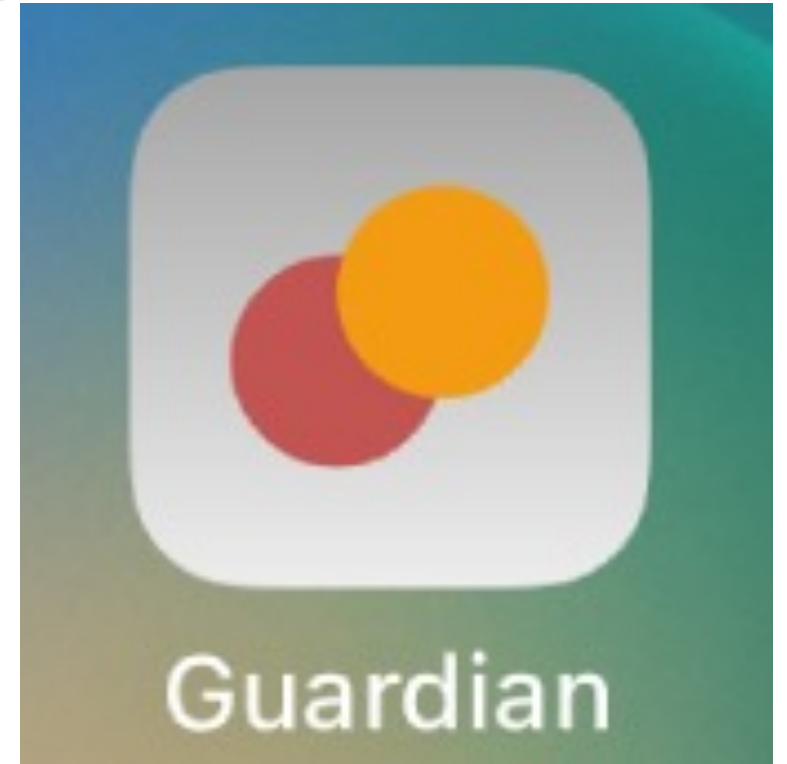# Guardian

## --Personal Safety Mobile App

Siyu Yao (April) - 20216468
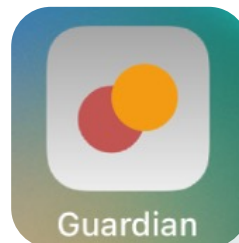

Guardian

# What drives the mission?

- Sarah Everard murder (Mar. 2021)[1]

  - Back home alone at night

  - The next day, *WalkSafe+* was

    downloaded by 500,000 people[2]

- Sabina Nessa death (Sep. 2021) [3]

