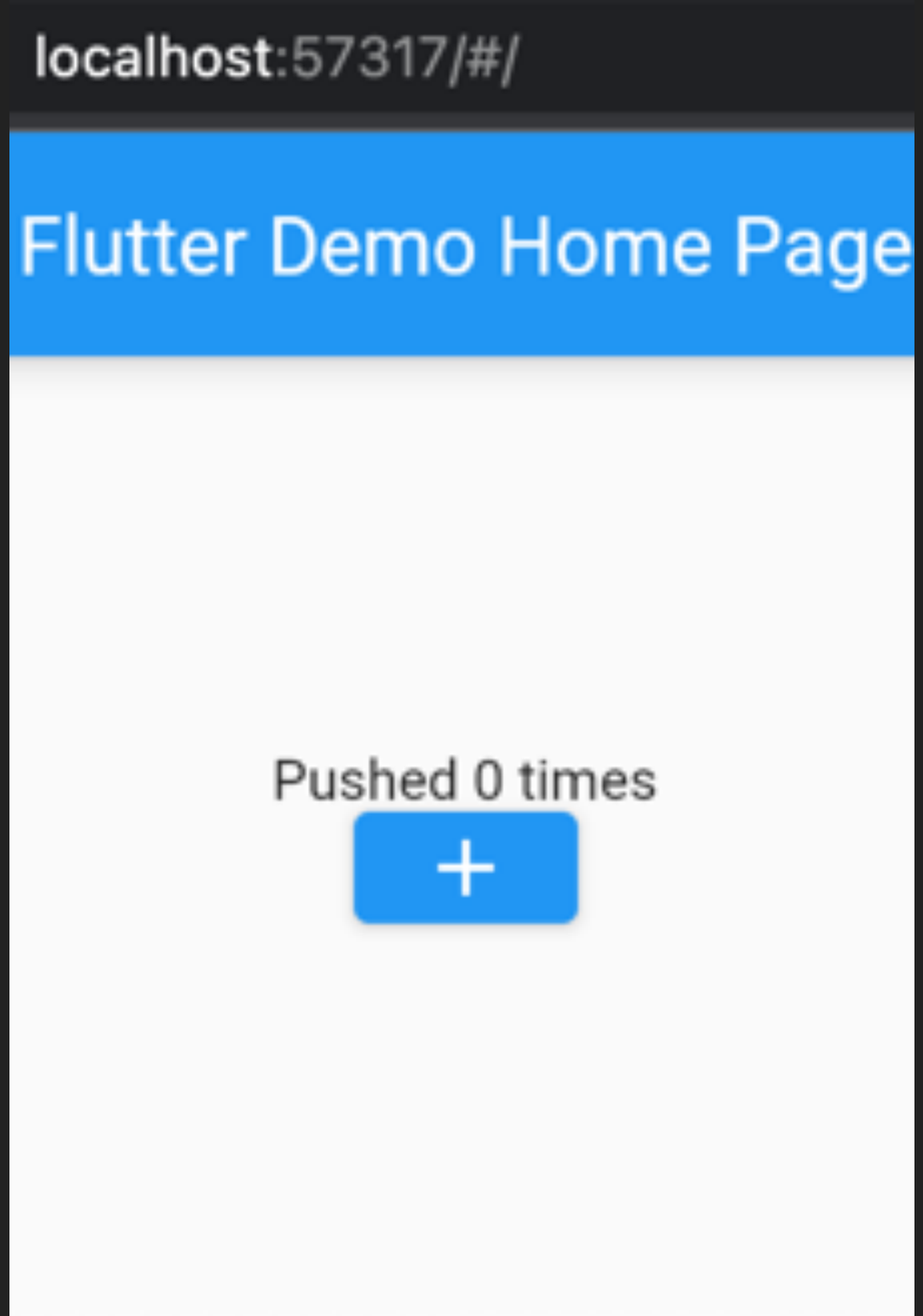
STANDARD FLUTTER APP (MODIFIED)


localhost:57317/#/
Flutter Demo Home Page
Pushed 0 times
+

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



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

```
int _counter = 0;
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UI AS CODE

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    )
  ],
)
```

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 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

