



BETTER PROJECTS
FASTER

devfest2021
devfest2021
devfest2021

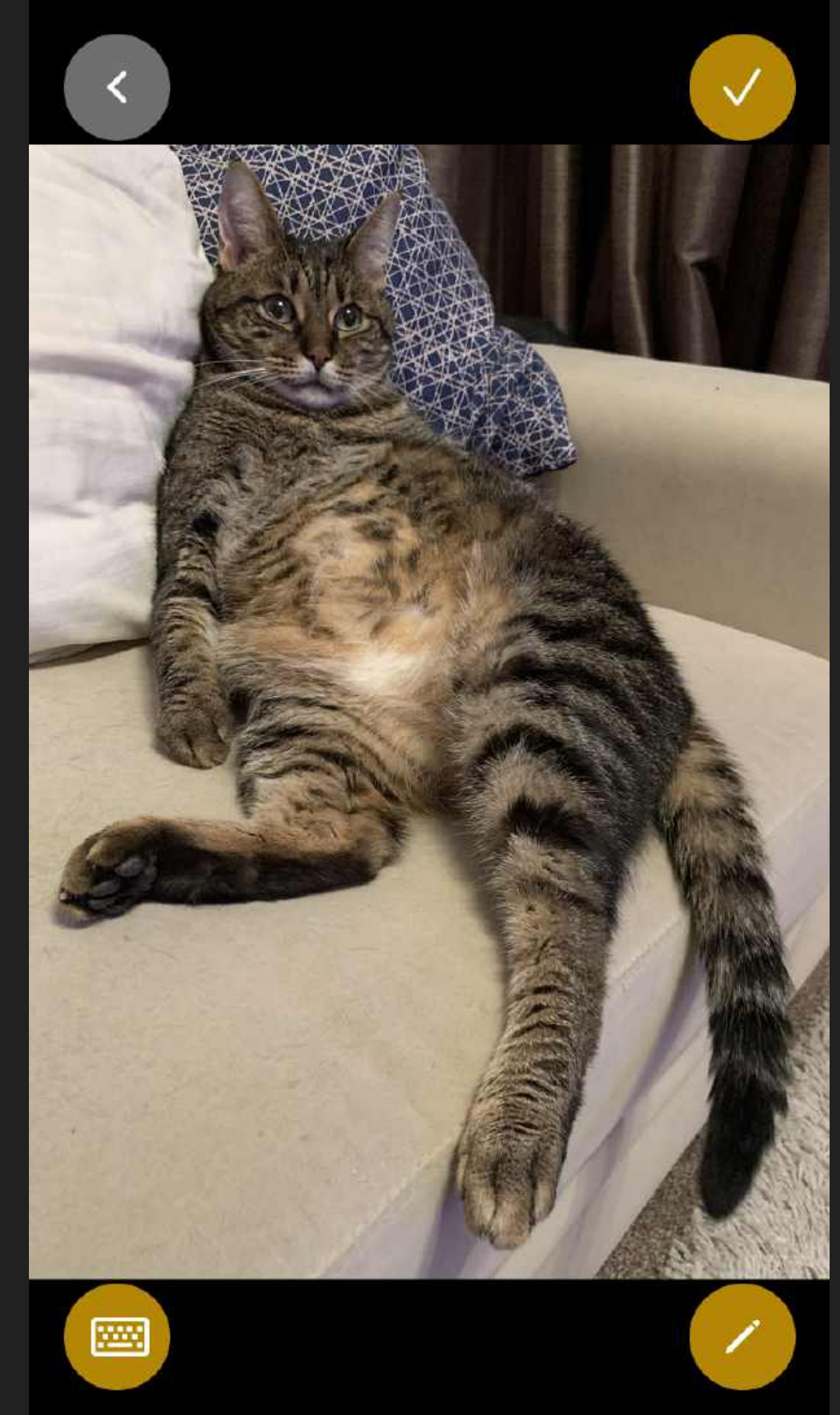
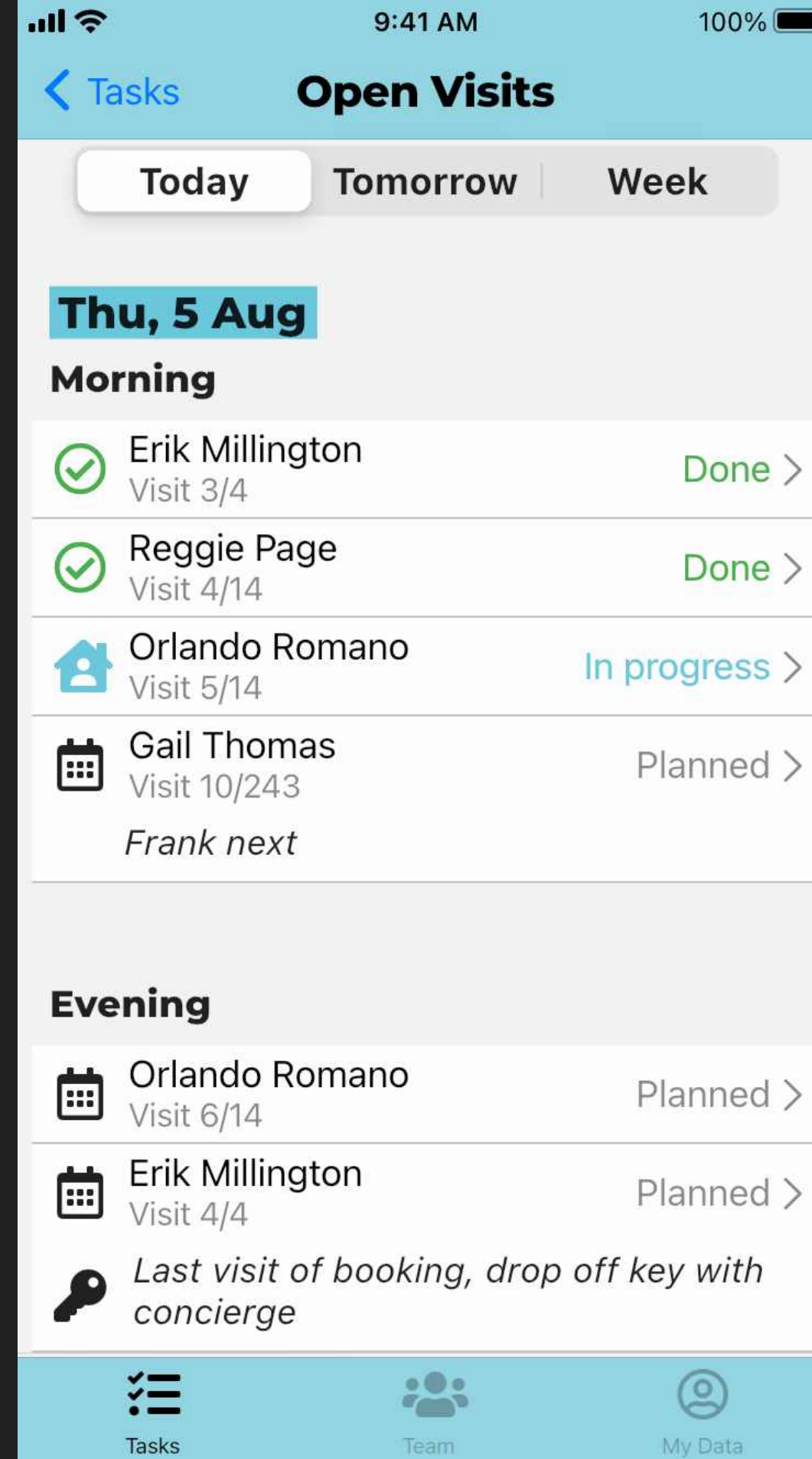
UK & Ireland

devfest-uki.com

KARSTEN SILZ

29 JANUARY 2022

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



**WRITE BETTER FLUTTER
MOBILE APPS!**

FLUTTER 👍

BE BOLD?

FIREBASE 👍

BE CONSISTENT

THINK DIFFERENT

FLUTTER NATIVE UI 🙄

ONE SOURCE OF TRUTH

BACK TO BASICS

IT'S A MENU:
PICK & CHOOSE



TALK PAGE:
SLIDES &
MORE

BPF.LI/DEV

MY CONTEXT?

MY INCENTIVES?

MY BIAS?

I GIVE **ADVICE**



**YOUR HOME IN
GOOD HANDS**

MY CONTEXT

EXCEL



SAAS

**CAT OWNER AWAY:
CAT-SITTERS TAKE
CARE OF CATS & HOME**

JAVA BACK-END (SPRING BOOT)

MANAGER WEB FRONT-END (ANGULAR)

CAT-SITTERS MOBILE APPS (FLUTTER)

I BUILT

NOT TECH-SAVVY

AS FEW CLICKS & AS LITTLE TIME AS POSSIBLE

MOBILE APP NEEDS TO WORK OFFLINE

OUR CUSTOMERS

NOT PART OF FLUTTER/GOOGLE

DON'T **SELL** BOOK/COURSE

CONTRACTOR

SHARE KNOWLEDGE!

MY INCENTIVES

JAVA DEVELOPER FOR 23 YEARS

FLUTTER DEVELOPER FOR 1.5 YEARS

NOT DESIGNER BUT READ BOOKS

MY BIAS

YOU DECIDE!

FLUTTER 👍

BE BOLD?

FIREBASE 👍

BE CONSISTENT

THINK DIFFERENT

FLUTTER NATIVE UI 🙄

ONE SOURCE OF TRUTH

BACK TO BASICS

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

MOBILE, WEB, DESKTOP, EMBEDDED

DART: 2 PARTS JAVA, 1 PART JAVASCRIPT

MOBILE STABLE: **DEC 2018**, WEB STABLE: MAR 2021

FLUTTER

BETTER THAN SEPARATE IOS & ANDROID APPS

SHORT SAVE-COMPILE-RUN CYCLE

LESS COMPELLING ON WEB & DESKTOP

USE IT **AGAIN** FOR MOBILE 👍

FLUTTER 👍

~~FLUTTER~~ 👍

BE BOLD?

FIREBASE 👍

BE CONSISTENT

THINK DIFFERENT

FLUTTER NATIVE UI 🙄

ONE SOURCE OF TRUTH

BACK TO BASICS

GOOGLE'S "BACK-END AS A SERVICE"

MANY FREE SERVICES, SOME PAID

GOOD FLUTTER INTEGRATION

WOULD USE IT AGAIN 👍

FIREBASE



DETAILS ON
TALK PAGE

BPF.LI/DEV

~~FLUTTER~~ 👍

ONE SOURCE OF TRUTH

~~FIREBASE~~ 👍

BACK TO BASICS

THINK DIFFERENT

BE BOLD?

ONE SOURCE OF TRUTH

BE CONSISTENT

THINK DIFFERENT

IS MOBILE POWERFUL?

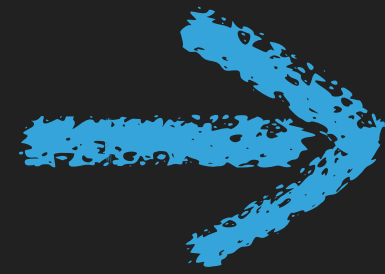
EDIT VIDEOS
ON PHONES!



TikTok

MOBILE IS POWERFUL!

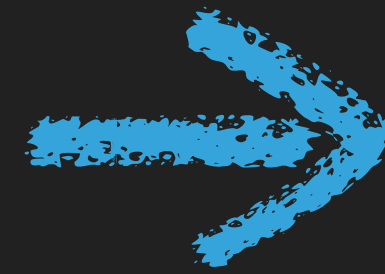
USER
TAPS



PAGE W/O
CONTENT



LOAD

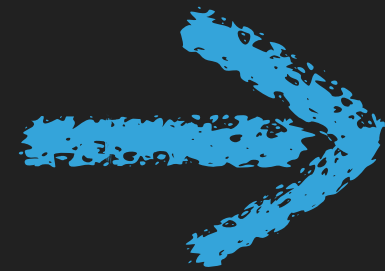


PAGE WITH
CONTENT

TYPICAL APP

USER WAITS

USER
TAPS



PAGE W/O
CONTENT



LOAD



PAGE WITH
CONTENT

TYPICAL APP

USER
TAPS



PAGE WITH
CONTENT

BETTER APP

USER
DOES
SOMETHING



USER
TAPS



PAGE WITH
CONTENT

LOAD



BETTER APP

USER
DOES
SOMETHING



USER
TAPS



PAGE WITH
CONTENT



PAGE WITH
UPDATED
CONTENT

LOAD



REFRESH

BETTER APP

USER DOESN'T WAIT

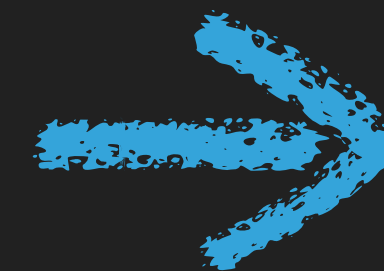
USER
DOES
SOMETHING



USER
TAPS



PAGE WITH
CONTENT



PAGE WITH
UPDATED
CONTENT

LOAD



REFRESH

BETTER APP

STORE DATA **LOCALLY**

(ONE SOURCE OF TRUTH)

LOAD DATA IN BACKGROUND

USER
SAVES → SEND TO
SERVER → CONFIRMATION

TYPICAL APP

USER WAITS

USER
SAVES → SEND TO
SERVER → CONFIRMATION

TYPICAL APP

USER
SAVES → CONFIRMATION

BETTER APP

USER
SAVES



CONFIRMATION



STORE



SEND TO
SERVER

BETTER APP

USER DOESN'T WAIT

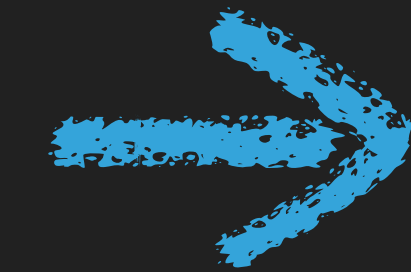
USER
SAVES



CONFIRMATION



STORE



SEND TO
SERVER

BETTER APP

SAVE DATA IN BACKGROUND *

* WE CAN'T IF SERVER VALIDATES

MOBILE IS POWERFUL

STORE DATA LOCALLY

LOAD & SAVE DATA IN BACKGROUND

THINK DIFFERENT

~~FLUTTER~~ 👍

BE BOLD?

~~FIREBASE~~ 👍

BE CONSISTENT

~~THINK DIFFERENT~~

FLUTTER NATIVE UI 🙄

ONE SOURCE OF TRUTH

BACK TO BASICS

WHY CARE?

ONE SOURCE OF TRUTH

MACOS APP STORE

Apple Account

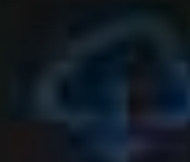
Balance: \$113.38

Account Access

Apple Music 2 apps are signed
music activity and

Manage

Karsten Silz
\$38.38



Apple Account

Balance: \$113.38

Account Access

Apple Music 2 apps are signed
music activity and

Manage

Karsten Silz
\$38.38

Apple Account

Balance: \$113.38

Account Access

Apple Music: 2 apps are signed in for music activity and

Manage

Karsten Silz
\$38.38

BALANCE \$113 – OR \$38?

HOW TO AVOID UI INCONSISTENCIES?