  - On her way to see friends, 5-min walk

- Existing solutions lack effectiveness

*Table 1: Personal safety apps and their selected critical weakness*

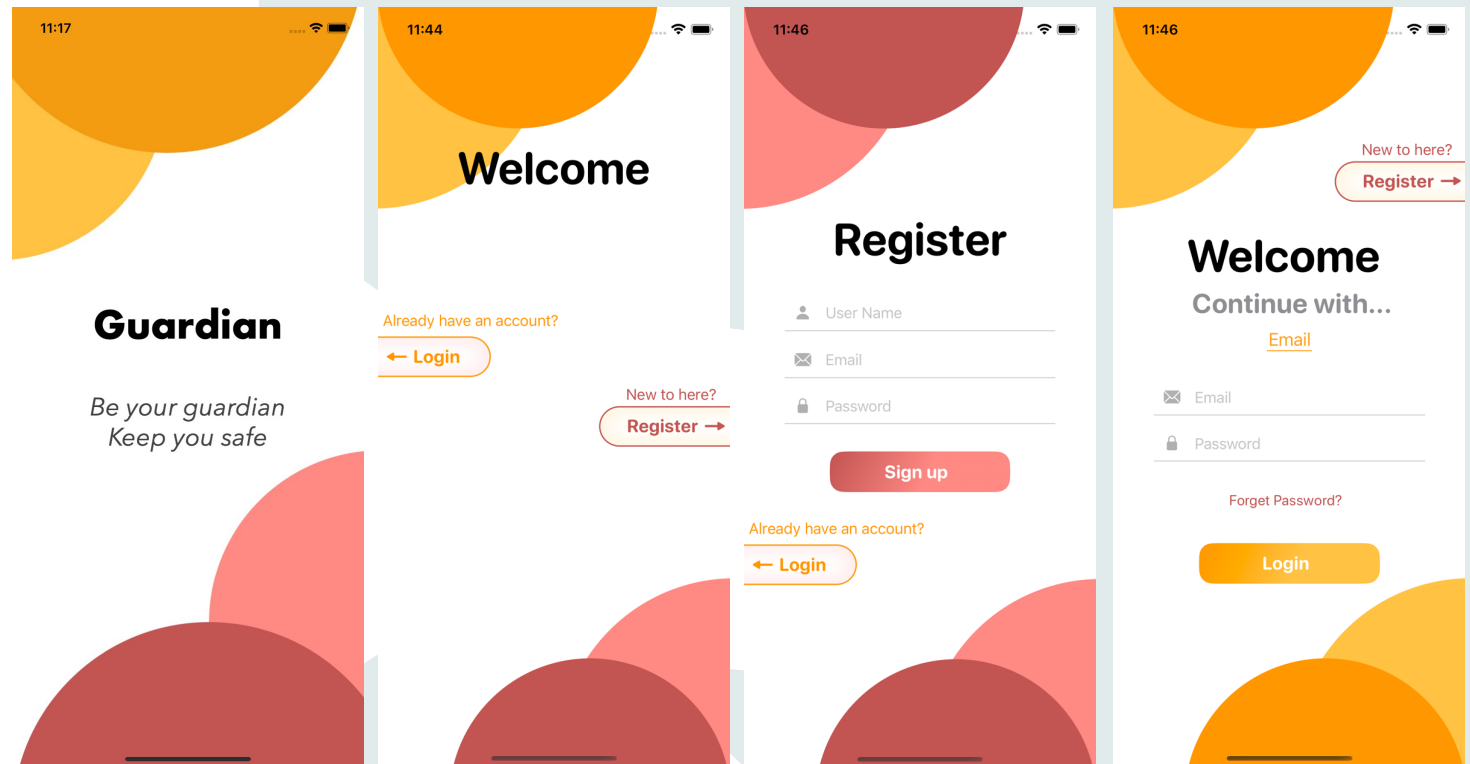| Example Apps | Weakness | Description |
|---|---|---|
| (All) | Missing function | The apps are unable to publish and report missing people. |
| Noonlight, Hooot | Registration limitation | The apps are unable to verify the phone number, only offering registration in specific regions |
| Parachute, Ursafe | Subscription | The apps are strongly dependent on full subscriptions for key functionality, only limited use time or limited contacts in the free trial. |
| Apple emergency SOS, WalkSafe+ | Inconvenient SOS | The app's SOS button is inconspicuously located or needs to be learned before use. |
| SafeUp | No emergency help | The app only has safety checks, do not offer emergency help, cannot contact to trusts or authority. |

# Superpowers at Your Fingertips:
## Meet Guardian

Onboarding

- launch screen

- welcome screen

- register / login

Account

- profile management

- audio management

- log out / delete

demo account:
test03@test.com  123456  5555

# Superpowers at Your Fingertips:
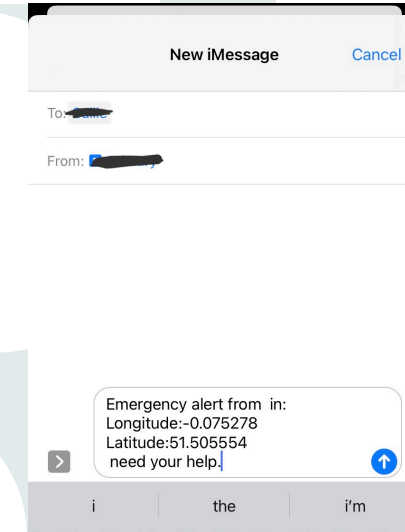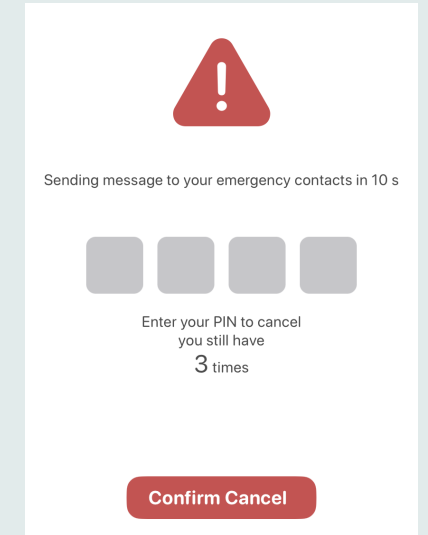## Meet Guardian