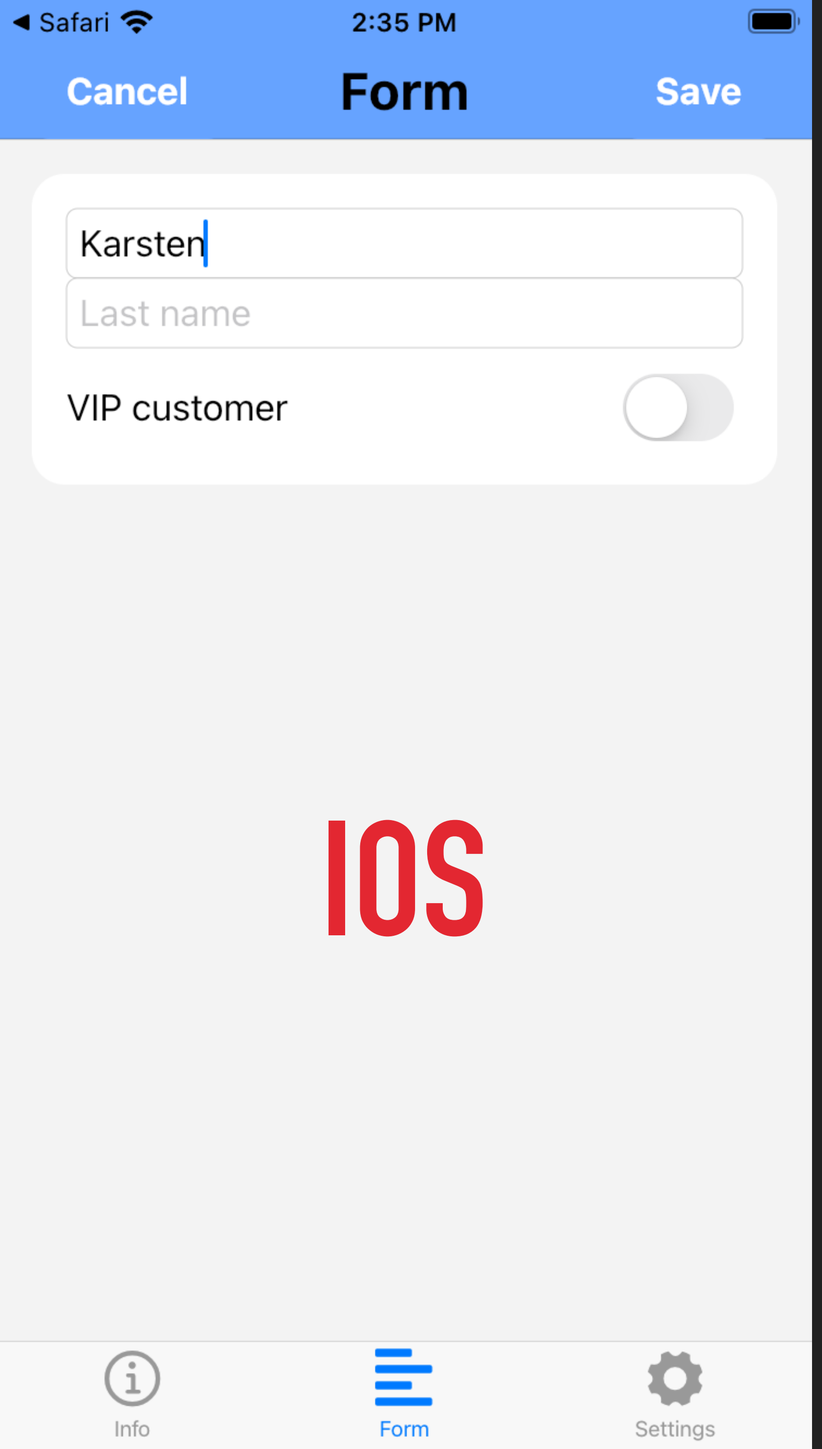
NATIVE LOOK & FEEL (FLUTTER + THIRD-PARTY)

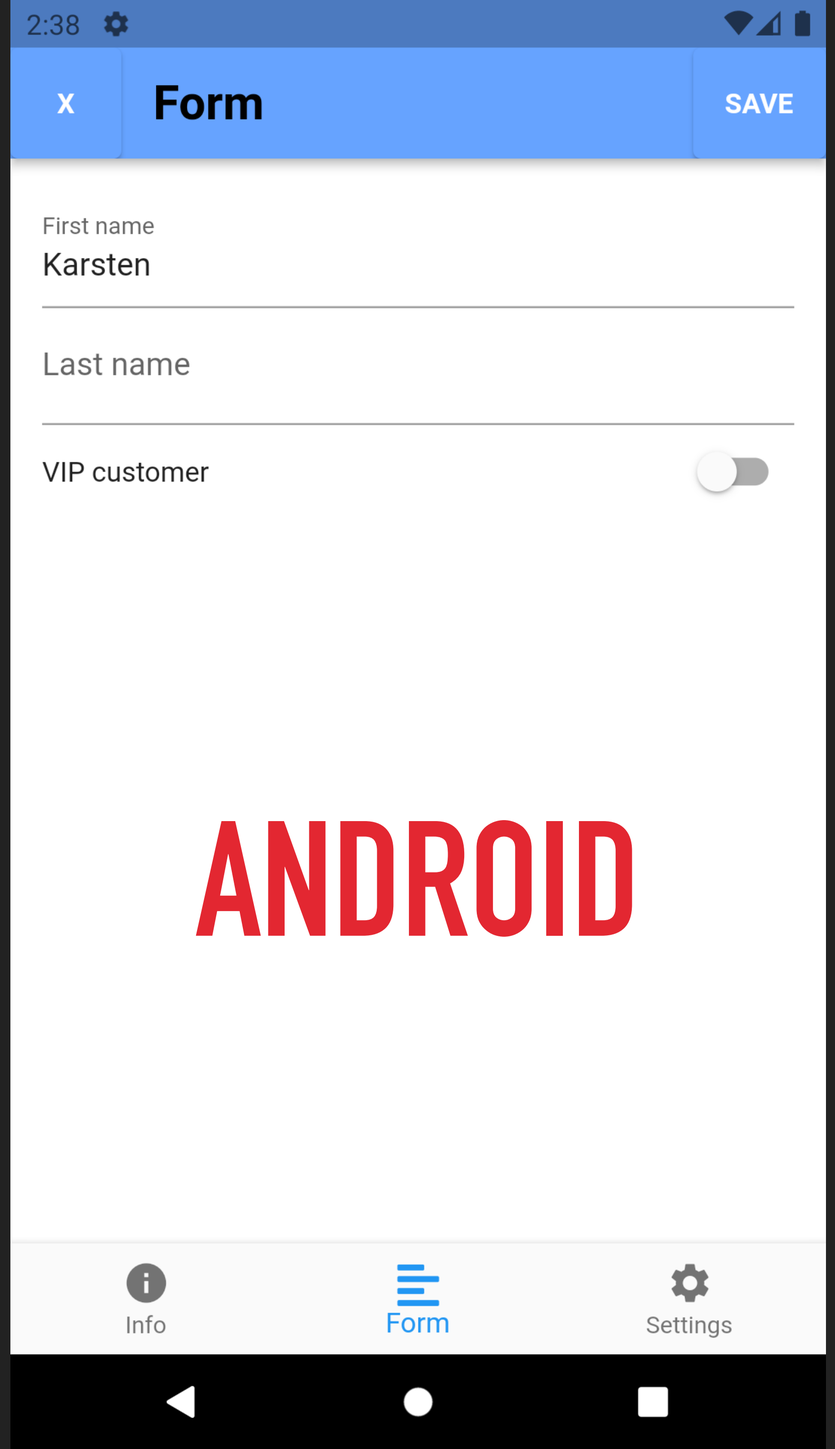
"EXCELLENT DEVELOPER EXPERIENCE"