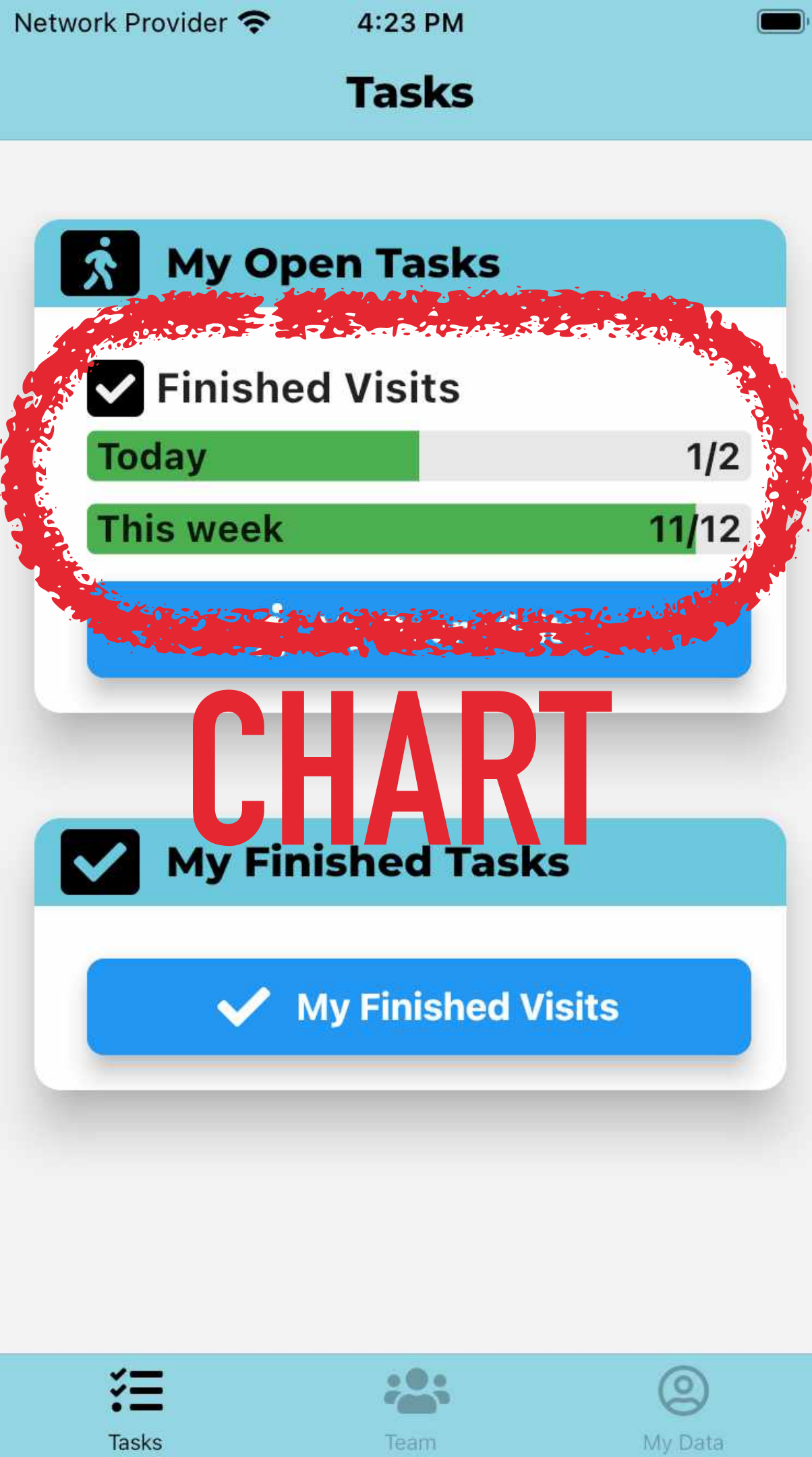
ONE GLOBAL DATA STORE IN APP

GLOBAL DATA: USED ON MULTIPLE PAGES

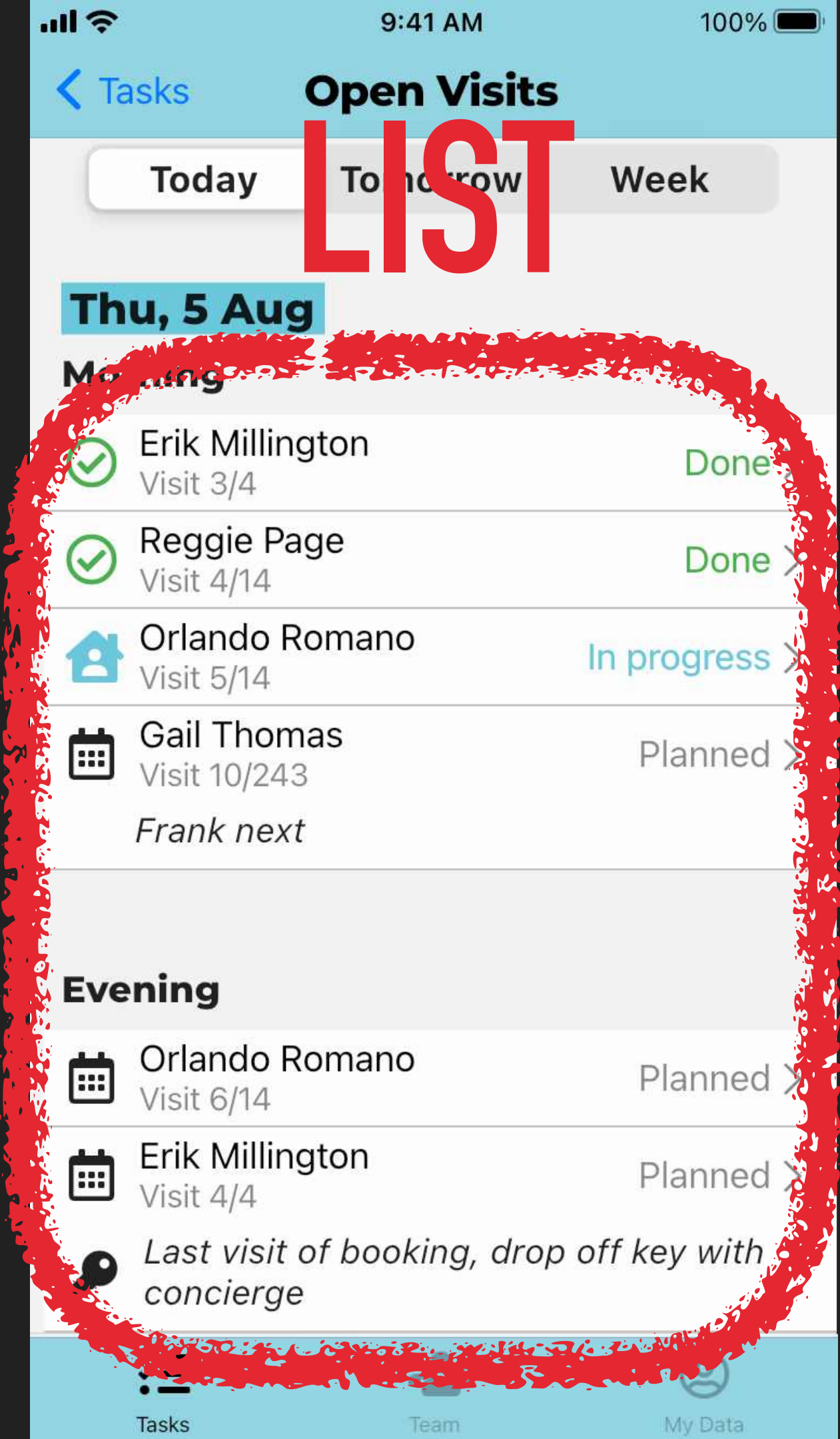
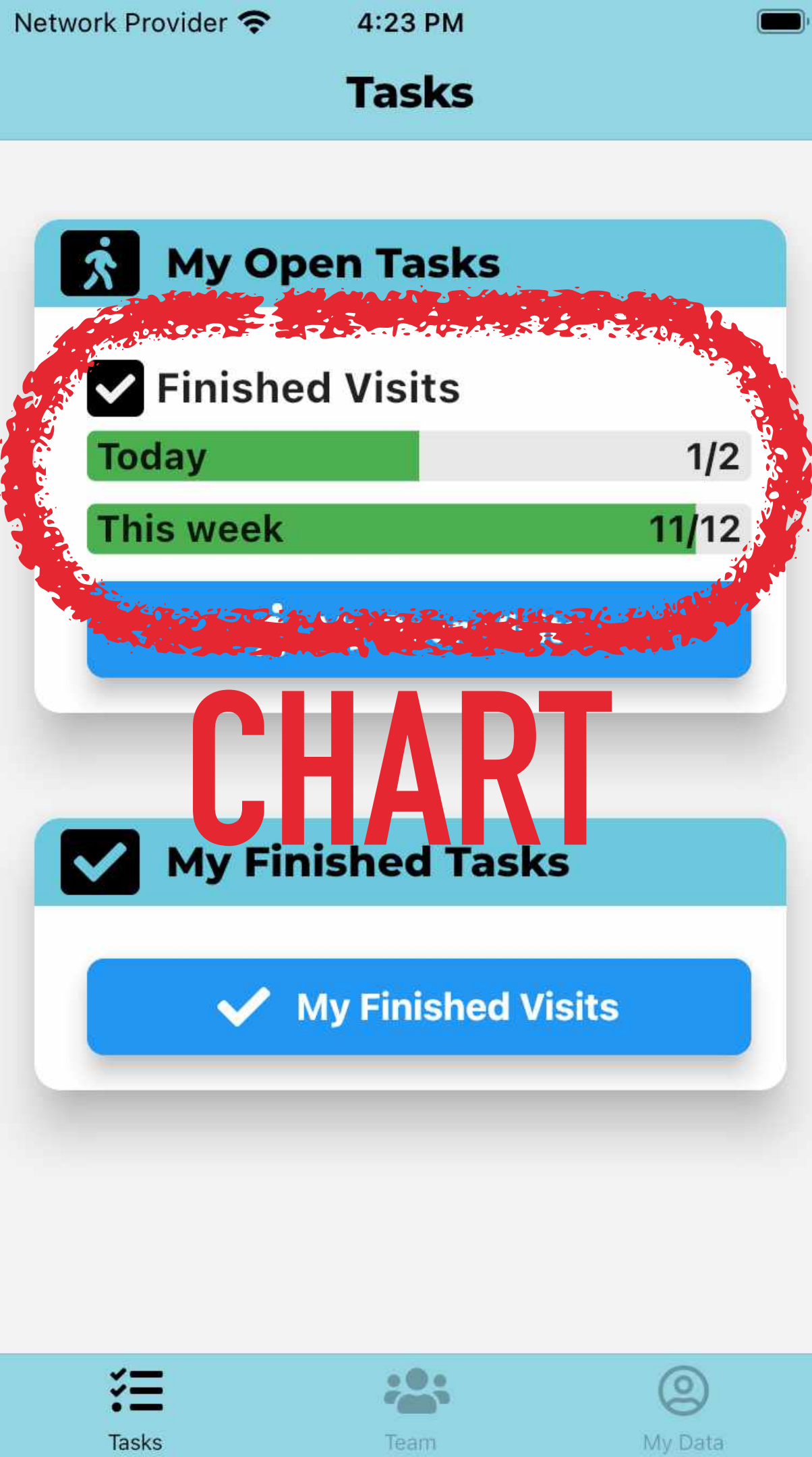
DATA STORE UPDATES => ENTIRE UI UPDATES