<u>Contacts</u>
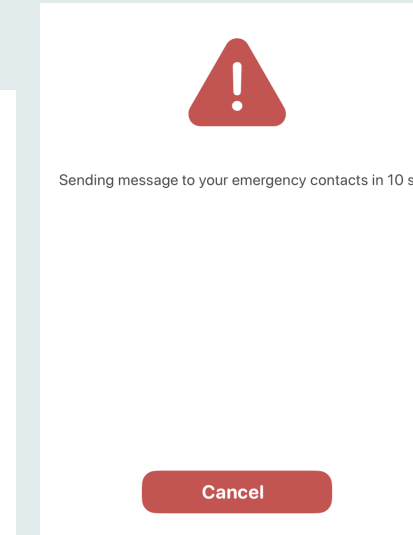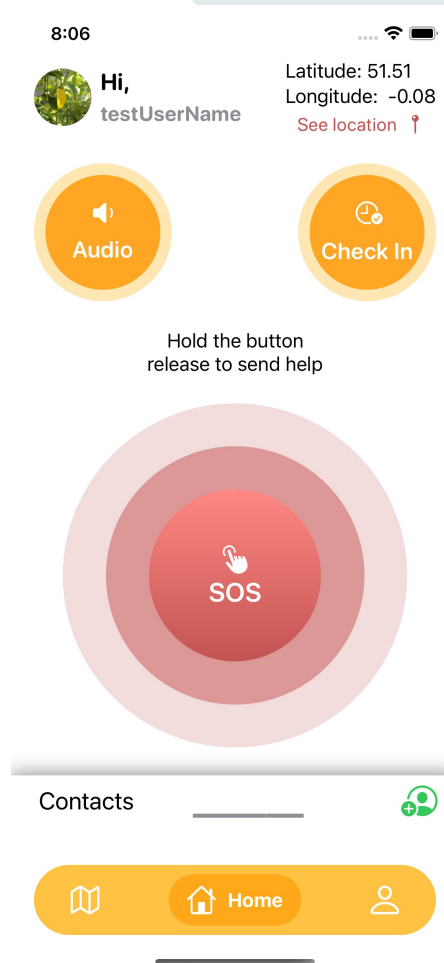
- add/ delete

- modify details/ set as emergency

<u>Main Button</u>

- begin / stop audio recording

- send message 

<u>Check-In</u>

- begin/ stop check-in timer

- begin/ stop audio recording
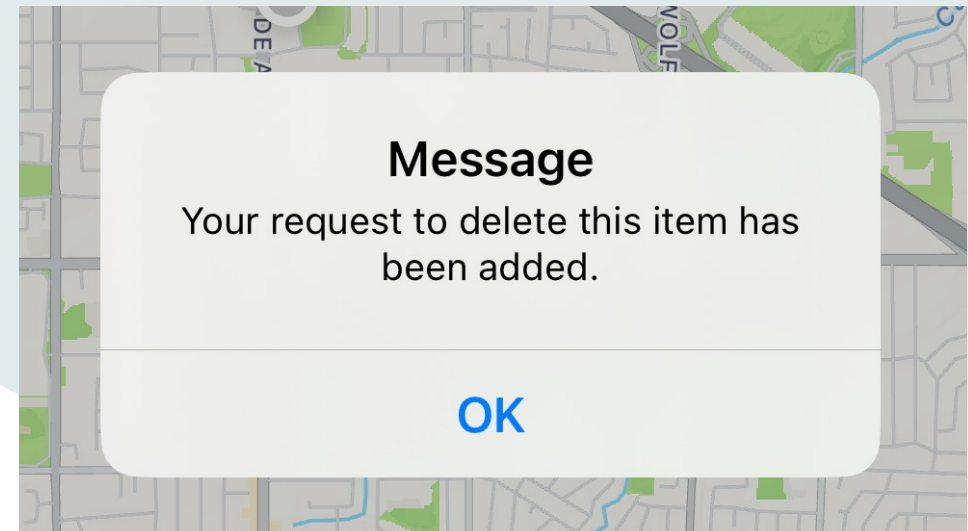
- send message 