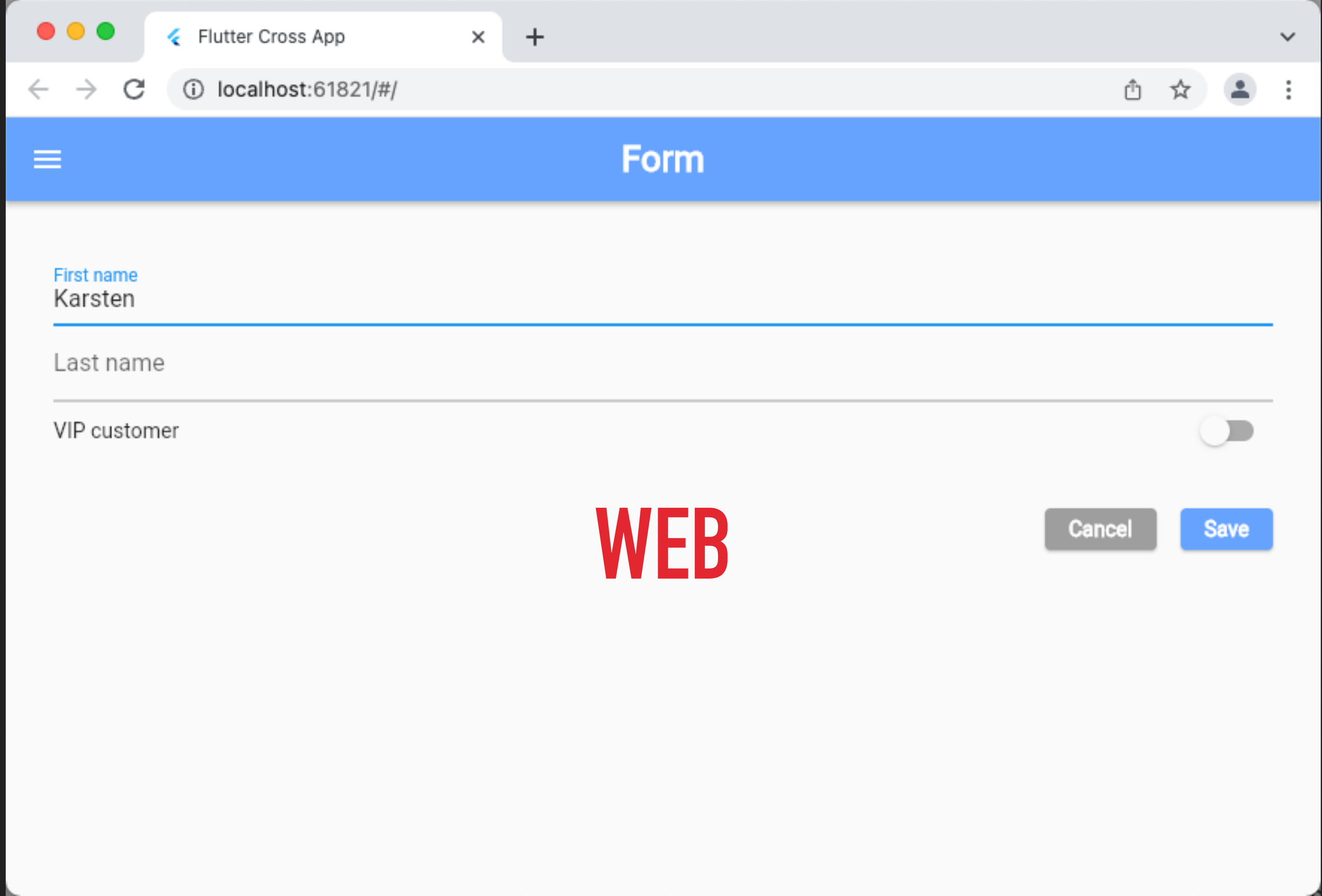
MOST POPULAR WITH DEVS, GAINING WITH EMPLOYERS