NO DUPLICATES IN DATA STORE

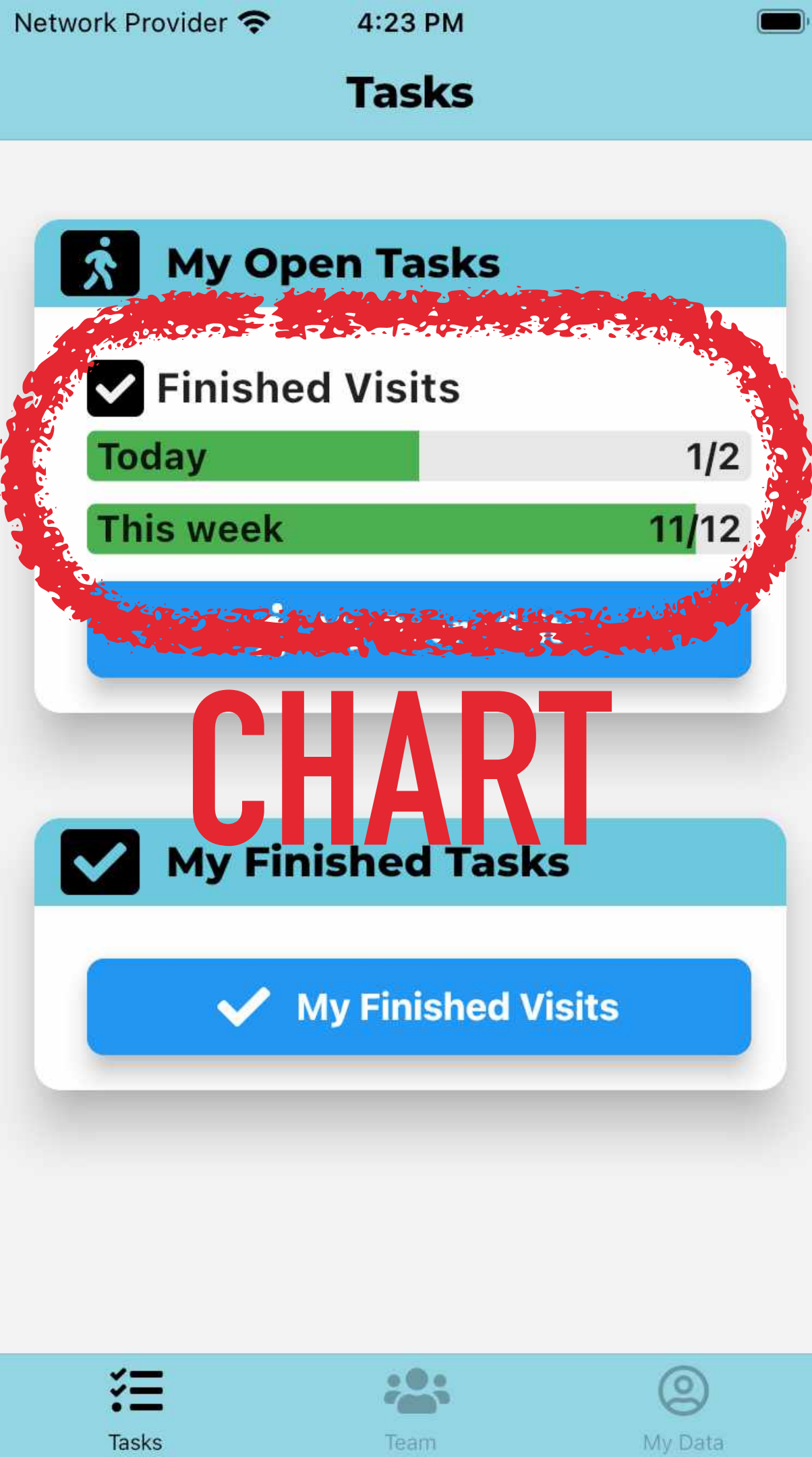
MY APPROACH



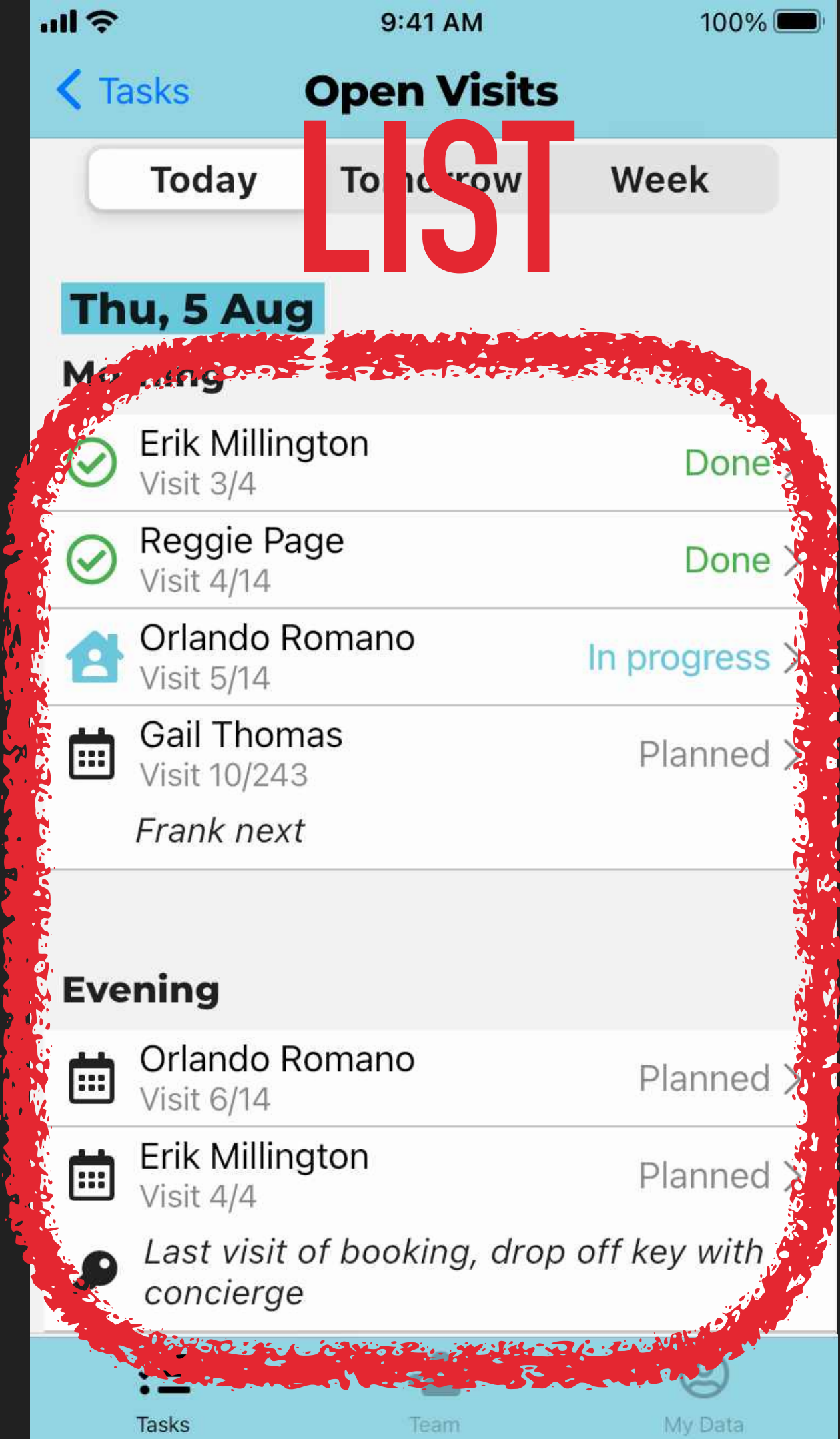
NO DUPLICATES



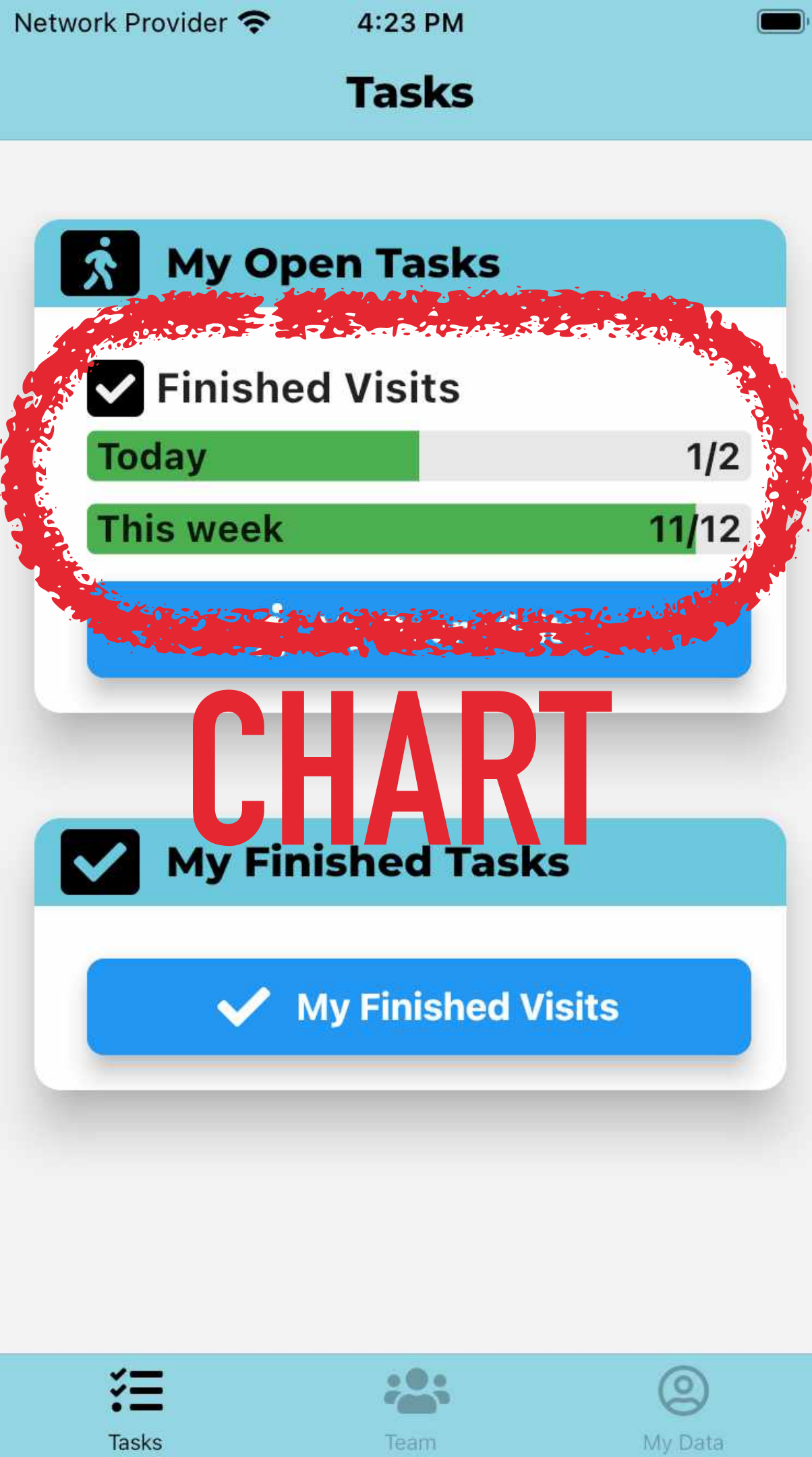
NO DUPLICATES



INITIALLY: TWO DIFFERENT
OBJECTS =>
INCONSISTENCIES



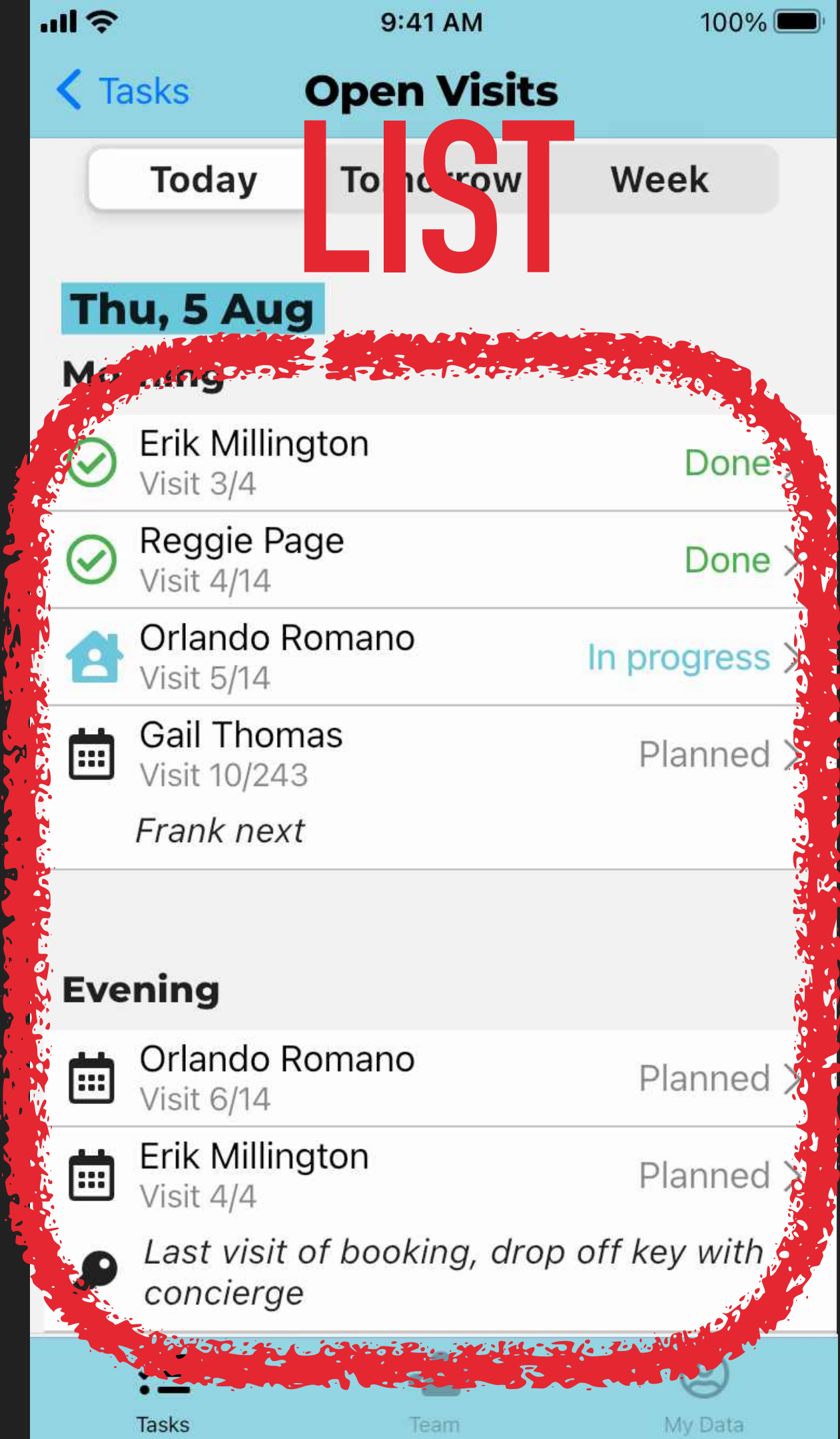
NO DUPLICATES



INITIALLY: TWO DIFFERENT
OBJECTS =>
INCONSISTENCIES

NOW: CHART = REAL-TIME
CALCULATION OF LIST

NO DUPLICATES



NOT TECH-SAVVY

AS FEW CLICKS & AS LITTLE TIME AS POSSIBLE

MOBILE APP NEEDS TO WORK OFFLINE

OUR CUSTOMERS

GOOD: DATA STORE = APP WORKS **OFFLINE**

BAD: APP **DUPLICATES** "SERVER STATUS LOGIC"

HOW OFFLINE?

ONE GLOBAL DATA STORE IN APP

DATA STORE UPDATES => ENTIRE UI UPDATES

NO DUPLICATES IN DATA STORE

WORKS OFFLINE – BUT SERVER CODE DUPLICATION

ONE SOURCE OF TRUTH



DETAILS ON
TALK PAGE

BPF.LI/DEV

~~FLUTTER~~ 👍

BE BOLD?

~~FIREBASE~~ 👍

BE CONSISTENT

~~THINK DIFFERENT~~

FLUTTER NATIVE UI 🙄

~~ONE SOURCE OF TRUTH~~

BACK TO BASICS

BE BOLD?

NOT TECH-SAVVY

AS FEW CLICKS & AS LITTLE TIME AS POSSIBLE

MOBILE APP NEEDS TO WORK OFFLINE

OUR CUSTOMERS

THIS MAY NOT WORK...

**UK BANKING APP
IPHONE**

08:20



Manage



Your Home in Good Hands Ltd.

Standing Order

£[REDACTED]

Payment Amount

23 January 2022

Next Payment Date

Monthly

Frequency

When Cancelled

Payment Ends

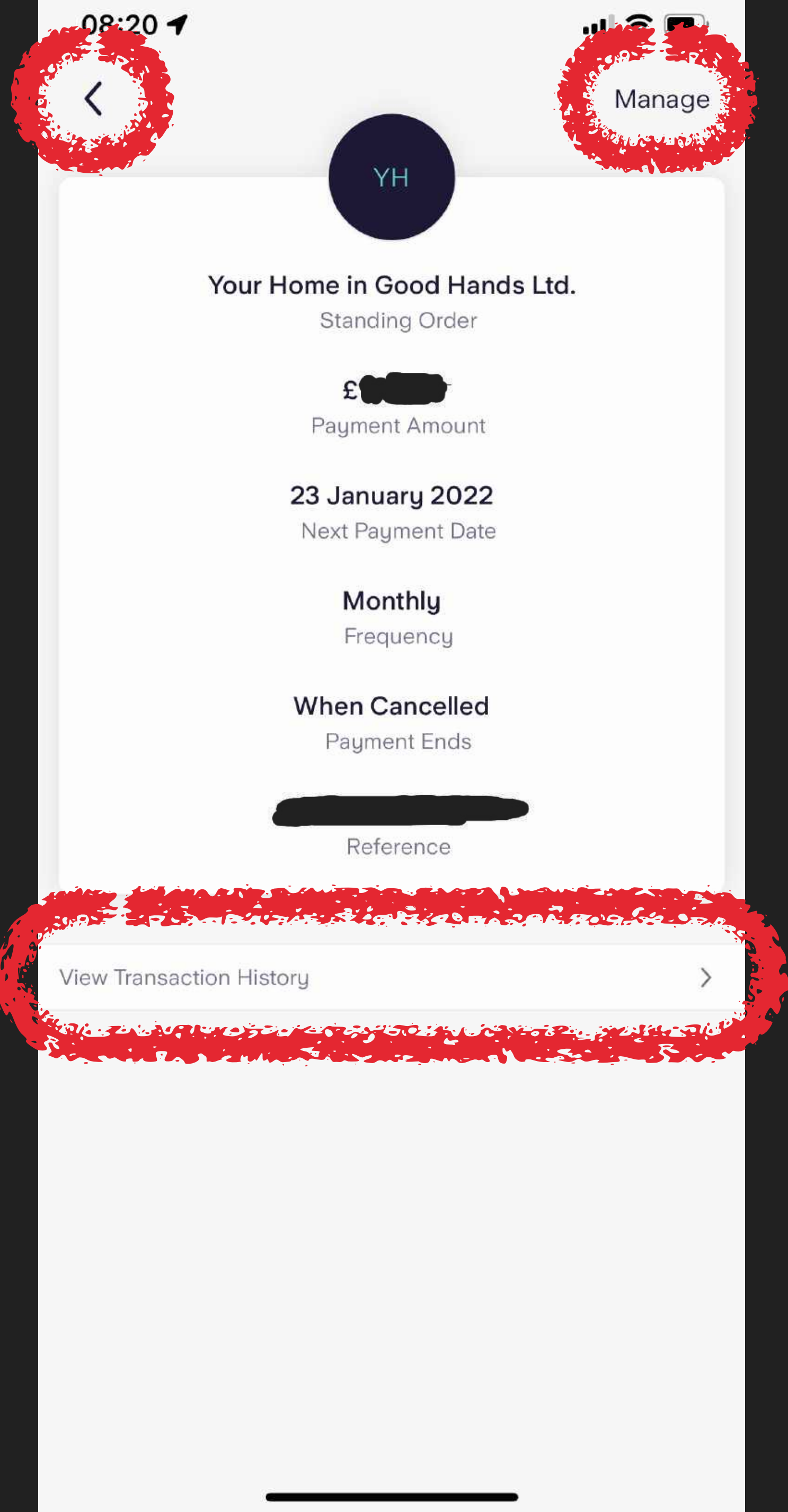
[REDACTED]

Reference

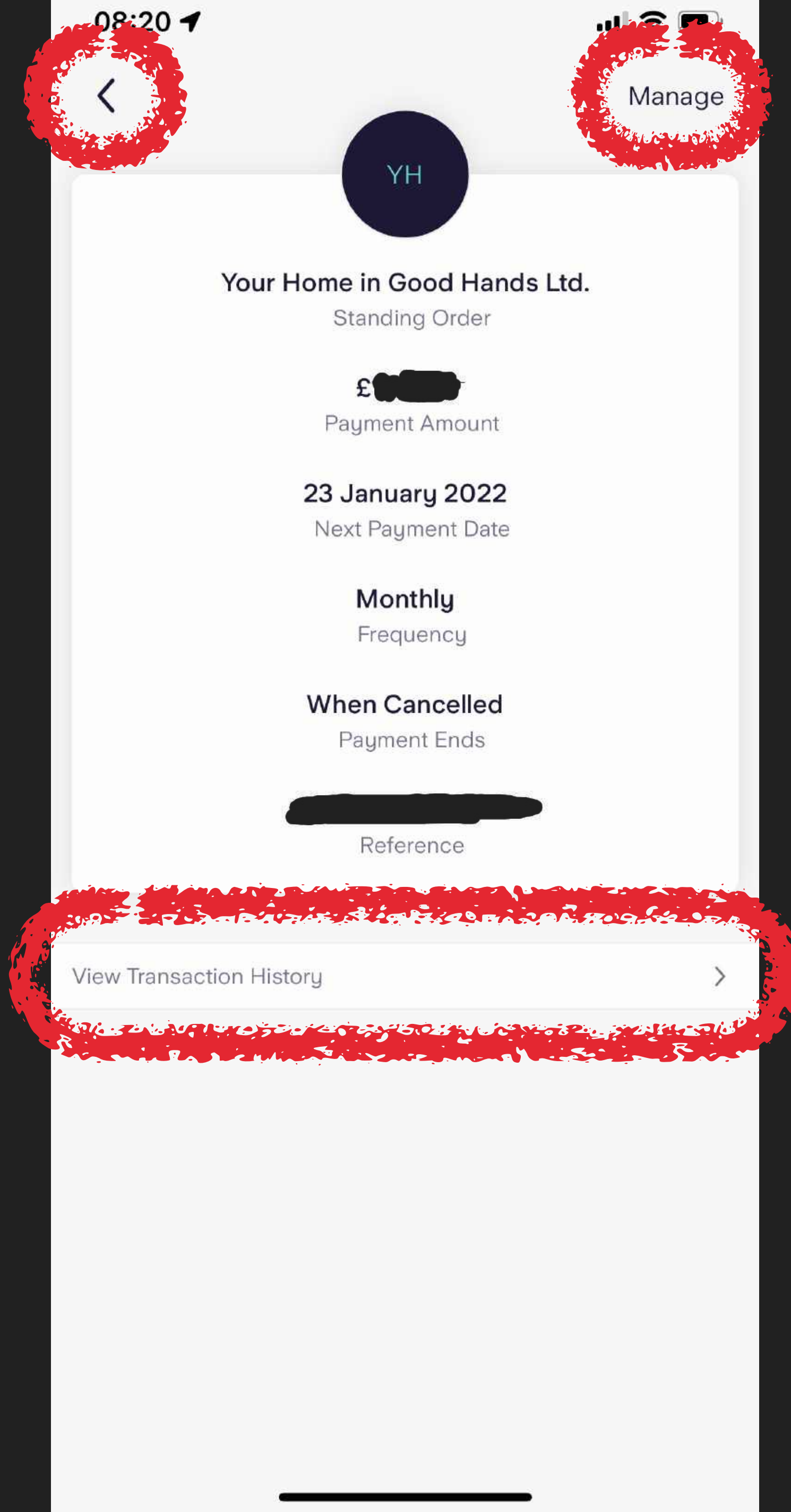
View Transaction History



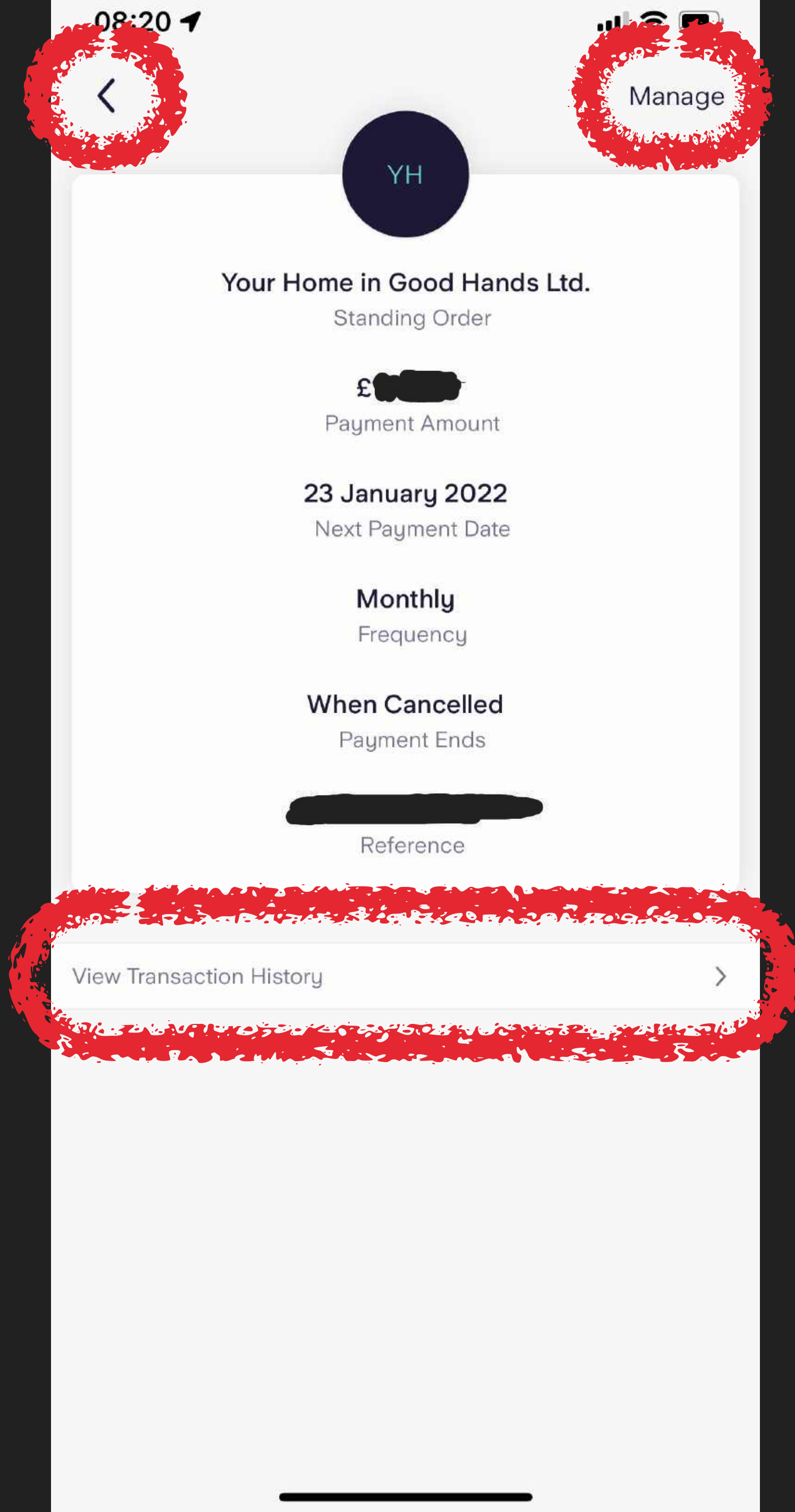
WHERE CAN
YOU TAP?



WHERE CAN
YOU TAP?

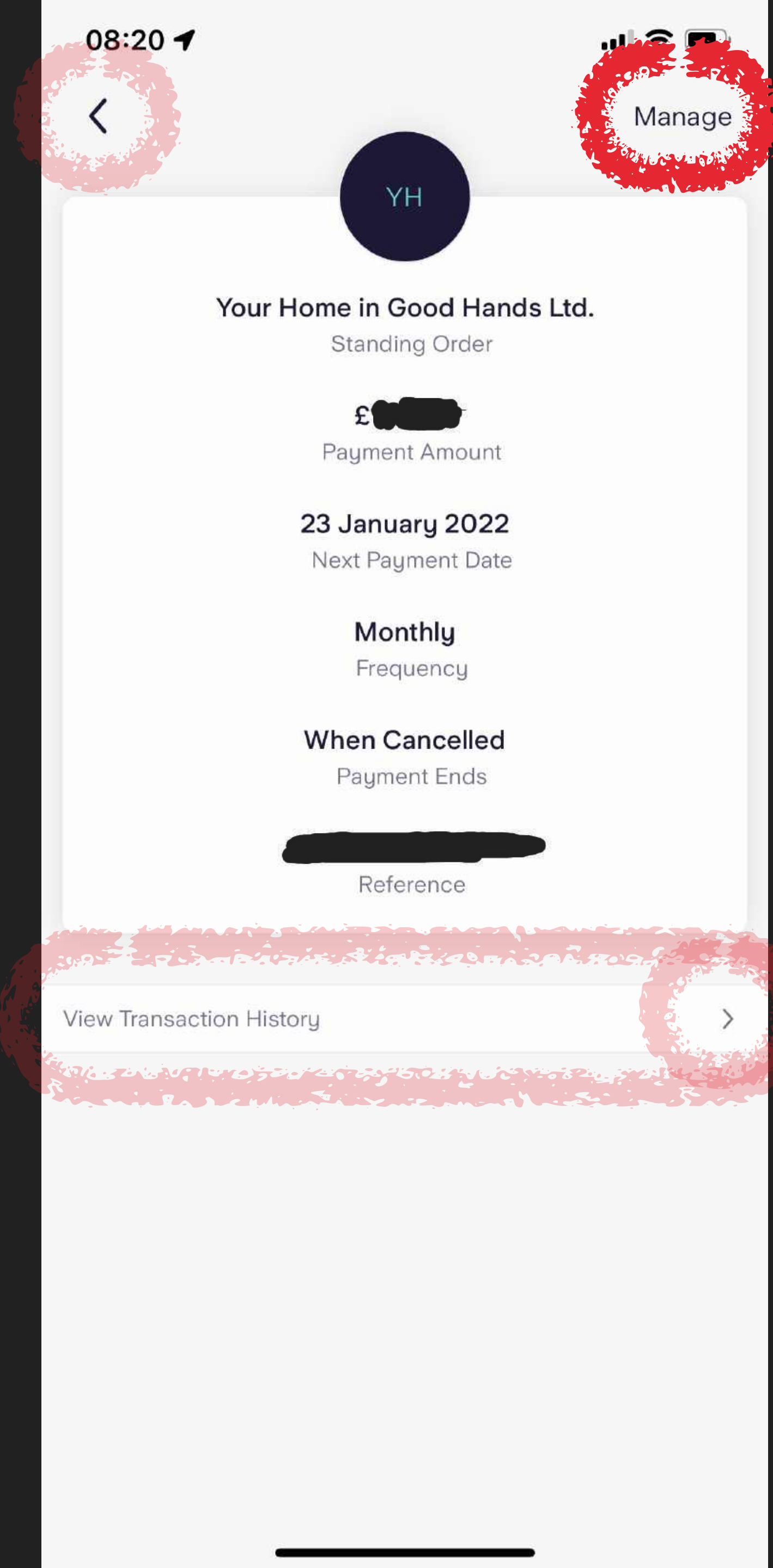


**AFFORDANCES ("DOES
SOMETHING")**



SIGNIFIERS ("MAKE
'DOES SOMETHING'
CLEARER")