# Superpowers at Your Fingertips:
## Meet Guardian

Unsafe Reports

- add new reports by choosing a location

- check details on Map

- delete the report

Missing Person Reports

- add new reports by location and essential information

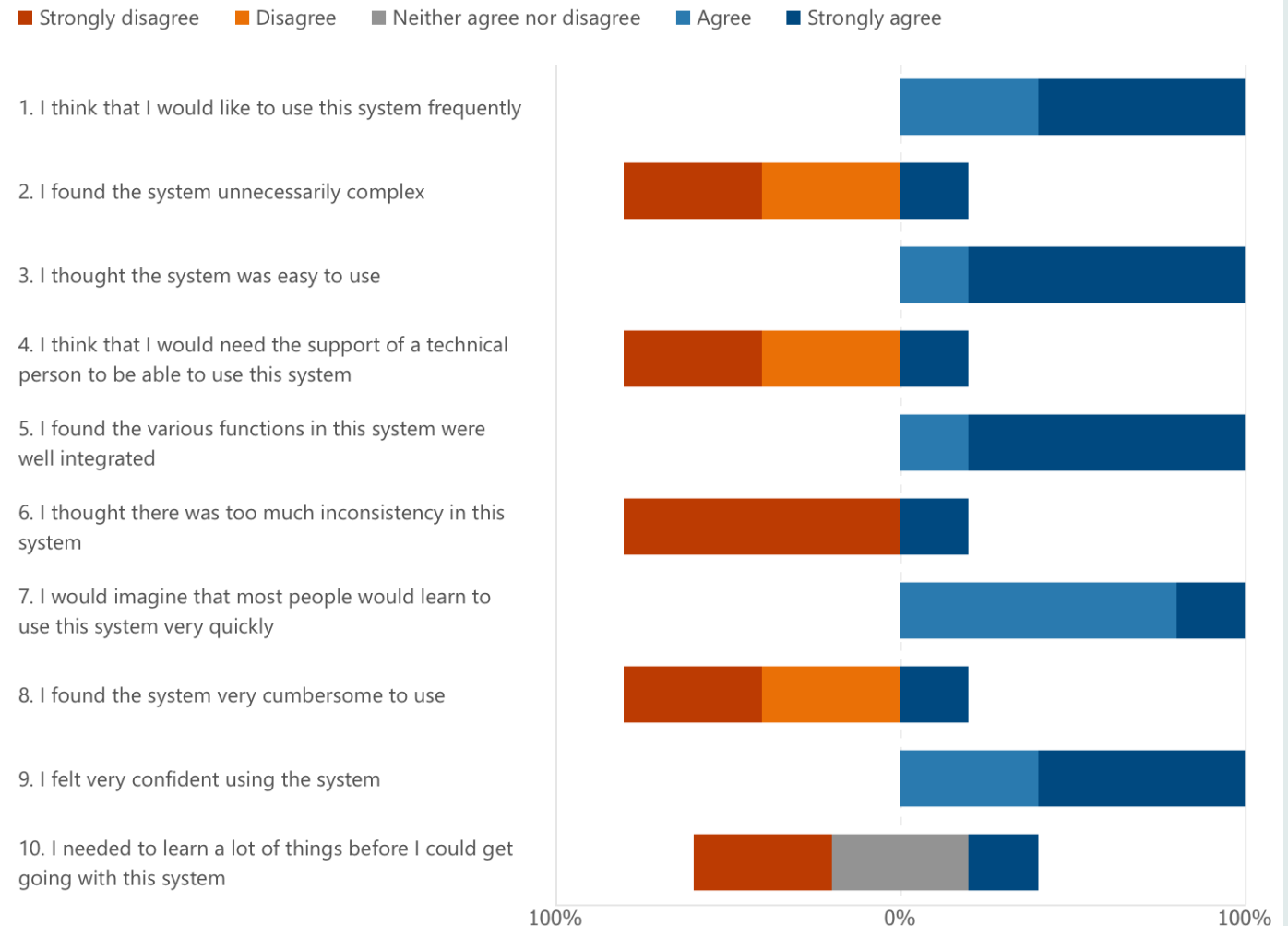- check details on Map

- delete the report

# Putting Guardian to the Test:
## Triumphs and Challenges

<u>Unit Test</u>

- 40 test cases

- 34% test coverage

<u>Usability Test</u>

- Beta test through the task list

- 5 SUS questionnaire, score 35/40

- Some feedback:
  - No difference between the tester's own report and others' reports
  - Drag gesture for contacts list is hard to find

# What's next?

**Subscribable premium version**
automatic message sending

**In-app walk through user guidance**

**Customisable emergency message**
Allow customising the content of the emergency message

**Biometric authentication**

e.g., fingerprint or face recognition as an alternative to PIN entry

**Localisation**

Support multiple languages and region-specific messaging services

# Thank you for listening

Q&A

Bibliography

[1]. Sarah Everard "brought joy to our lives", says her family. BBC News [Internet]. 2021 Mar 11; Available from: https://www.bbc.co.uk/news/uk-england-london-56367223
[2]. Sarah Everard one year on: The people trying to make change. BBC News [Internet]. 2022 Mar 3; Available from: https://www.bbc.co.uk/news/newsbeat-60507709
[3]. Sabina Nessa: Teacher killed on walk to meet friend. BBC News [Internet]. 2021 Sep 23; Available from: https://www.bbc.co.uk/news/uk-england-london-58661926