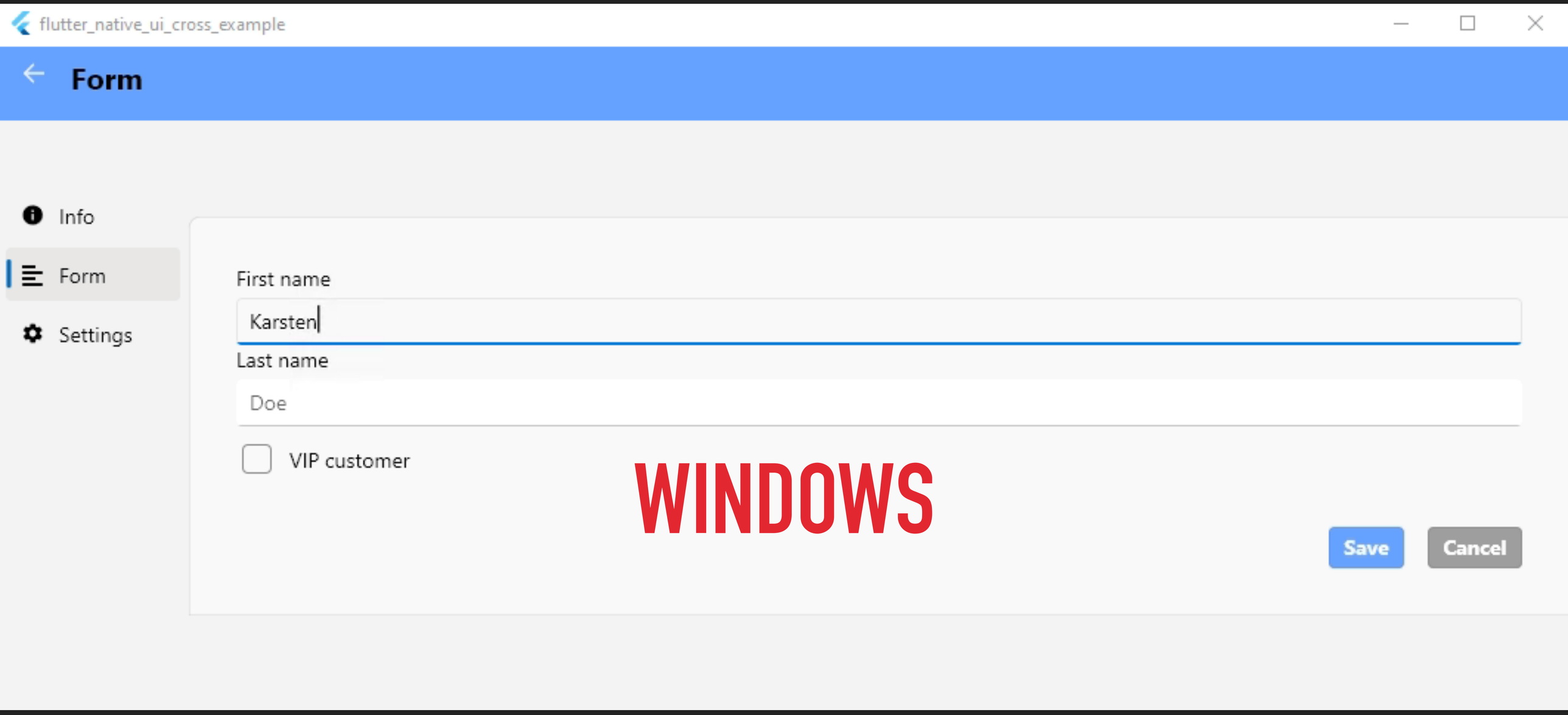
FLUTTER

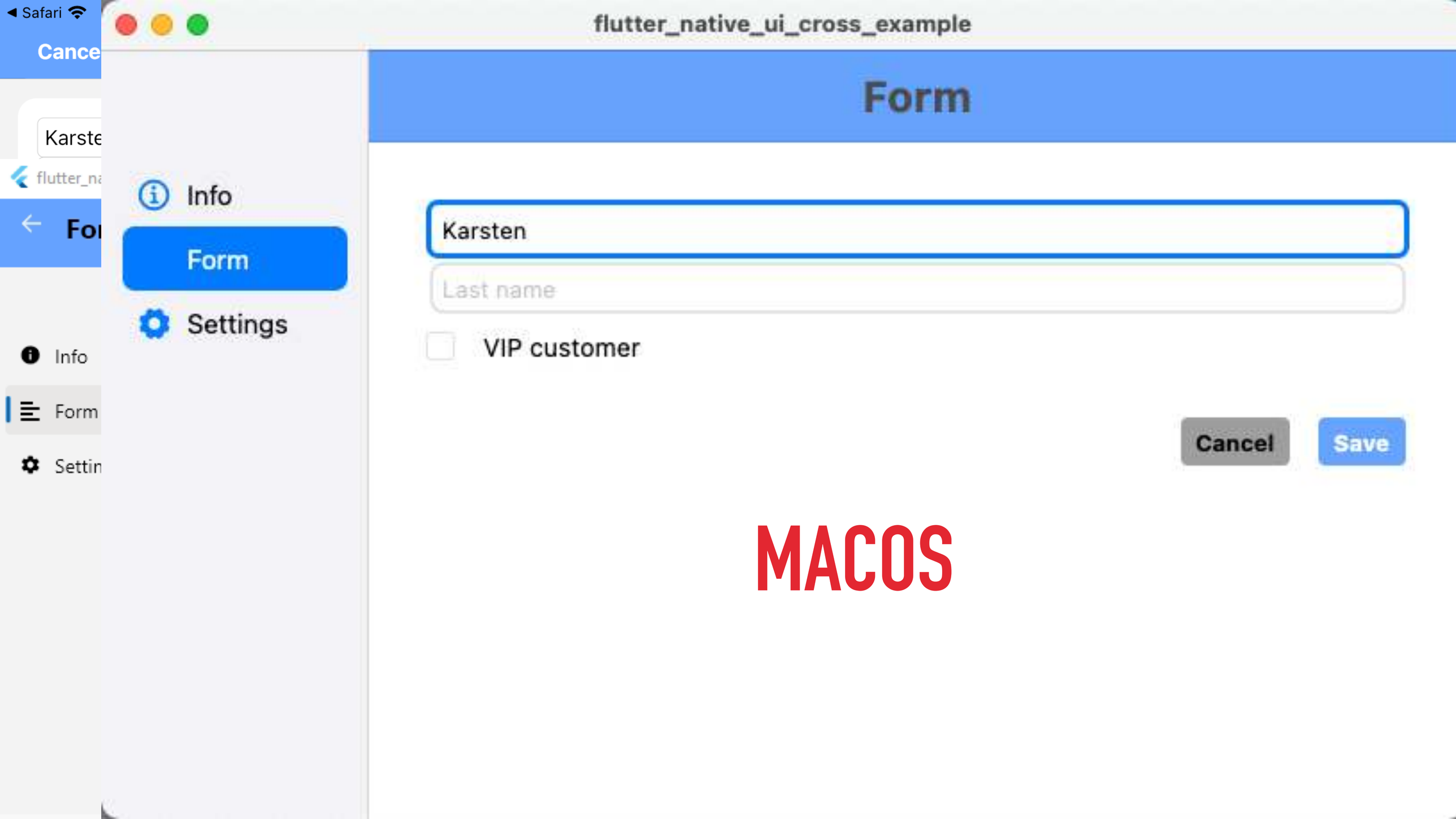
NATIVE UI WITH 1 CODEBASE & FLUTTER?


Safari
2:35 PM
Cancel
Form
Save
Karsten
Last name
VIP customer
IOS
Info
Form
Settings


2:38
X
Form
SAVE
First name
Karsten
Last name
VIP customer
ANDROID
Info
Form
Settings


Flutter Cross App
localhost:61821/#/
Form
First name
Karsten
Last name
VIP customer
WEB
Cancel
Save


flutter_native_ui_cross_example
Form
Info
Form
Settings
First name
Karsten
Last name
Doe
VIP customer
WINDOWS
Save
Cancel


Safari
Cance
Karste
flutter_na
Fo
Info
Form
Settin
flutter_native_ui_cross_example
Info
Form
Settings
Form
Karsten
Last name
VIP customer
Cancel
Save
MACOS

MY SAMPLE APP IS ON GITHUB

SECTION SUMMARY

CROSS-PLATTFORM 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



0 : 0



Bayern
— 1. Platz

Union
^ 7. Platz



IHRE WETTE IN SICHEREN HÄNDEN.