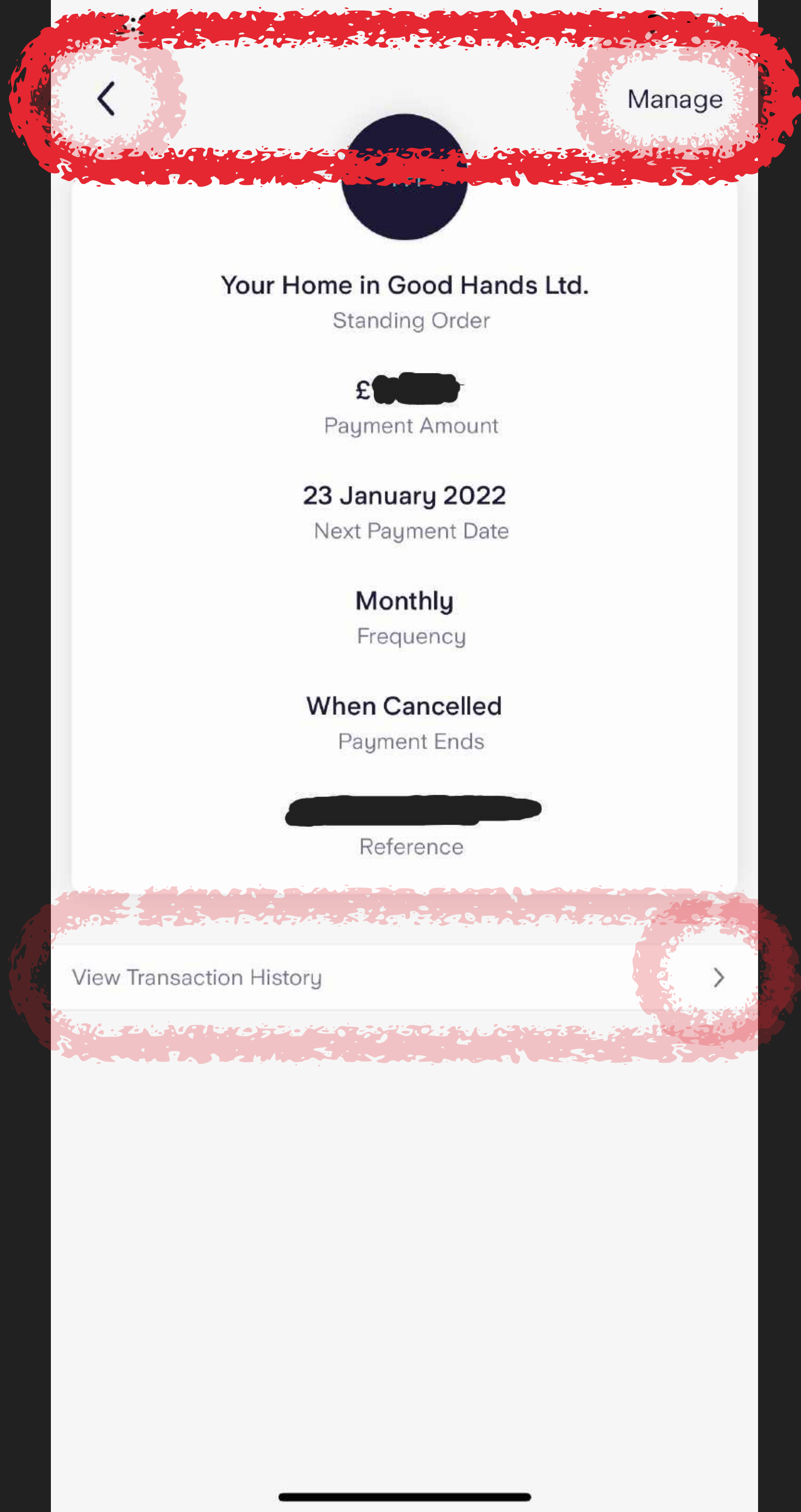
AFFORDANCES ("DOES
SOMETHING")



WEAK SIGNIFIER

**SIGNIFIERS ("MAKE
'DOES SOMETHING'
CLEARER")**

**AFFORDANCES ("DOES
SOMETHING")**



WEAK SIGNIFIER

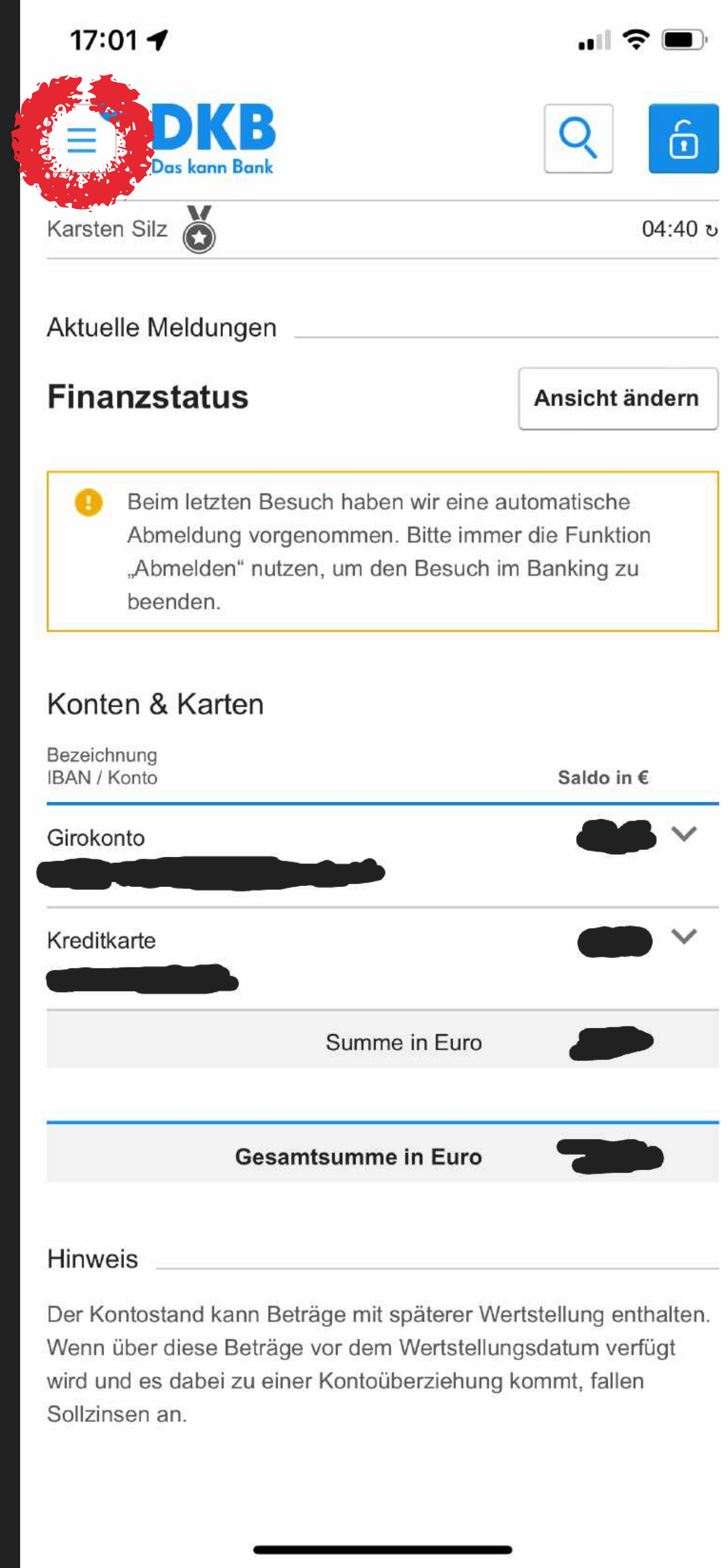
**SIGNIFIERS ("MAKE
'DOES SOMETHING'
CLEARER")**

**AFFORDANCES ("DOES
SOMETHING")**

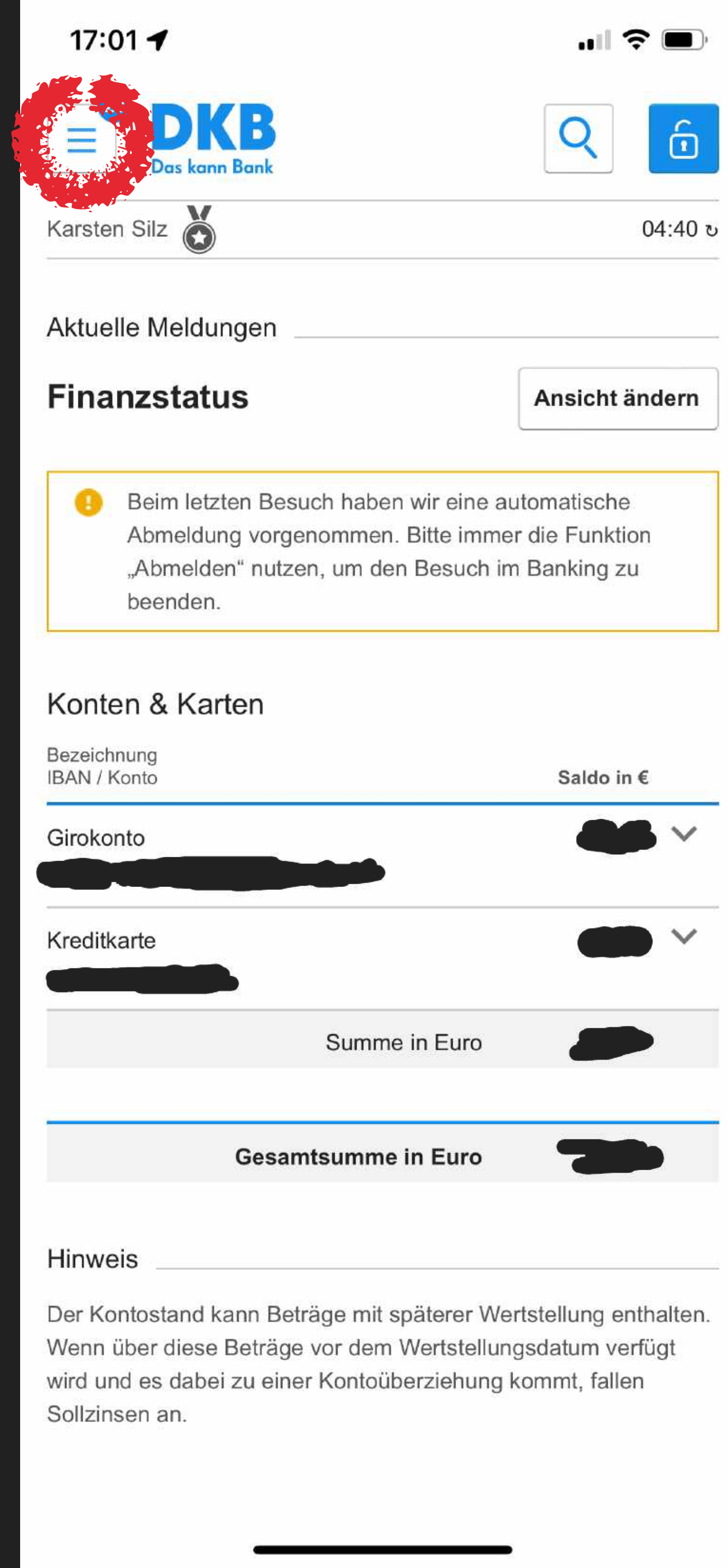
GERMAN BANKING APP

IPHONE

MOST ACTIONS
IN "JUNK
DRAWER" =
EXTRA TAPS



MOST ACTIONS
IN "JUNK
DRAWER" =
EXTRA TAPS



WEAK
SIGNIFIER
WHEN NOT
TECH-SAVVY

...BUT **THIS** WILL WORK!

PHONE FOR ELDERLY





BIG BUTTONS



COLOURFUL

BIG BUTTONS

SYMBOLS



COLOURFUL

BIG BUTTONS

GOT IT!