## Usability Test Task List

1. Register an account
2. Add contacts
3. Check the contacts details you just added and make 1 or 2 contacts as emergency
4. Delete 1 contact
5. Hold the button, release to get help(no enter PIN)
6. Set a 1min check in timer, after 10s, stop timer and enter PIN to cancel help
7. Disable the audio recording, repeat task 5 or 6
8. Find your profile, add a profile picture and full name
9. Change your PIN
10. Find the recorded audios, play them and delete one
11. Find your location and add new report(any type)
12. Check one report detail on the map(any one)
13. Find a way to delete your just added report, (optional) and delete
14. Logout then re-login
15. Find a way to delete your account, (optional) and delete

Any comments? anything?
Scan the QR code and fill out the questionnaire, thank you!
https://forms.office.com/e/vp13U0hK4e

SUS result

---

**GuardianUnitTests** 47 tests, 8 failing ❌

- AccountVMTests ❌
- AudioRecordingManagerTests ✅
- ContactVMTests ❌
- HomeTests ✅
- ImageStringConversionTests ✅
- LoginTests ✅
- MapVMTests ✅
- MessageHelperTests ✅
- RegisterTests ✅
- ResetPasswordVMTests ✅
- SessionServiceTests ✅
- SharedMethodsTests ❌

A: Registration and login  
B: Add contacts  
C: Convenient alert button  
D: Location sharing  
E: Inform contacts  
F: Inform authority  

G: Audio evidence recording  
H: Video evidence recording  
I: Fake phone calls  
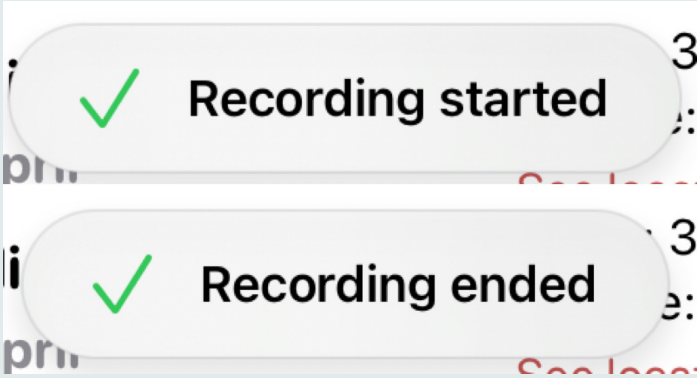J: Potentially unsafe alert  
K: Publish and report missing  
L: Subscription  