Jetzt 100 € Bonus sichern!

tipico

18+. Glücksspiel kann süchtig machen. Hilfe unter www.spielerambulanz.de.

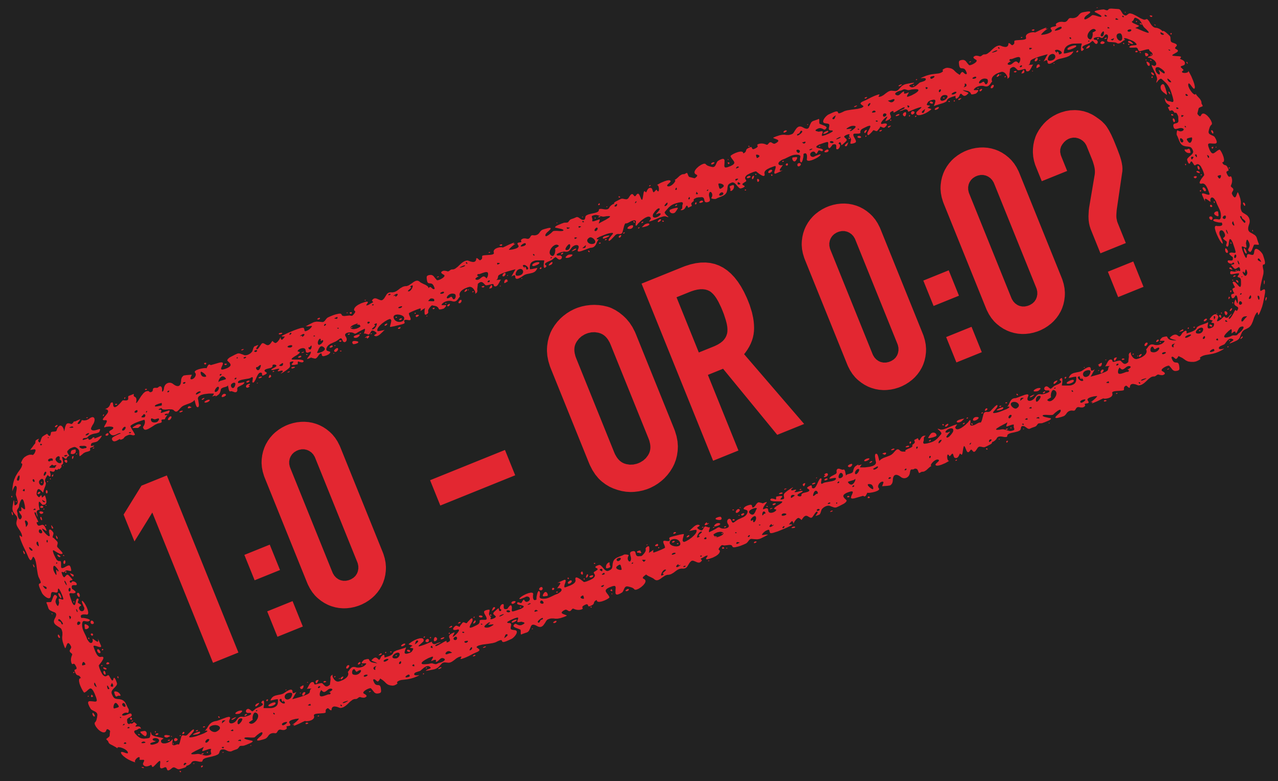
Coman 16' 1 : 0

16' Tor für Bayern



Kingsley
Coman
Rechtsschuss

1 : 0


1:0 – OR 0:0?

MACOS APP STORE

Apple Account

Balance: $113.38

Account Access

Apple Music 2 apps are signed
music activity and

Manage

Karsten Silz
$38.38


$113 - OR $38?