BOLD NAVIGATION



Alex Smith

Loaded: 3m ago

Important

Additional

BOOKING

From	Thu, 20 Jan, Morning
Until	Sat, 22 Jan, Evening
Frequency	Twice a day

VISIT

Date	Thu, 20 Jan, Evening
Number	2/6

HOW TO GET THERE



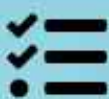
Tell



Map



Route



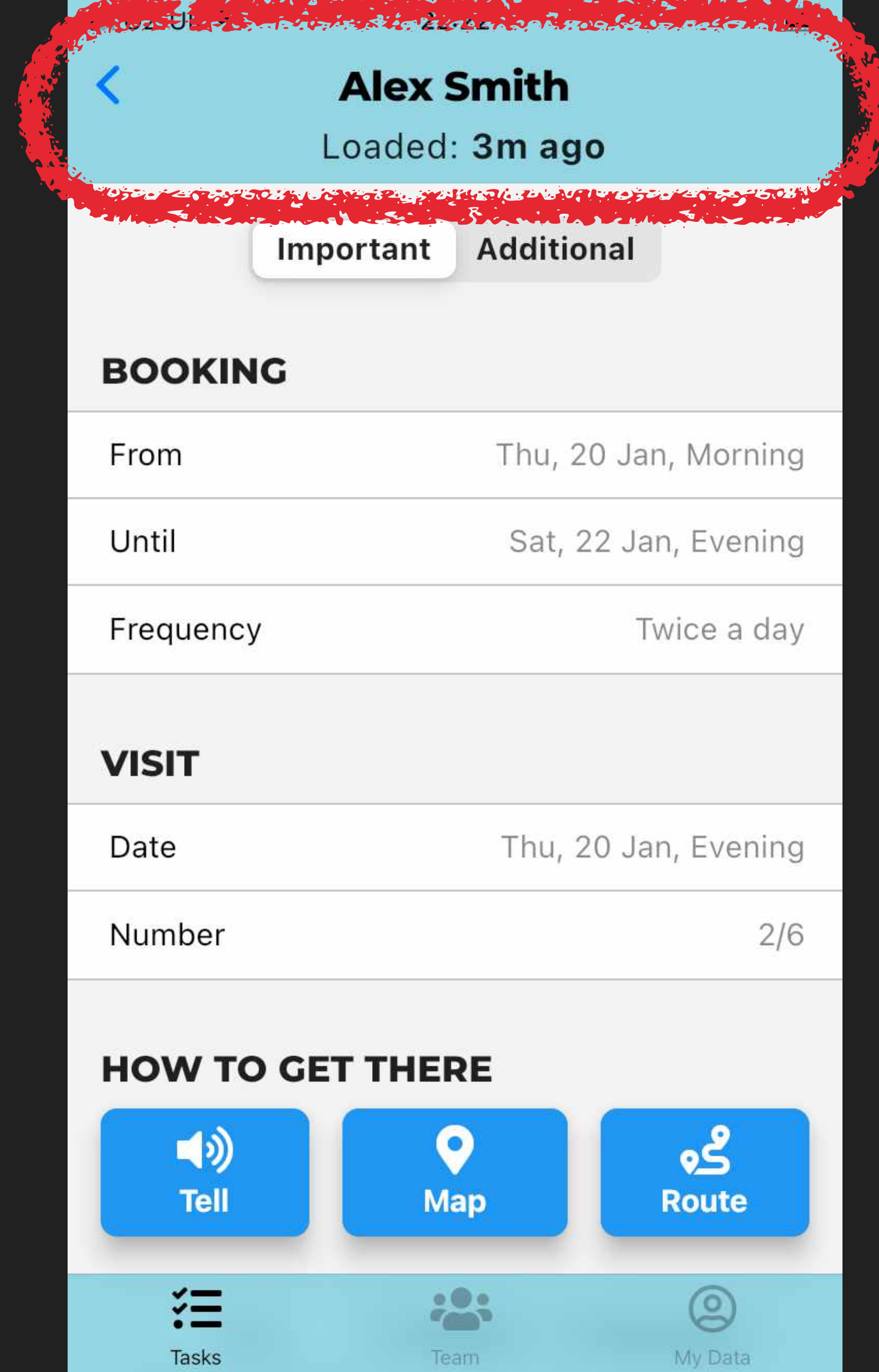
Tasks



Team

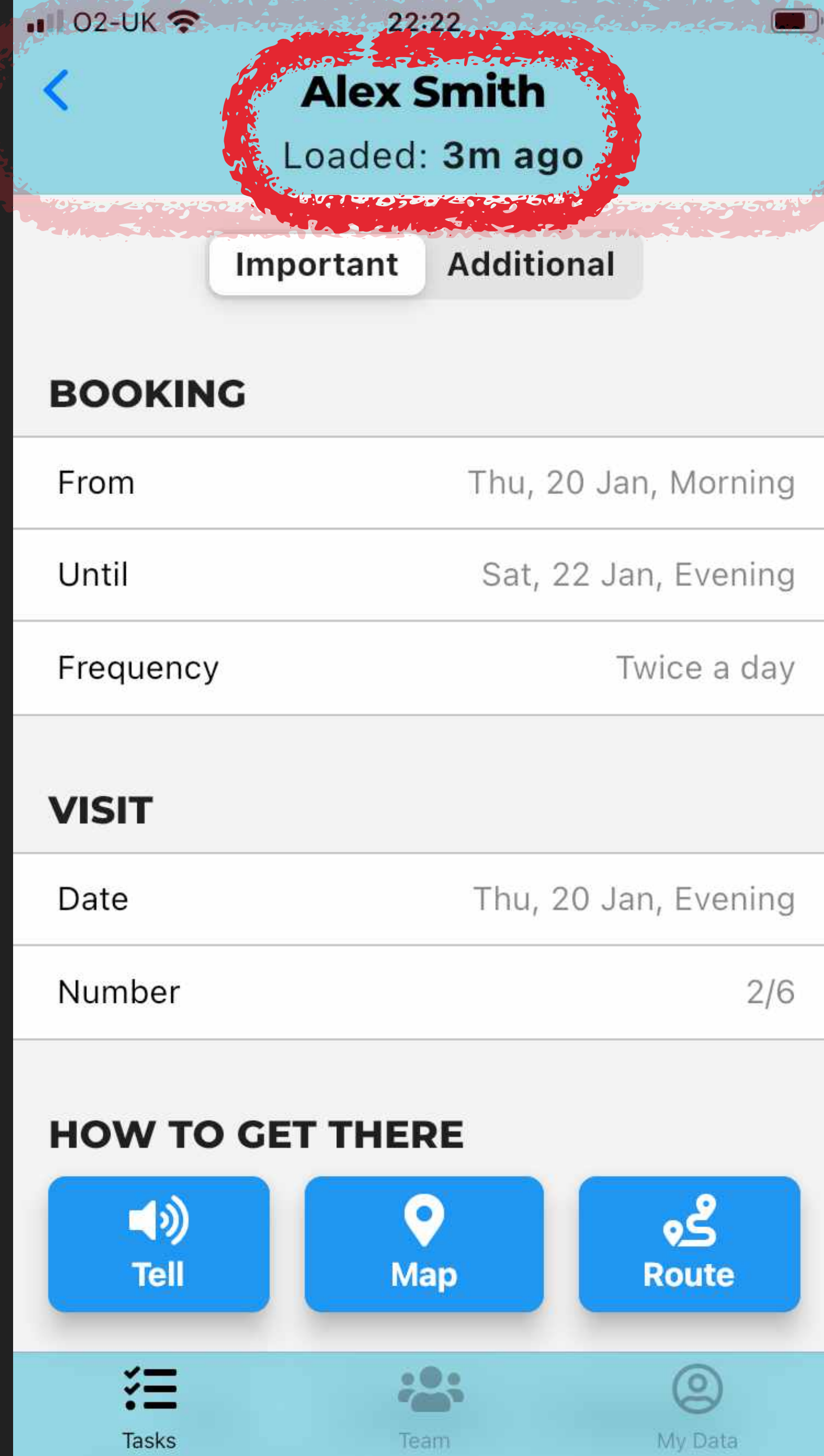


My Data



BRAND COLOR
HIGHLIGHTS
NAV BAR

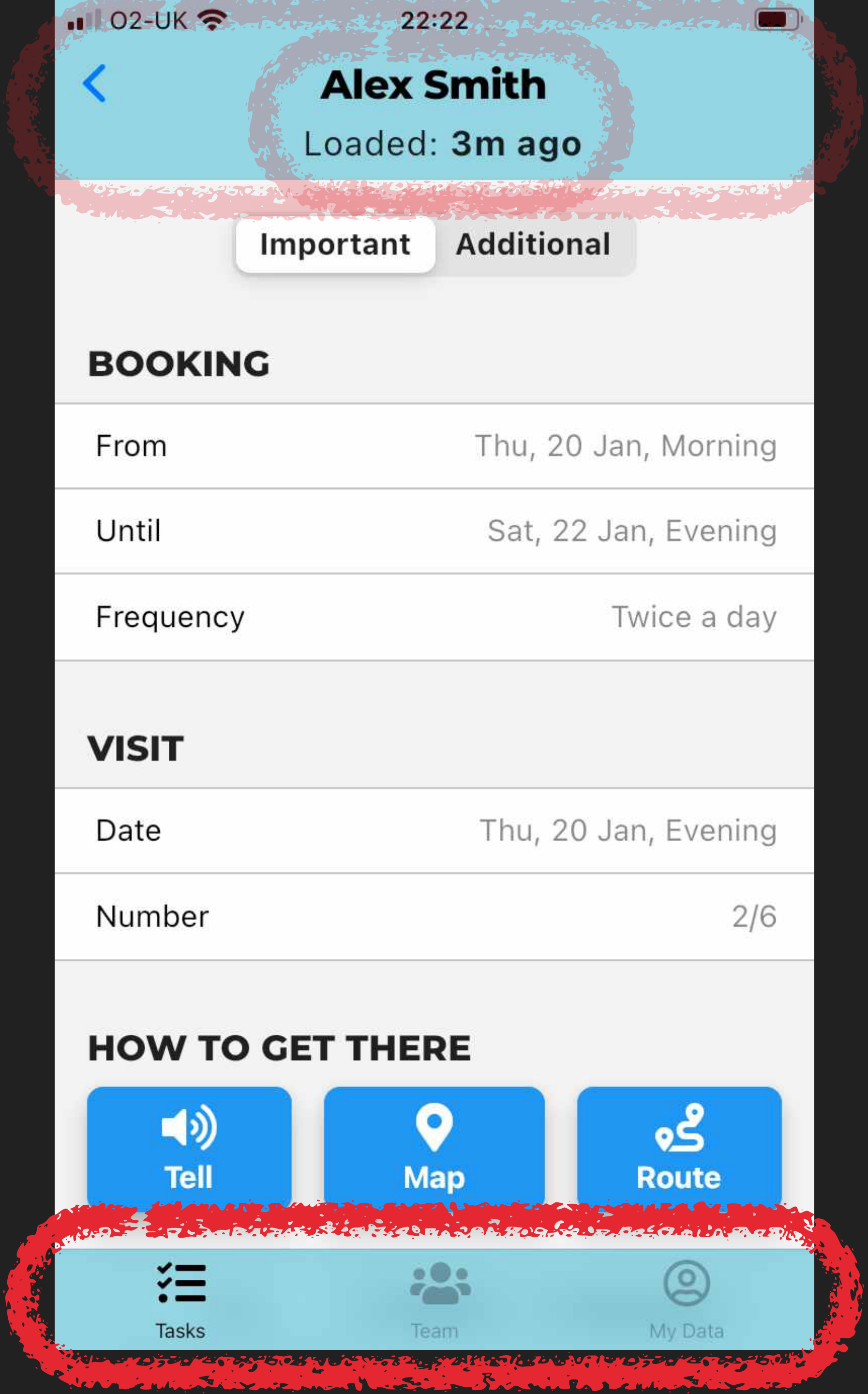
BOLD HEADING
("WHAT'S ON
THIS PAGE?")



BRAND COLOR
HIGHLIGHTS
NAV BAR

BOLD HEADING
("WHAT'S ON
THIS PAGE?")

BRAND COLOR
HIGHLIGHTS
TAB BAR



BRAND COLOR
HIGHLIGHTS
NAV BAR

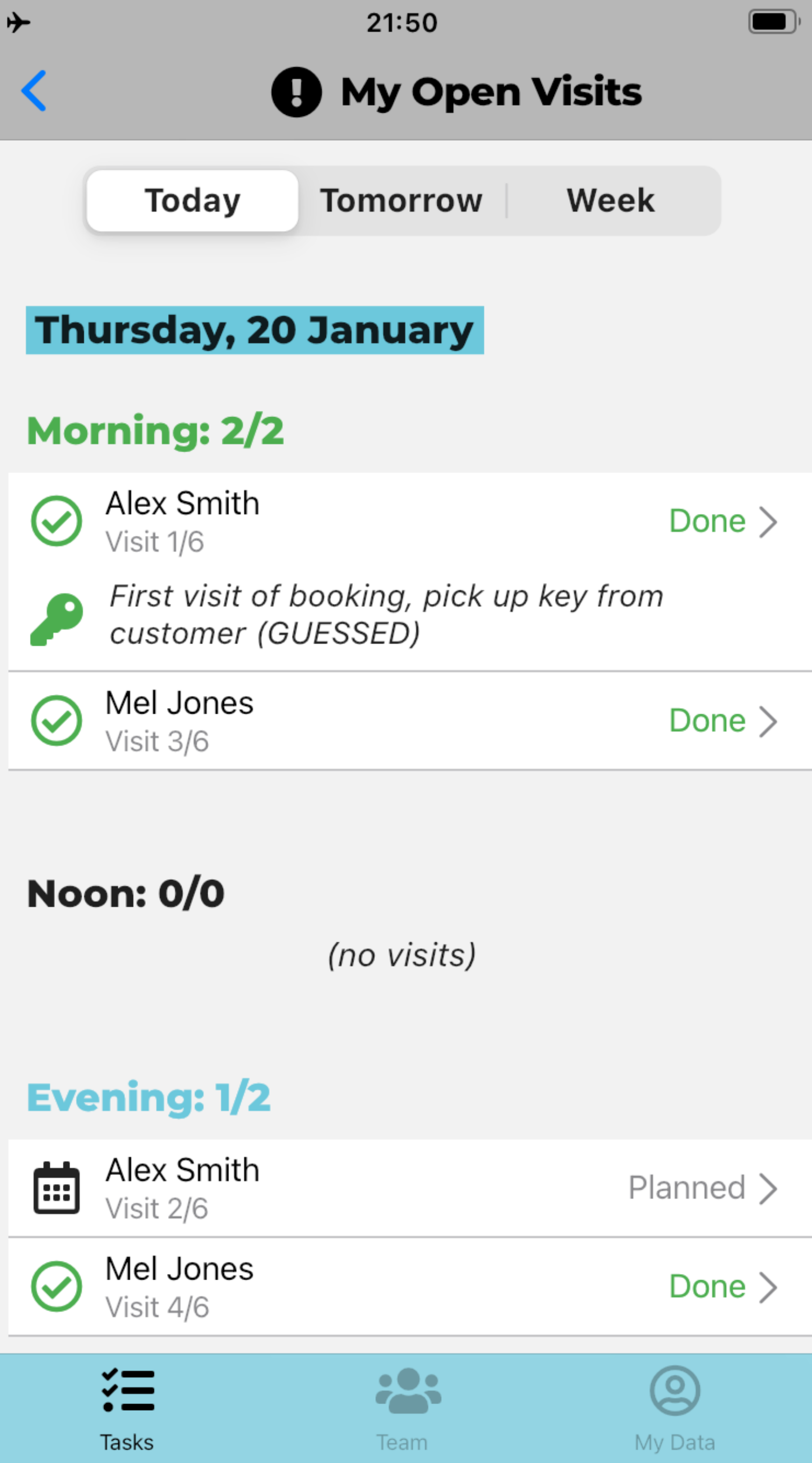
NOT TECH-SAVVY

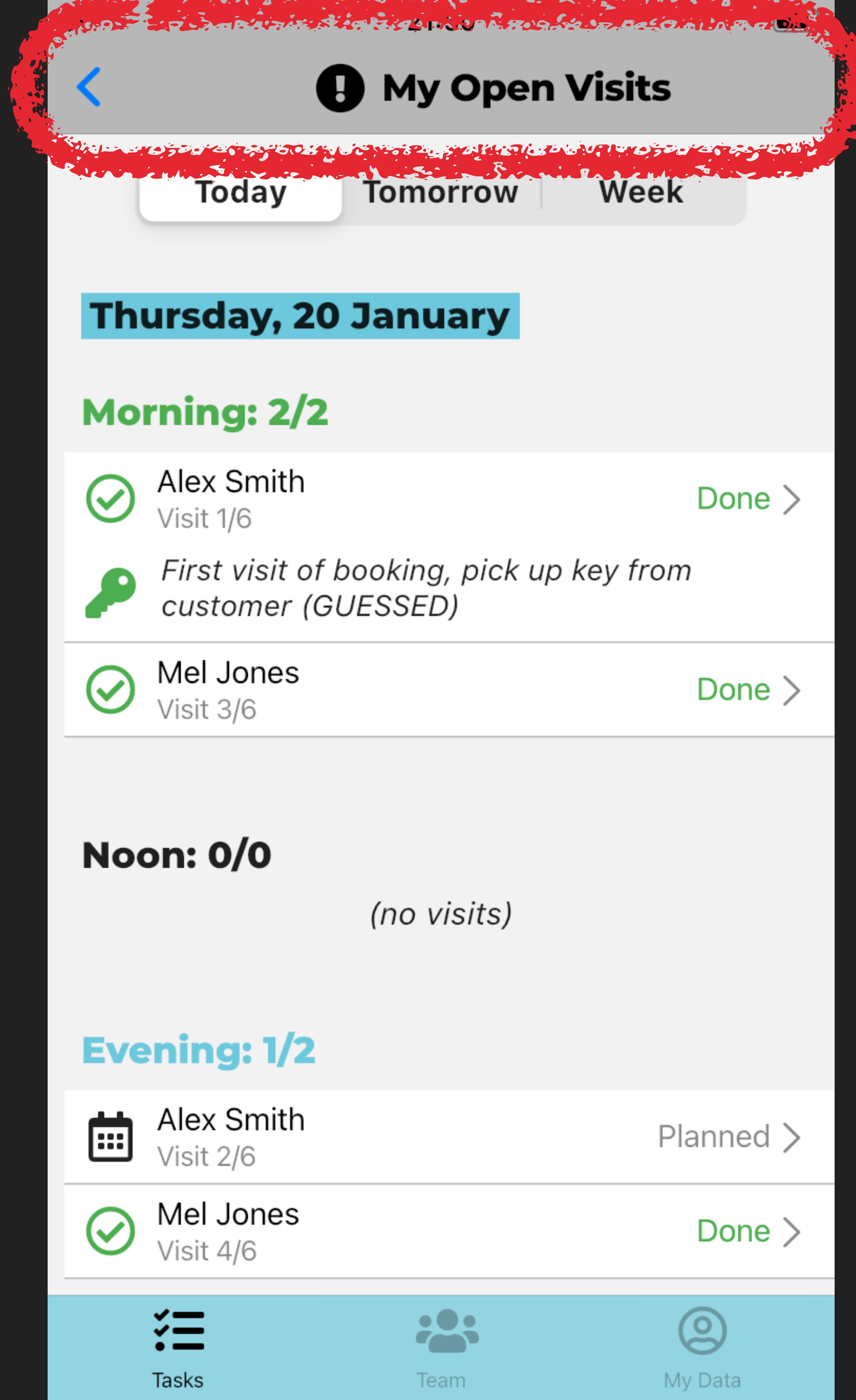
AS FEW CLICKS & AS LITTLE TIME AS POSSIBLE

MOBILE APP NEEDS TO WORK OFFLINE

OUR CUSTOMERS

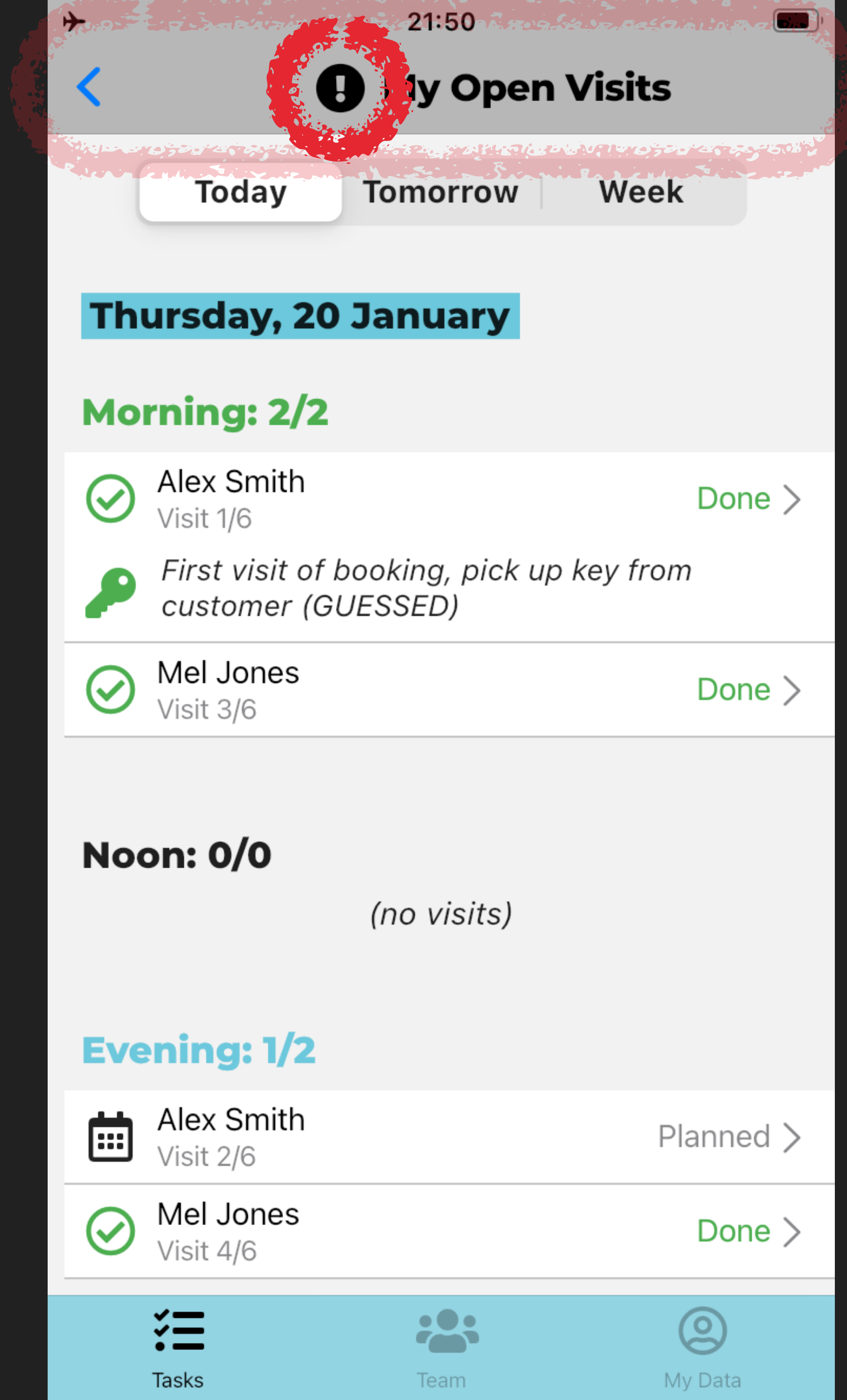
BOLD STATUS





NAV BAR
GREY
WHEN
OFFLINE

"EXPLAIN
BUTTON"



NAV BAR
GREY
WHEN
OFFLINE



22:18



[< My Data](#)