✓: Has this function

✗: Don't have this function

✓*: Has this function when the pre-requisites are met (subscription or in a particular region)

| | | A | B | C | D | E | F | G | H | I | J | K | L |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (SOS) | Apple SOS[6] | ✗ | ✓ | ✗ | ✓ | ✓ | ✓* | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ |
| | Bond[7] | ✓ | ✓ | ✗ | ✓* | ✓* | ✓ | ✗ | ✗ | ✗ | ✗ | ✗ | ✓ |
| | bSafe[8] | ✓ | ✓ | ✗ | ✓* | ✓* | ✓* | ✓* | ✓* | ✗ | ✗ | ✗ | ✓ |
| | Hooot[9] | ✓* | ✓* | ✓ | ✓* | ✓* | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ | ✓ |
| | iSharing[10] | ✓ | ✓ | ✗ | ✓ | ✓ | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ | ✓ |
| | Noonlight[11] | ✓* | ✓* | ✓ | ✓* | ✓* | ✓* | ✗ | ✗ | ✗ | ✗ | ✗ | ✓ |
| | OneScream[12] | ✓ | ✓ | ✗ | ✓* | ✓* | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ | ✓ |
| | Parachute[13] | ✓ | ✓ | ✓ | ✓* | ✓* | ✓* | ✓* | ✗ | ✗ | ✗ | ✗ | ✓ |
| | Parry[14] | ✓* | ✓* | ✗ | ✓* | ✓* | ✗ | ✗ | ✗ | ✓* | ✗ | ✗ | ✓ |
| | SafeUp[15] | ✓ | ✗ | ✓ | ✓ | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ |
| | Sister[16] | ✓* | ✓* | ✗ | ✓* | ✓* | ✗ | ✓* | ✗ | ✗ | ✗ | ✗ | ✗ |
| | Ursafe[17] | ✓ | ✓ | ✗ | ✓* | ✓* | ✓ | ✗ | ✗ | ✗ | ✗ | ✗ | ✓ |
| | WalkSafe+ | ✓ | ✓ | ✓ | ✓ | ✓ | ✗ | ✗ | ✗ | ✗ | ✓ | ✗ | ✗ |
| | WeHelp[18] | ✓* | ✓* | ✗ | ✓* | ✓* | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ | ✓ |



| Key | | Type | Value |
|---|---|---|---|
| Bundle name | ↕ | String | $(PRODUCT_NAME) |
| Launch screen interface file base name | ↕ | String | lauchScreen |
| Default localization | ↕ | String | $(DEVELOPMENT_LANGUAGE) |
| Bundle version | ↕ | String | $(CURRENT_PROJECT_VERSION) |
| > Required background modes | ↕ | Array | (1 item) |
| > Supported interface orientations (iPhone) | ↕ | Array | (3 items) |
| Privacy - Microphone Usage Description | ↕ ⊕ ⊖ | String | ↕ This app will needs to access your m |
| Application supports indirect input events | ↕ | Boolean | YES ↕ |
| Bundle OS Type code | ↕ | String | $(PRODUCT_BUNDLE_PACKAGE_TY |
| > Launch Screen | ↕ | Dictionary | (1 item) |
| Bundle version string (short) | ↕ | String | $(MARKETING_VERSION) |
| InfoDictionary version | ↕ | String | 6.0 |
| Executable file | ↕ | String | $(EXECUTABLE_NAME) |
| > Supported interface orientations (iPad) | ↕ | Array | (4 items) |
| Bundle identifier | ↕ | String | $(PRODUCT_BUNDLE_IDENTIFIER) |
| Privacy - Contacts Usage Description | ↕ | String | This app use your contacts to send e |
| > Application Scene Manifest | ↕ | Dictionary | (2 items) |
| Application requires iPhone environment | ↕ | Boolean | YES ↕ |
| Privacy - Location When In Use Usage Description | ↕ | String | This app needs your location to find |