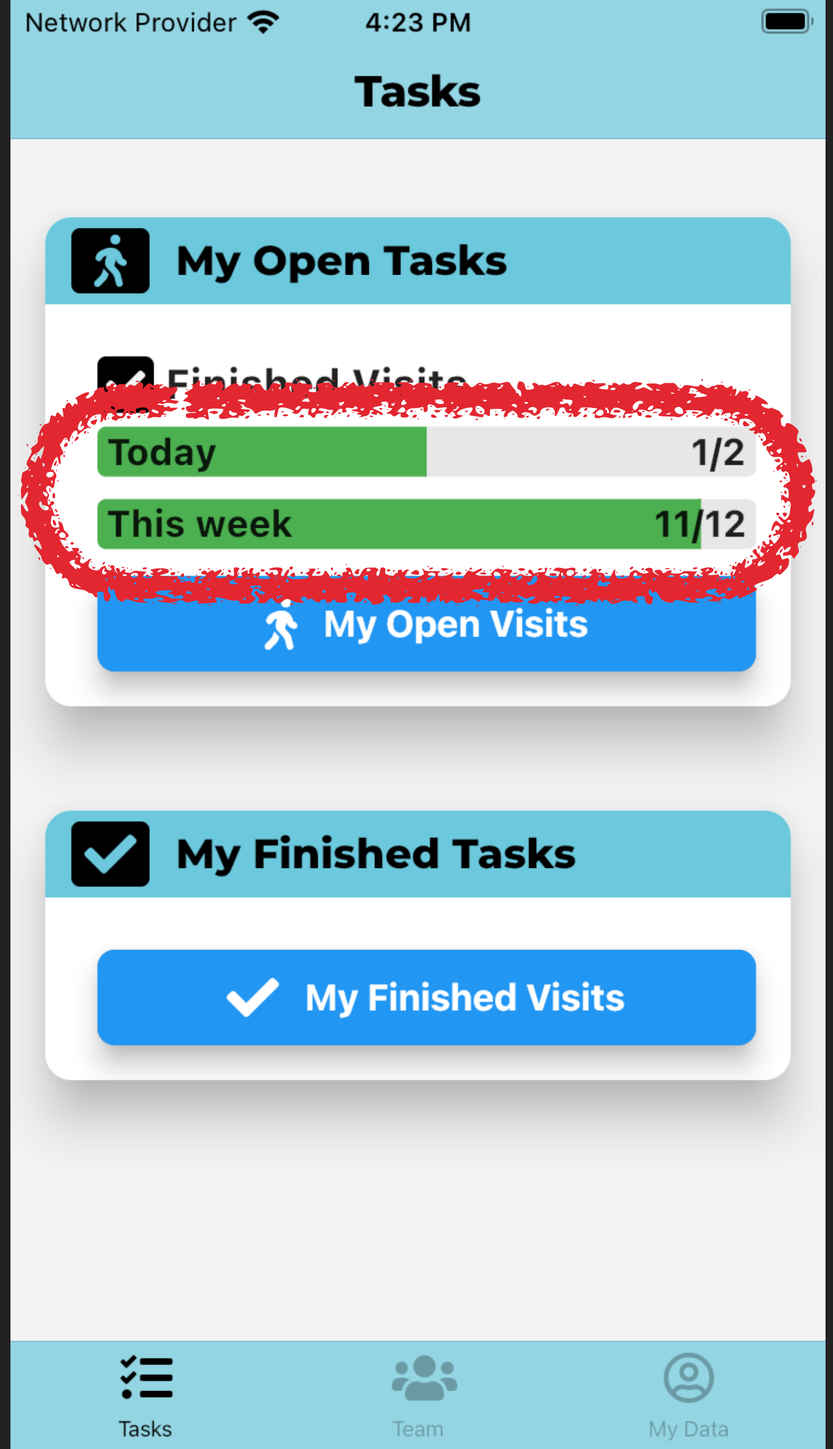
HOW TO AVOID "UI OUT OF SYNC"?