! Saved Changes

Last upload attempt

-

Start/stop visit
Background upload

27m ago ago

Start/stop visit
Background upload

16s ago ago



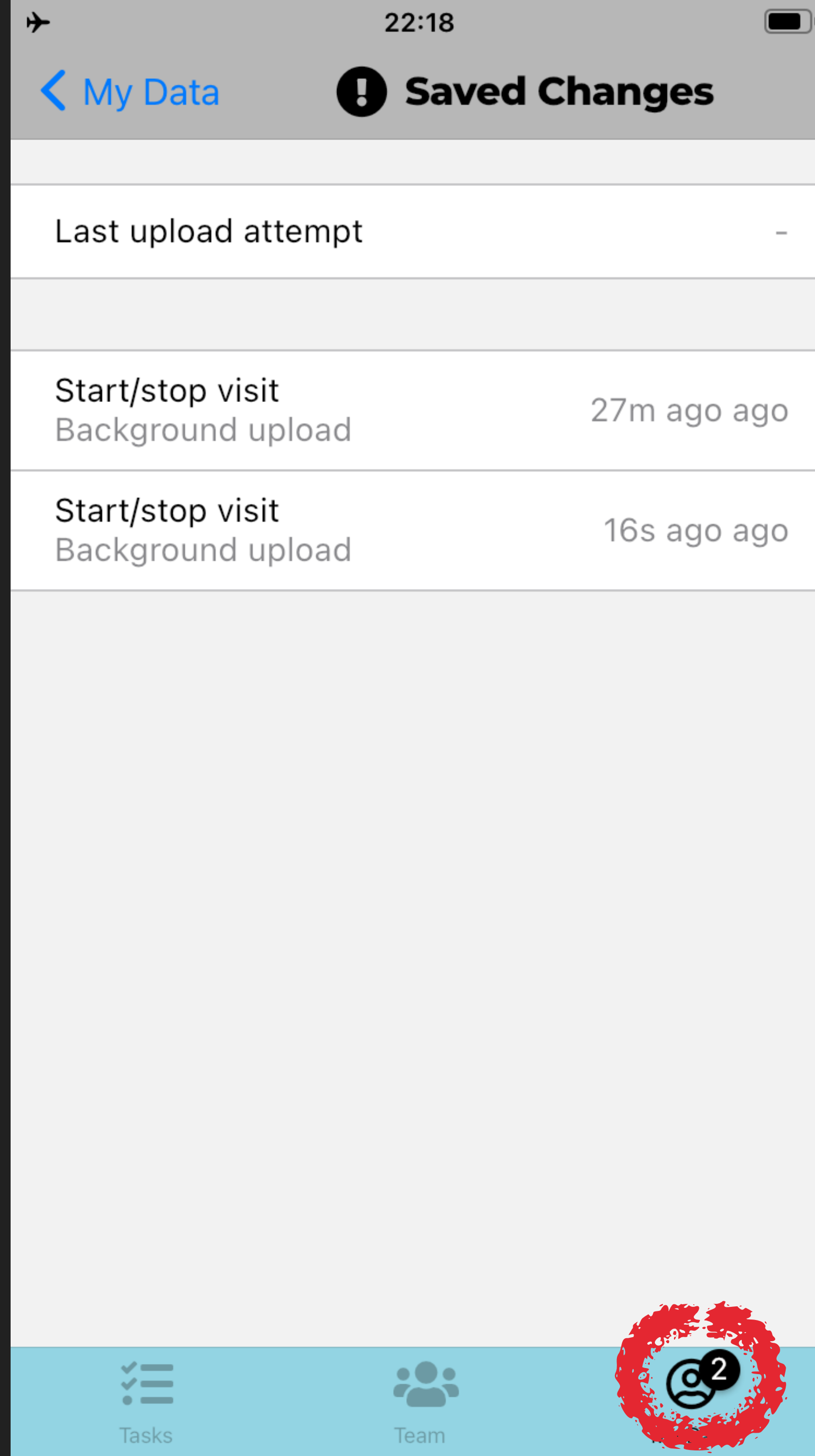
Tasks



Team

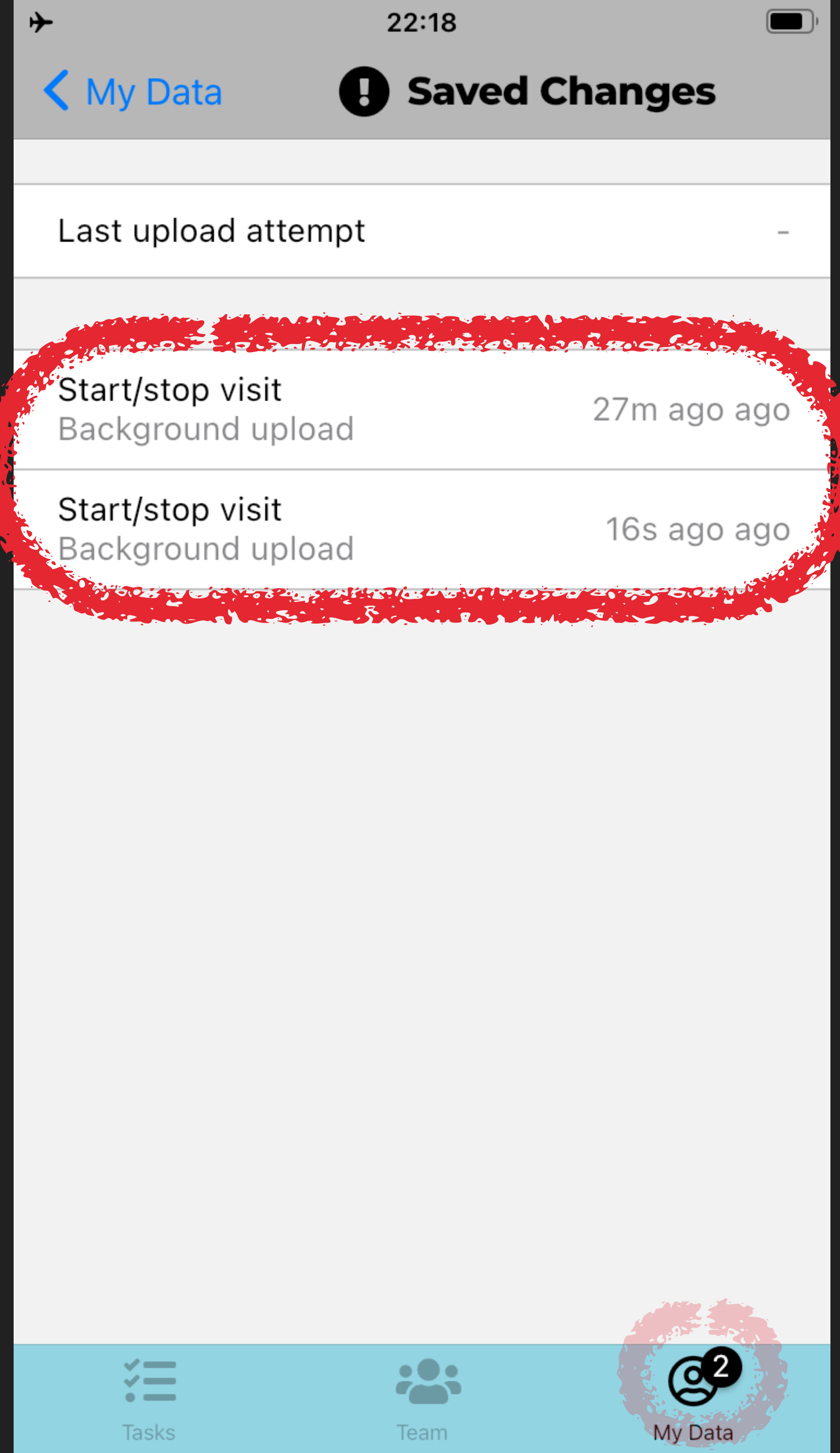


My Data



NUMBER
OF LOCAL
CHANGES

LIST OF LOCAL CHANGES



NUMBER OF LOCAL CHANGES

BOLD BUTTONS

Salutation

first name
Karsten

middle name
middle name

last name
Silz

12:15 ⚙

✕

Edit Profile

Save

Salutation

first name

Karsten

middle name

middle name

last name

Silz

Tasks

Team

My Data

ORANGE:
CHANGES

GREY:
CANCEL/
BACK

12:15 Edit Profile

Salutation

first name
Karsten

middle name
middle name

last name
Silz

Tasks Team My Data

ORANGE:
CHANGES



Tasks



My Open Tasks



Finished Visits

Today



1/2

This week



11/12



My Open Visits



My Finished Tasks



My Finished Visits



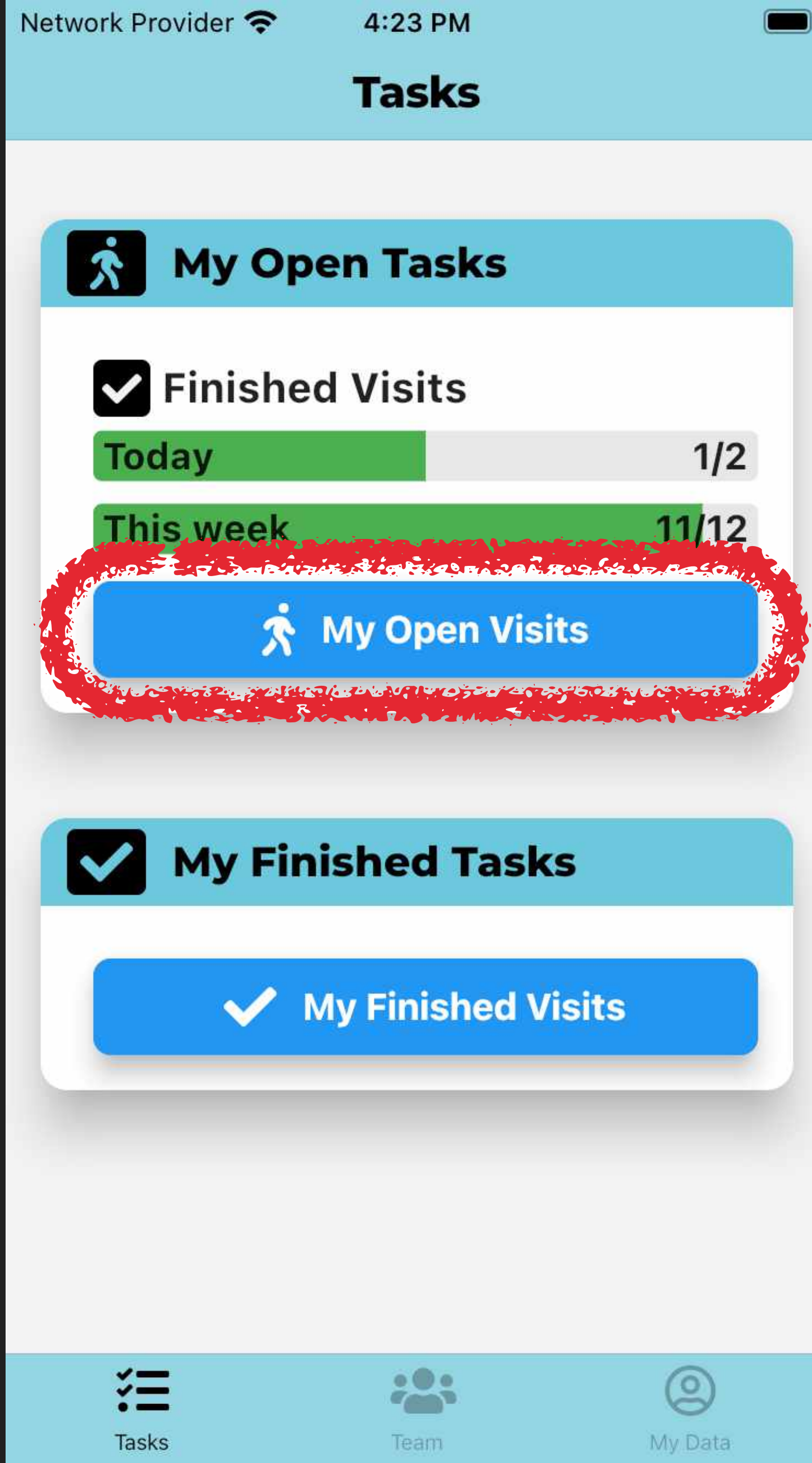
Tasks



Team

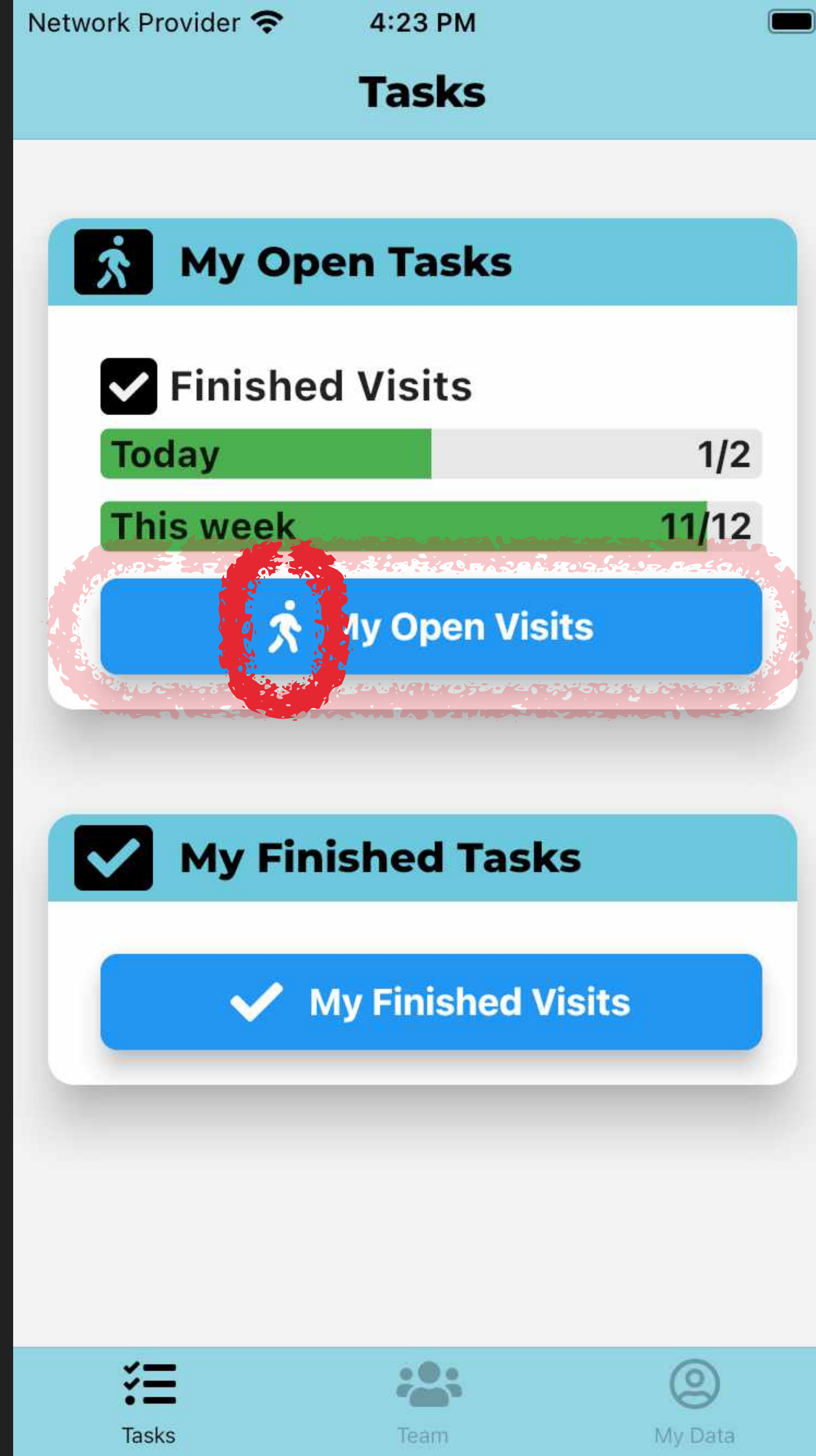


My Data



BLUE:
NAVIGATION

SYMBOL



BLUE:
NAVIGATION

My Data

Edit



Help, Settings & About

Known Issues >

Help >

What's New? >

What's Planned? >

Settings >

About 2022.2.1 >



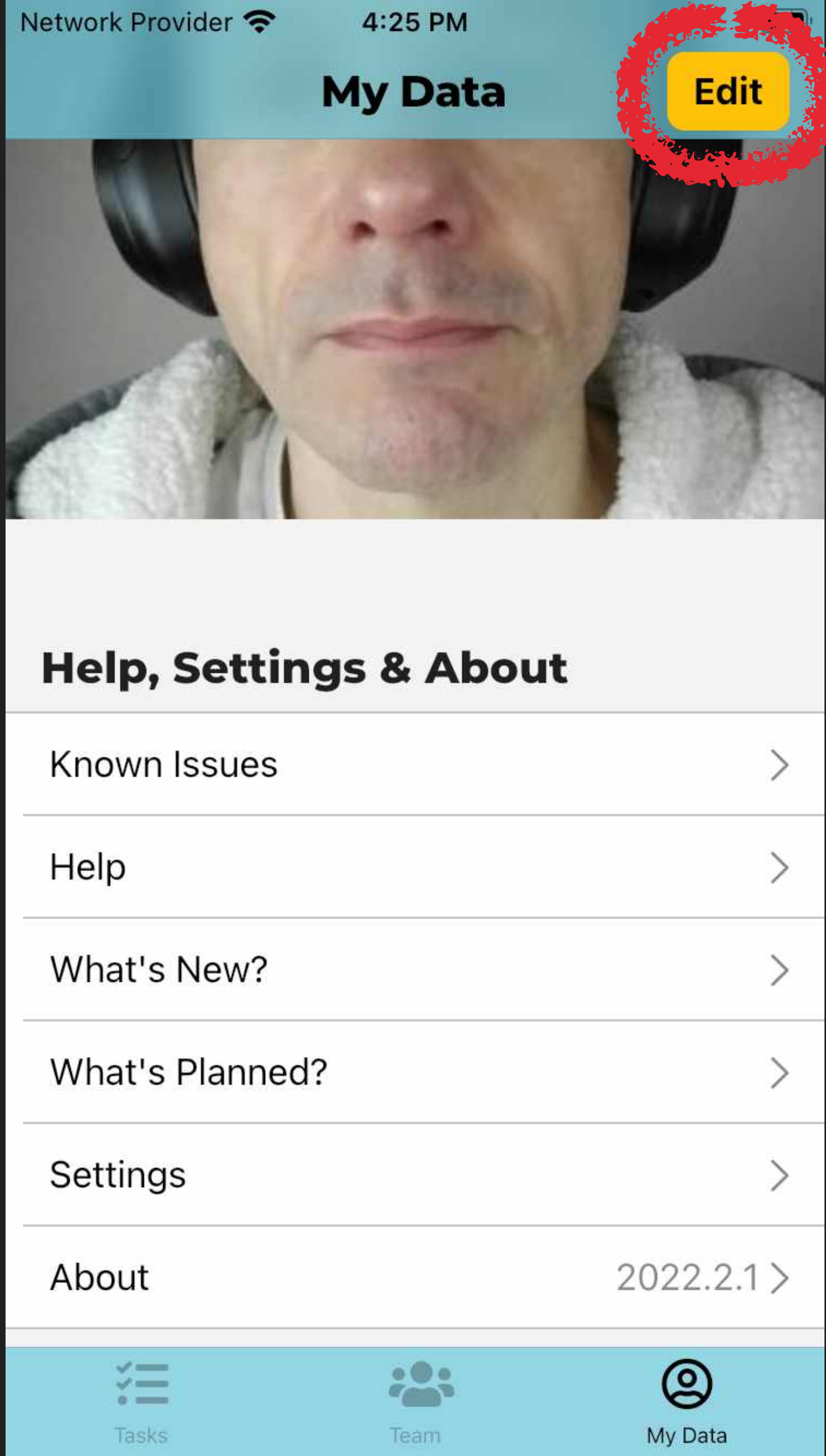
Tasks



Team



My Data



"JUNK
DRAWER" HAS
LABEL ON IOS

NOT TECH-SAVVY

AS FEW CLICKS & AS LITTLE TIME AS POSSIBLE

MOBILE APP NEEDS TO WORK OFFLINE

OUR CUSTOMERS

MINIMIZE TAPS

Team

Team Tasks

Finished Visits Today

Bridget 0/4


Jason 0/5

Karsten 1/2

 Team Tasks

Team Members

Team members: 8

 Team Members



Tasks

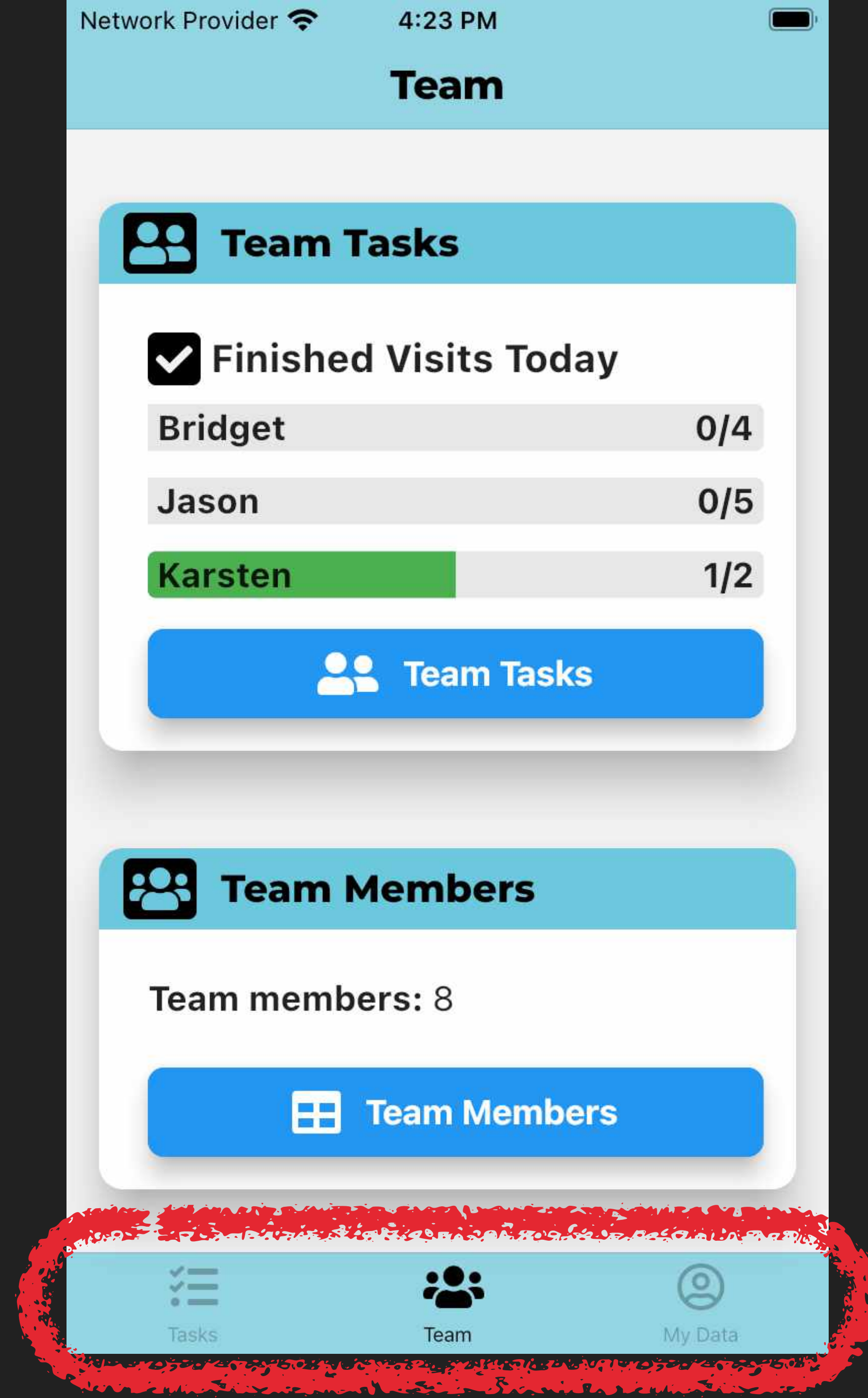


Team



My Data

UP TO **FIVE**
MAIN AREAS
ONE TAP AWAY



UP TO FIVE
MAIN AREAS
ONE TAP AWAY

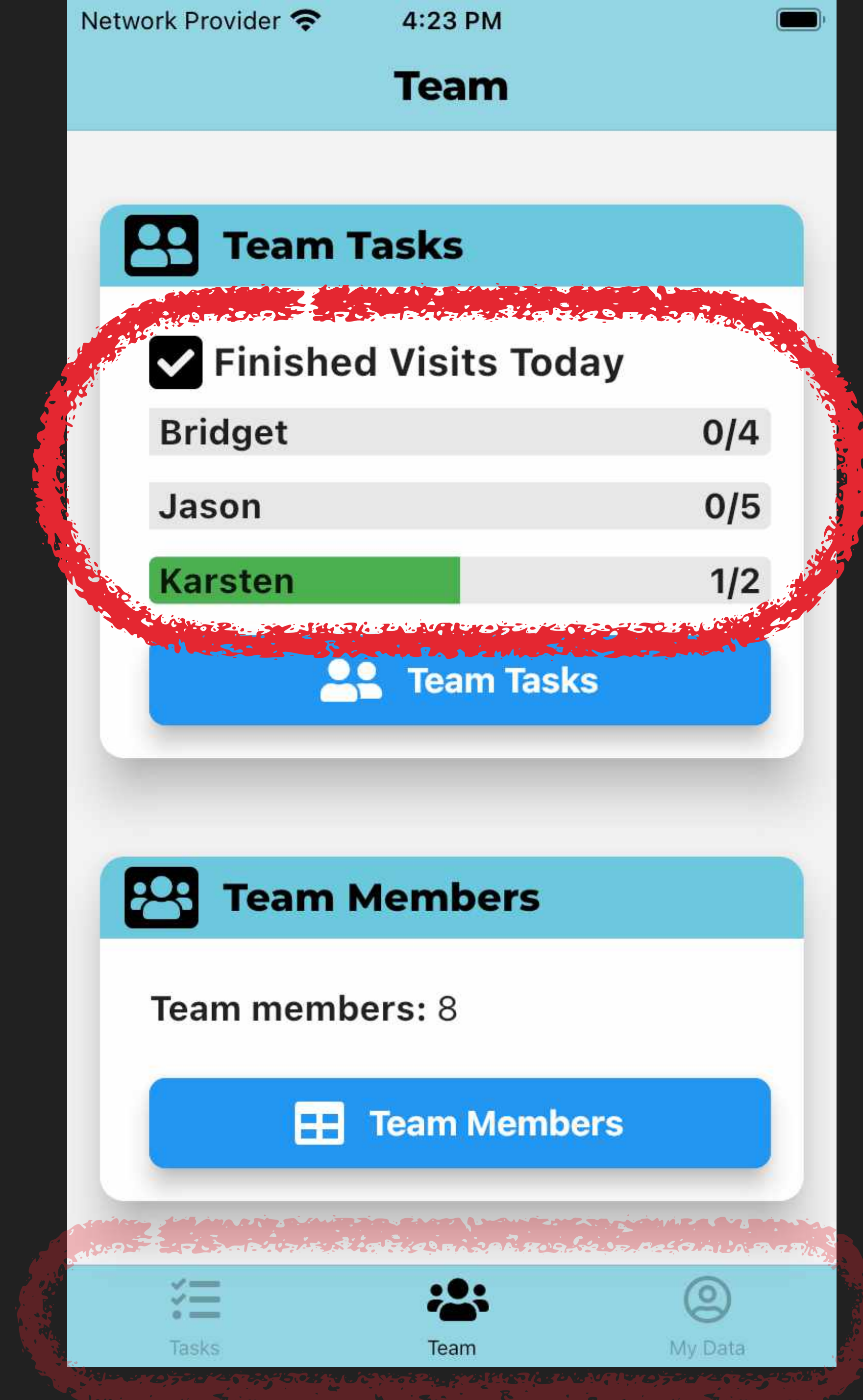





CHART
ENOUGH –
NO TAPPING
"TEAM
TASKS"?

MY TASKS

Tell

Start

Undo

StatusPlanned

HOME

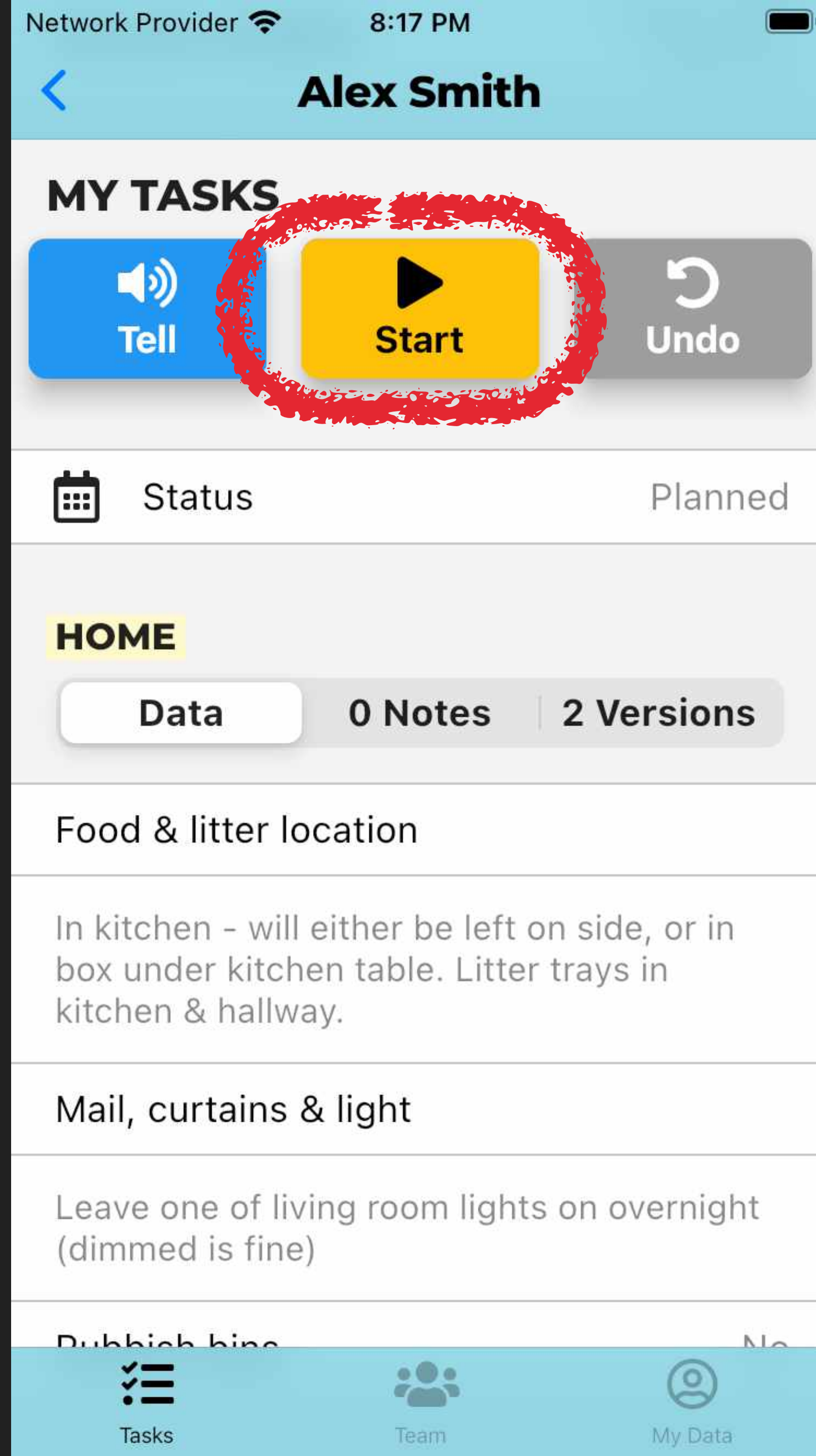
Data

0 Notes

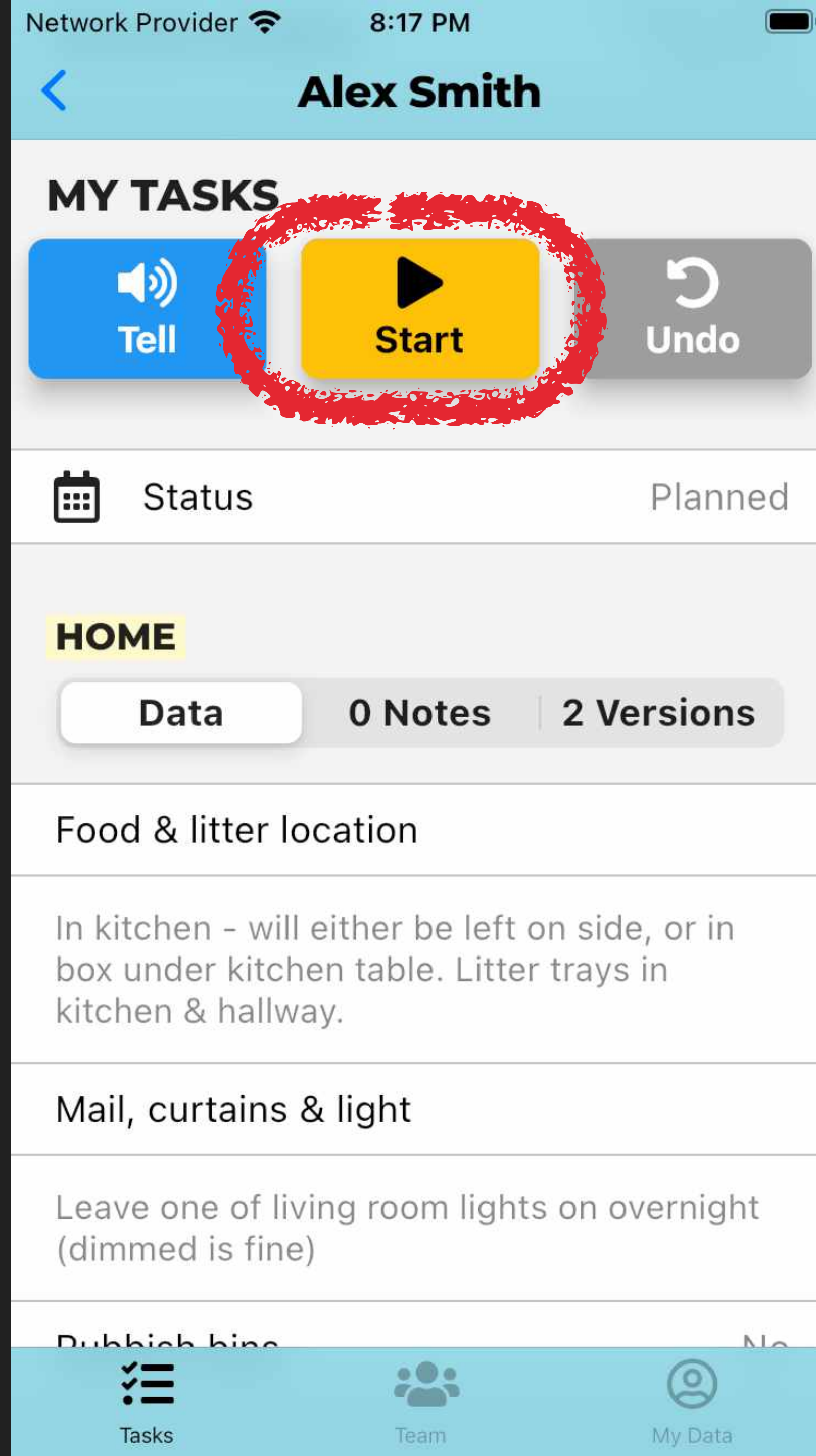
2 Versions

- Food & litter location
- In kitchen - will either be left on side, or in box under kitchen table. Litter trays in kitchen & hallway.
- Mail, curtains & light
- Leave one of living room lights on overnight (dimmed is fine)

STARTS/ STOPS VISIT

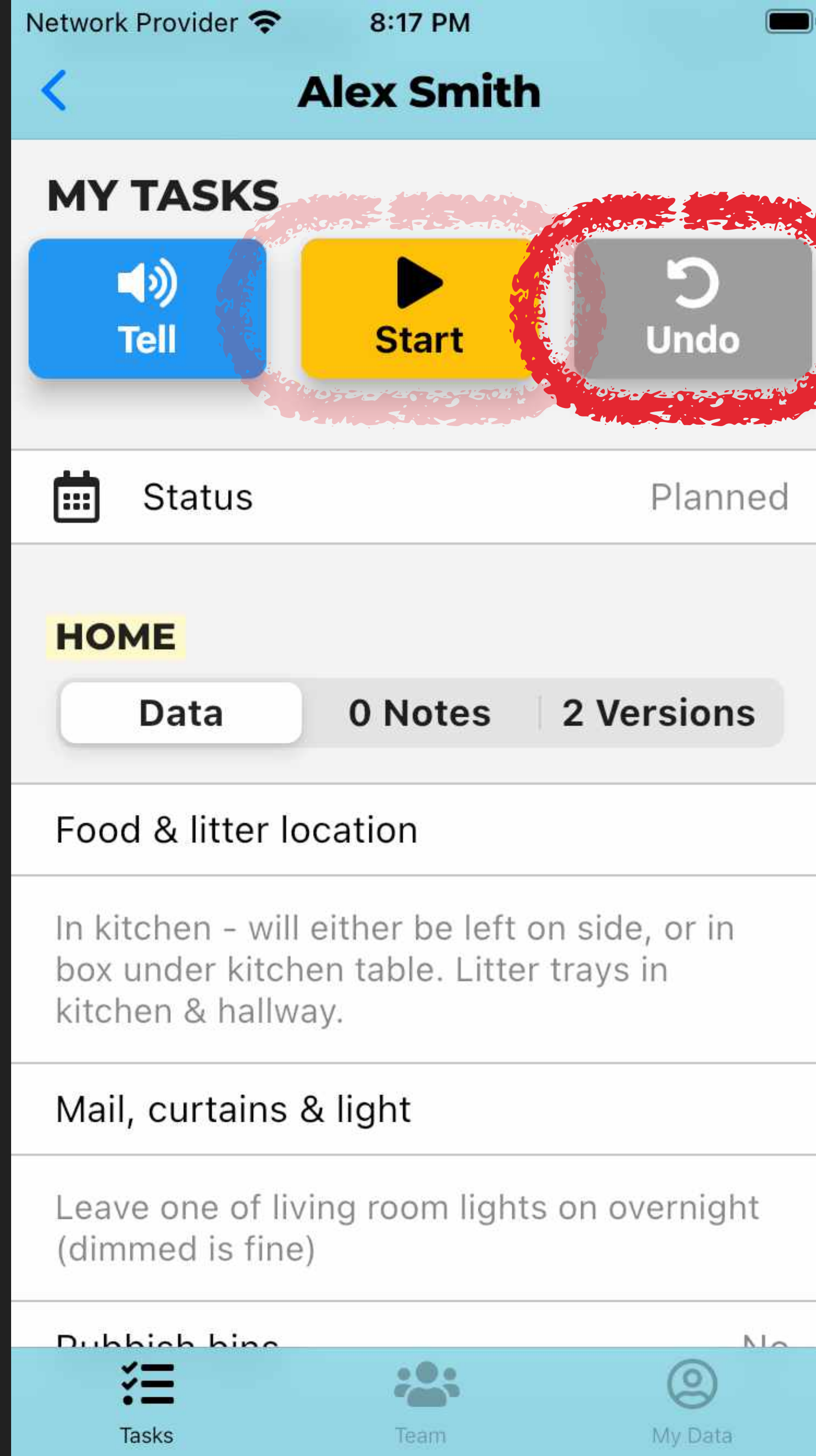


STARTS/
STOPS VISIT



NO "ARE
YOU SURE?"
PROMPT

STARTS/
STOPS VISIT



NO "ARE
YOU SURE?"
PROMPT

UNDO
REVERSES
ACTION

CAREFULLY BREAK
SOME RULES

GOOGLE PLAY STORE
ANDROID

Search for apps & games


For you

Top charts

Children


Categories

Recommended for you




Disney+

4.3 ★




Reuters News

2.5 ★



WhatsApp Messenger


4.3 ★



Mi


4.5 ★

Ads · Suggested for you




LiveScore Bet: Sports Betting

4.1 ★




TikTok: Discover videos, music, lives...