ONE GLOBAL DATA STORE

DATA STORE CHANGES => ENTIRE UI UPDATES

NO "STATUS DUPLICATES" IN DATA STORE

ONE SOURCE OF UI TRUTH



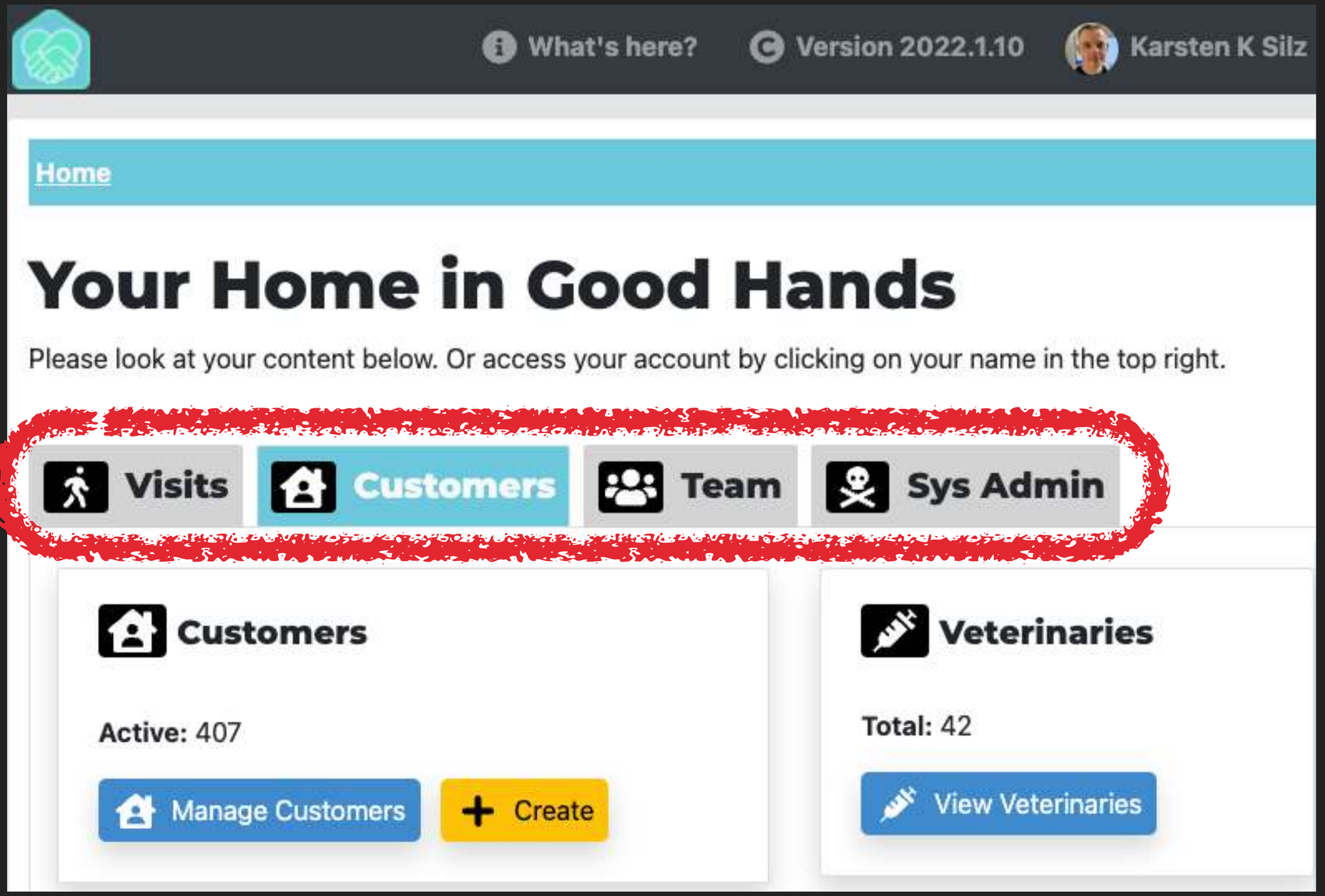
REAL-TIME
CALCULATION
WITH ALL VISITS

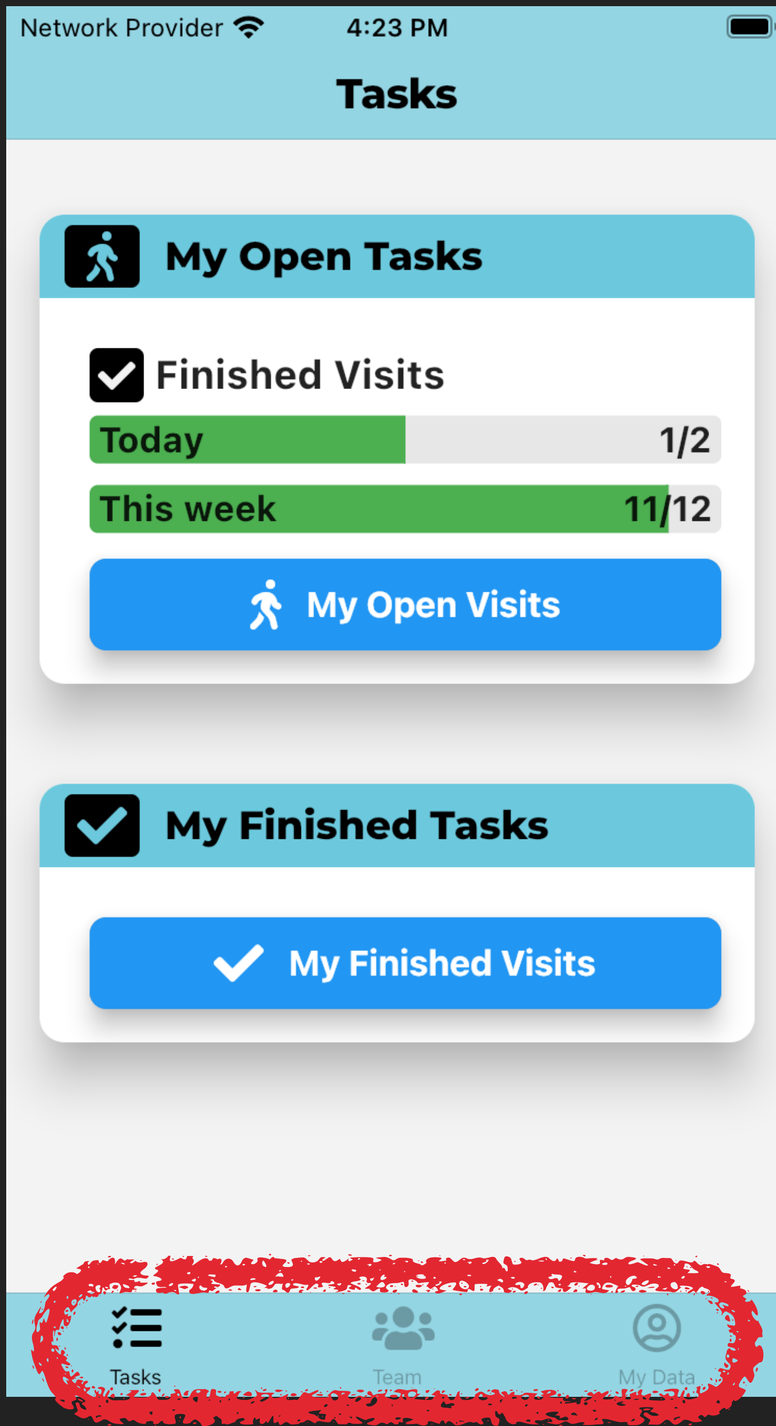
NO "STATUS DUPLICATES" IN DATA STORE

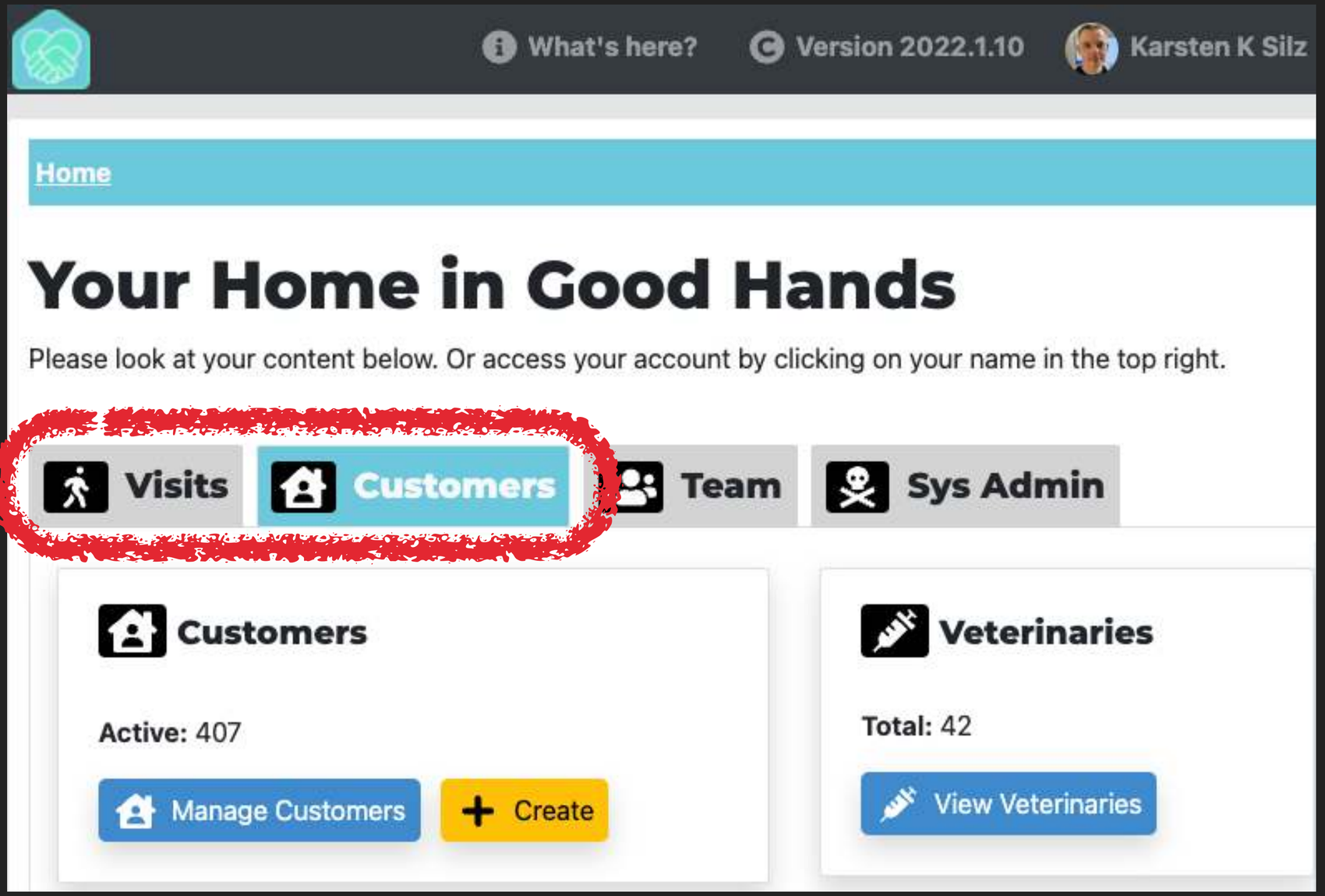
WORKS OFFLINE – BUT DUPLICATES SERVER CODE

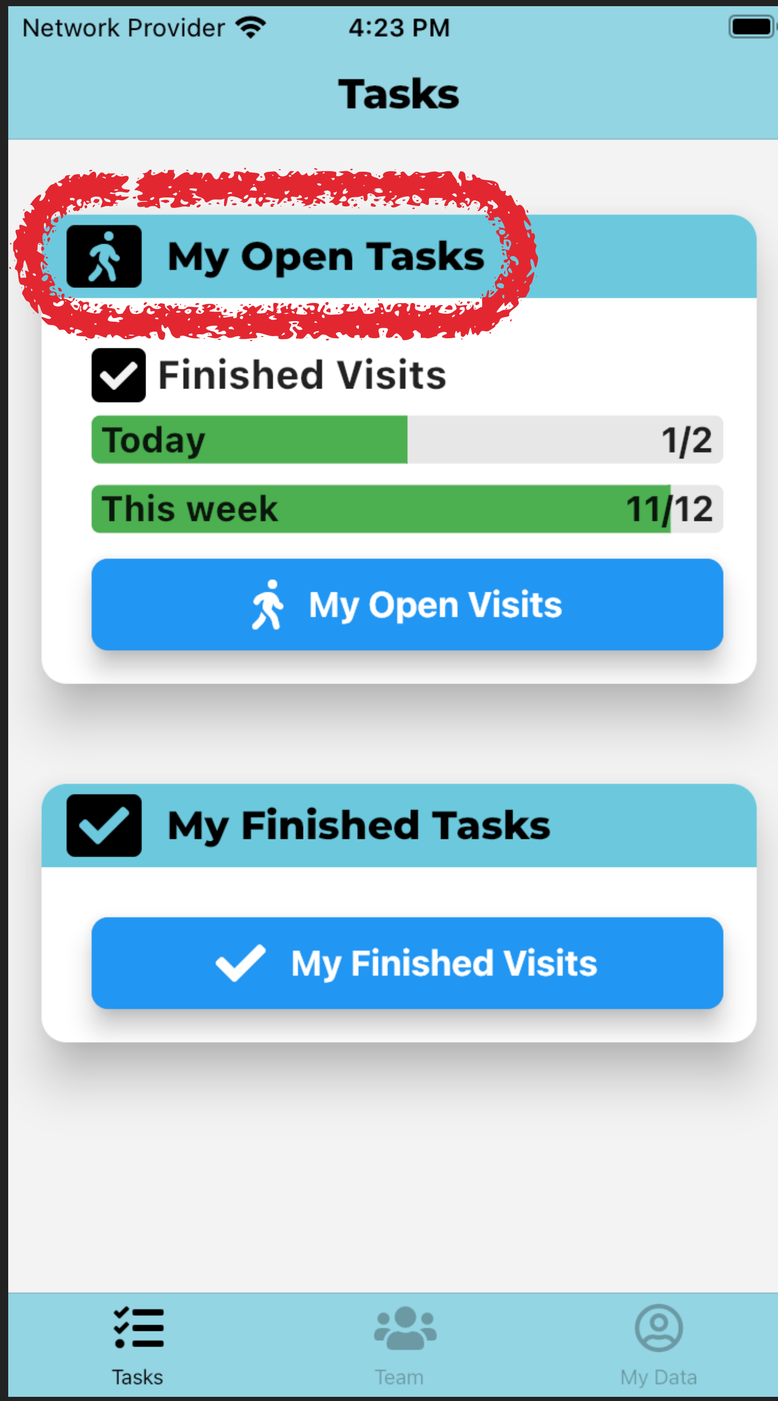
ONE SOURCE OF UI TRUTH

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


What's here?
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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

THAT'S WHAT I LEARNED ABOUT FLUTTER

~~WHAT IS FLUTTER?~~

~~WHAT I LEARNED ABOUT FLUTTER~~

SUMMARY

CROSS-PLATTFORM 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

FLUTTER: MOBILE 👍

FLUTTER: OTHER 😒

FIREBASE 👍

MOBILE POWER

ONE SOURCE OF UI TRUTH

BE CONSISTENT

BACK TO BASICS

WRITE BETTER MOBILE APPS!



SLIDES & VIDEOS

EXTRA INFORMATION

GET STARTED WITH FLUTTER!

NATIVE UI SAMPLE PROJECT

FEEDBACK

BPF.LI/MIK