4.4 ★



Audible: Audiobooks & Podcasts


4.7 ★




Re

4.7 ★


Sing duets with top artists




Sing With OLIVIA RODRIGO



Sing With JASON DERULO



Sing With DISNEY'S MOANA



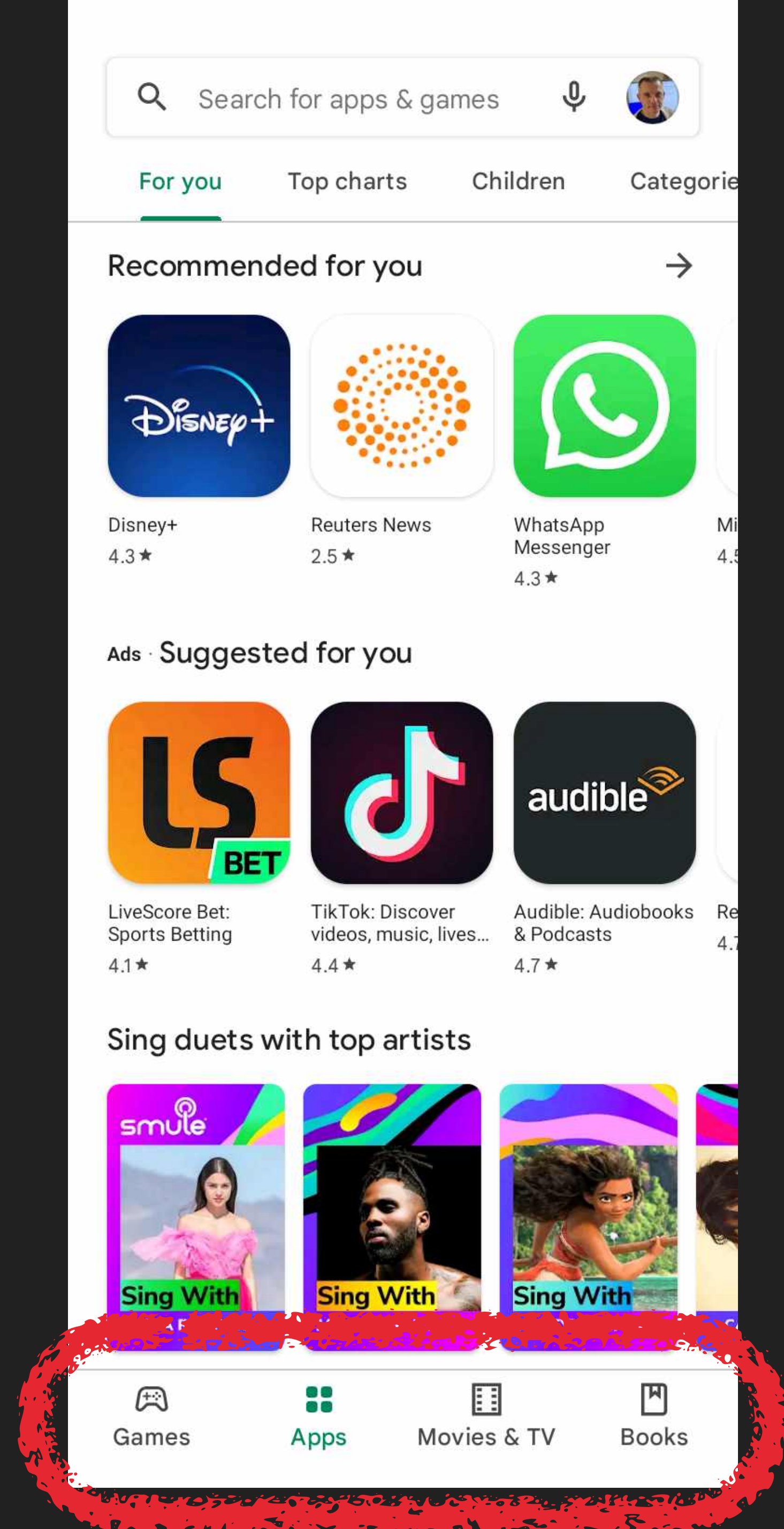
C

Games

Apps

Movies & TV

Books



TAB BAR



Disney+

Disney

In-app purchases

4.3 ★
1M reviews

100M+
Downloads

 Editors' Choice

 Parental guidance

Install



About this app



Stream or download the latest movies, original TV series and more on Disney+.

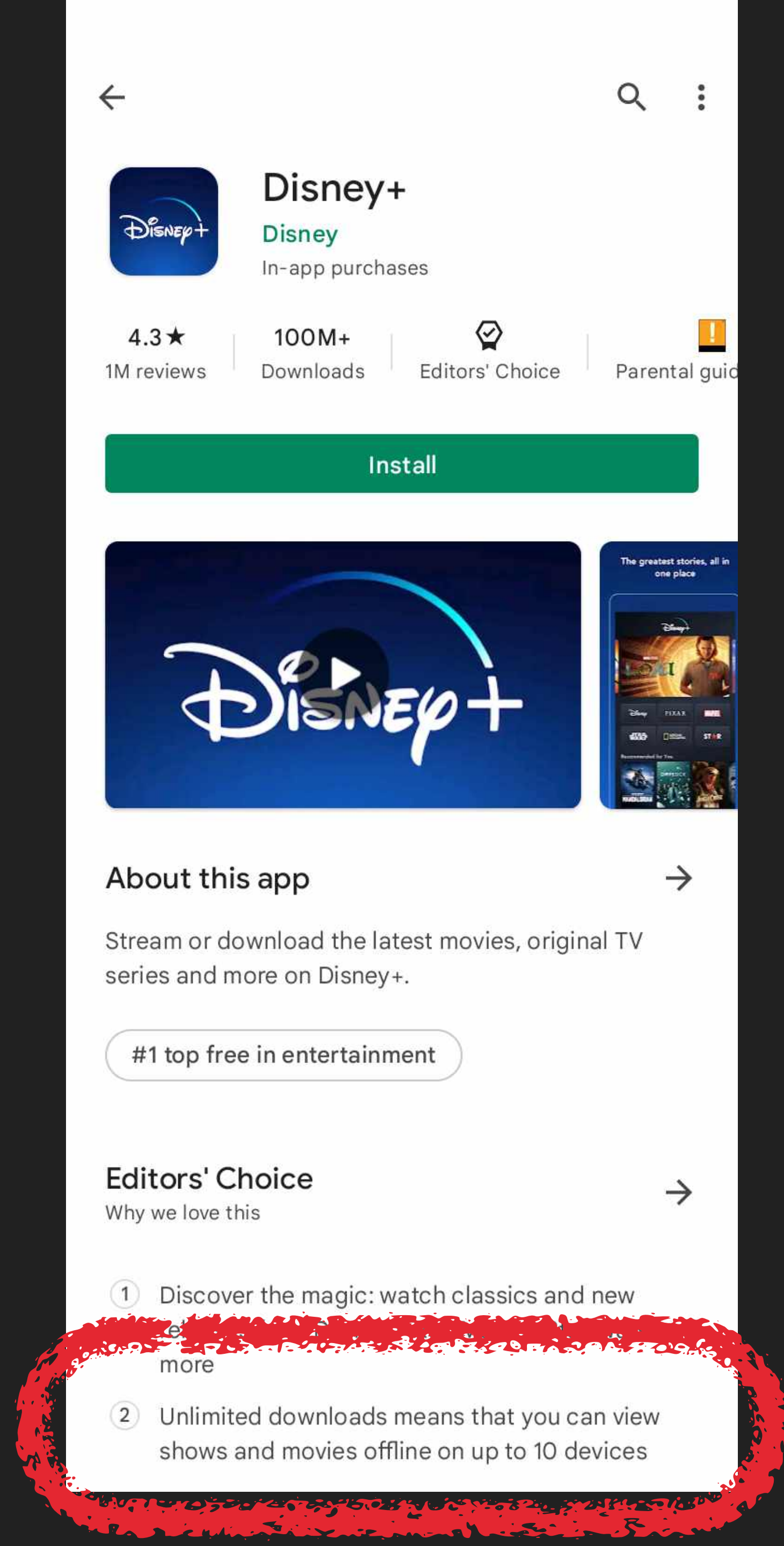
#1 top free in entertainment

Editors' Choice

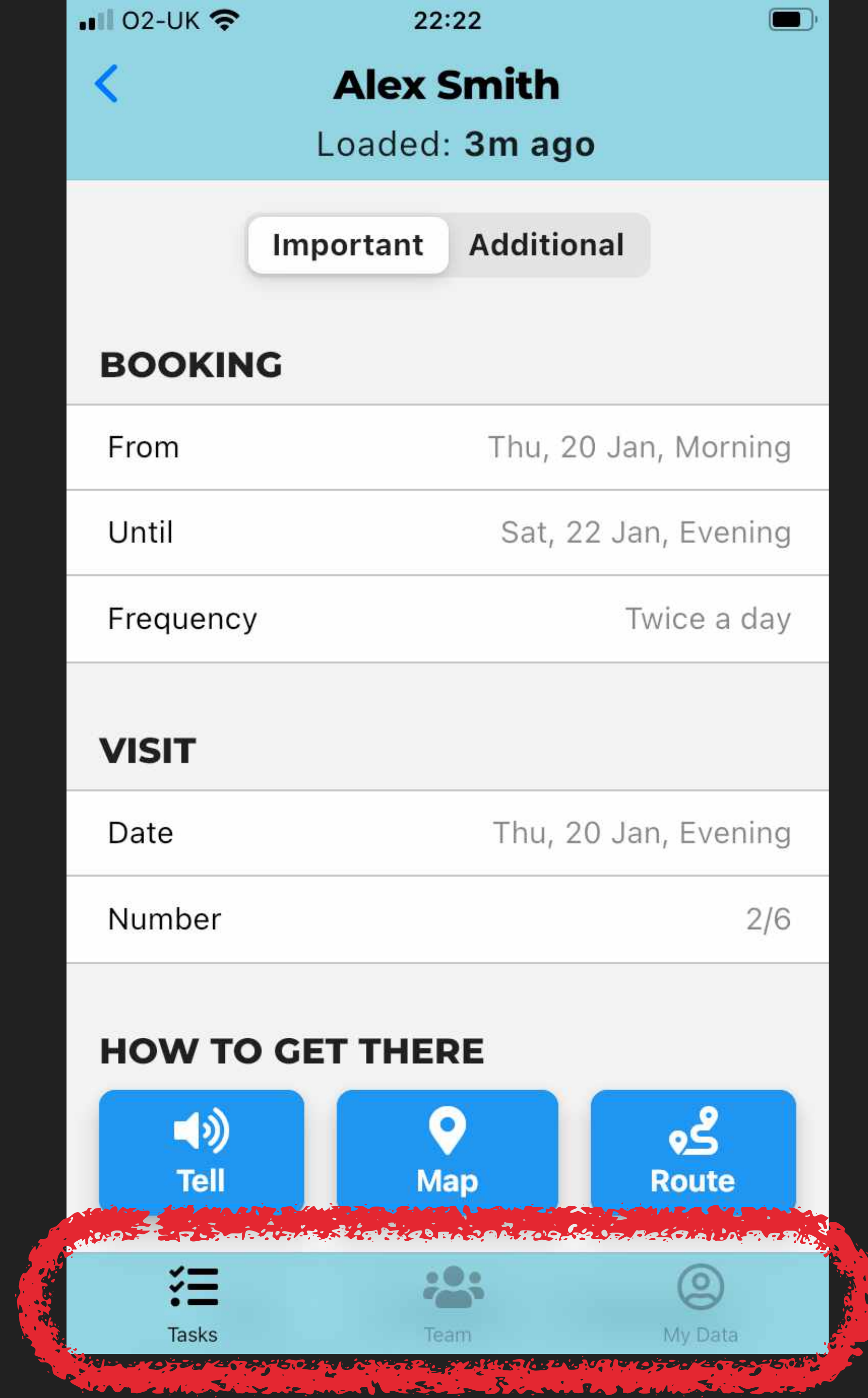


Why we love this

- 1 Discover the magic: watch classics and new releases from Disney, Pixar, Marvel, Star Wars and more
- 2 Unlimited downloads means that you can view shows and movies offline on up to 10 devices



TAB BAR
GONE IN
DETAILS =
MORE
SCREEN AREA



PERMANENT
TAB BAR

DISAPPEARING TAB BAR MAY **CONFUSE** USERS

PERMANENT TAB BAR SAVES **TAPS**

ADVANTAGES OUTWEIGH DISPLAY AREA **GAIN**

WHY BREAK RULE?

WHY "?" IN
"BE BOLD?"

CLOSED BETA USERS LIKE UI...

...BUT WILL FUTURE USERS?

BE BOLD?

BOLD NAVIGATION, STATUS & BUTTONS

MINIMIZE **TAPS**

CAREFULLY **BREAK** SOME RULES

BE BOLD?

~~FLUTTER~~ 👍

~~BE BOLD?~~

~~FIREBASE~~ 👍

BE CONSISTENT

~~THINK DIFFERENT~~

FLUTTER NATIVE UI 🙄

~~ONE SOURCE OF TRUTH~~

BACK TO BASICS

**SHARE BETWEEN WEB &
MOBILE APP?**

BE CONSISTENT

RESPECT PLATFORM PARADIGMS

SHARE **COLORS** (BRAND & BOOTSTRAP)

SHARE **FONTS** (GOOGLE FONTS)

SHARE **SYMBOLS** (FONTAWESOME)

BE CONSISTENT



DETAILS ON
TALK PAGE

BPF.LI/DEV

~~FLUTTER~~ 👍

~~BE BOLD?~~

~~FIREBASE~~ 👍

~~BE CONSISTENT~~

~~THINK DIFFERENT~~

FLUTTER NATIVE UI 🙄

~~ONE SOURCE OF TRUTH~~

BACK TO BASICS

WE ARE **UNKNOWN** BRAND

OUR USERS' **EXPECTATIONS** = "APP
SHOULD WORK LIKE OTHER APPS"

"OTHER APPS" = **IOS** LOOK & FEEL,
MATERIAL ON ANDROID = **NATIVE UI**

FLUTTER NATIVE UI

IOS **INCOMPLETE** (NO TABLE VIEW)

RESPONSIVE LAYOUT: **HARD-CODED** WIDTH VALUES?

DARK MODE TIME-CONSUMING TO IMPLEMENT

MANUALLY SWITCH IOS & MATERIAL UI ELEMENTS

FLUTTER NATIVE UI 🙄

OUR USERS EXPECT **NATIVE UI**

IOS UI **INCOMPLETE**

NATIVE UI TOO **TIME-CONSUMING**

FLUTTER NATIVE UI 🙄

~~FLUTTER~~ 👍

~~BE BOLD?~~

~~FIREBASE~~ 👍

~~BE CONSISTENT~~

~~THINK DIFFERENT~~

~~FLUTTER NATIVE UI~~ 😞

~~ONE SOURCE OF TRUTH~~

BACK TO BASICS

USE **OTHER** PEOPLE'S COMPONENTS

WRITE OUR **OWN** COMPONENTS

VERTICAL & HORIZONTAL **LAYERS**

BACK TO BASICS



DETAILS ON
TALK PAGE

BPF.LI/DEV

~~FLUTTER~~ 👍

~~BE BOLD?~~

~~FIREBASE~~ 👍

~~BE CONSISTENT~~

~~THINK DIFFERENT~~

~~FLUTTER NATIVE UI~~ 😞

~~ONE SOURCE OF TRUTH~~

~~BACK TO BASICS~~

SUMMARY

FLUTTER 👍

GOOGLE'S **CROSS-PLATFORM**
UI TOOLKIT

FIREBASE 👍

MOBILE, WEB, DESKTOP,
EMBEDDED

THINK DIFFERENT

LESS COMPELLING ON WEB &
DESKTOP

ONE SOURCE OF TRUTH

USE IT **AGAIN** FOR MOBILE 👍

FLUTTER 👍

GOOGLE'S "BACK-END AS A
SERVICE"

FIREBASE 👍

MANY FREE SERVICES, SOME
PAID

THINK DIFFERENT

GOOD FLUTTER INTEGRATION

ONE SOURCE OF TRUTH

WOULD USE IT AGAIN 👍

FLUTTER 👍

FIREBASE 👍

THINK DIFFERENT

ONE SOURCE OF TRUTH

MOBILE IS POWERFUL

STORE DATA LOCALLY

LOAD & SAVE DATA IN
BACKGROUND

FLUTTER 👍

FIREBASE 👍

THINK DIFFERENT

ONE SOURCE OF TRUTH

ONE GLOBAL DATA STORE IN APP

DATA STORE UPDATES =>
ENTIRE UI UPDATES

NO DUPLICATES IN DATA STORE

WORKS OFFLINE – BUT SERVER
CODE DUPLICATION

BOLD NAVIGATION, STATUS &
BUTTONS

MINIMIZE **TAPS**

CAREFULLY **BREAK** SOME RULES

BE BOLD?

BE CONSISTENT

FLUTTER NATIVE UI 🙄

BACK TO BASICS

RESPECT PLATFORM PARADIGMS

BE BOLD?

SHARE **COLORS** (BRAND &
BOOTSTRAP)

BE CONSISTENT

SHARE **FONTS** (GOOGLE FONTS)

FLUTTER NATIVE UI 🙄

SHARE **SYMBOLS**
(FONTAWESOME)

BACK TO BASICS

OUR USERS EXPECT **NATIVE UI**

IOS UI **INCOMPLETE**

NATIVE UI TOO **TIME-
CONSUMING**

BE BOLD?

BE CONSISTENT

FLUTTER **NATIVE UI** 🙄

BACK TO BASICS

USE **OTHER** PEOPLE'S
COMPONENTS

WRITE OUR **OWN** COMPONENTS

VERTICAL & HORIZONTAL
LAYERS

BE BOLD?

BE CONSISTENT

FLUTTER NATIVE UI 🙄

BACK TO BASICS

FLUTTER 👍

BE BOLD?

FIREBASE 👍

BE CONSISTENT

THINK DIFFERENT

FLUTTER NATIVE UI 🙄

ONE SOURCE OF TRUTH

BACK TO BASICS

**WRITE BETTER FLUTTER
MOBILE APPS!**

*The
End*



SLIDES & VIDEOS

EXTRA INFORMATION

GET STARTED!

FEEDBACK

BPF.LI/DEV

[HTTPS://COMMONS.WIKIMEDIA.ORG/WIKI/FILE:SPREADSHEET.PNG](https://commons.wikimedia.org/wiki/File:Spreadsheet.png)

[HTTPS://COMMONS.WIKIMEDIA.ORG/WIKI/FILE:FORTNITE AT E3 2018 \(41868702965\).JPG](https://commons.wikimedia.org/wiki/File:Fortnite_at_E3_2018_(41868702965).jpg)

[HTTPS://COMMONS.WIKIMEDIA.ORG/WIKI/FILE:TIK TOK \(2\).PNG](https://commons.wikimedia.org/wiki/File:TikTok_(2).png)

[HTTPS://M.MEDIA-AMAZON.COM/IMAGES/I/619RM08UWZL. AC SX679 .JPG](https://m.media-amazon.com/images/I/619RM08UWZL.AC.SX679.JPG)

[HTTPS://UPLOAD.WIKIMEDIA.ORG/WIKIPEDIA/COMMONS/THUMB/5/5D/
FLAG OF ENGLAND %283-2%29.SVG/720PX-FLAG OF ENGLAND %283-2%29.SVG.PNG](https://upload.wikimedia.org/wikipedia/commons/thumb/5/5D/Flag_of_England_%283-2%29.svg/720px-Flag_of_England_%283-2%29.svg.png)

[HTTPS://PXHERE.COM/EN/PHOTO/449196](https://pxhere.com/en/photo/449196)

IMAGES