POLITECNICO
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SafeStreets project

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Acceptance Test Deliverable

Deliverable:	ATD
Title:	Acceptance Test Deliverable
Authors:	Manuel Pedrozo, Tomás Perez Molina
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Download page:	https://github.com/lethanity/PedrozoPerez
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1 Introduction

1.1 Purpose and Scope

The purpose of this document is to describe the focus of the acceptance tests performed on the prototype of SafeStreets developed by another group of students. The topics covered are:

- Description of the project to be analysed.
- The installation process performed in order to run the prototype.
- Acceptance tests cases considered and applied to the application.
- Other aspects to consider, concerning the quality of documentation and code.

1.2 Definitions and Acronyms

1.2.1 Definitions

To keep the same context and idea for the application, in this document we will use the same definitions as the team who developed the project.

- System: The software developed.
- User: A person that uses the system.
- Normal user: A person that uses the system which is not responsible for the streets' security
- Authority: A person employed by the municipality who is responsible for the security of the streets' network.
- Area: A district of a city consisting in a collection of streets which are connected together and which have a horizontal extension similar to the vertical extension.

1.2.2 Acronyms

- RASD: Requirement Analysis and Specification Document
- DD: Design Document
- ITD: Implementation and Testing Deliverable
- UI: User Interface

1.3 Revision history

- Version 1.0: First release

2 Project analysed

The project analysed is the one developed by Andrea Cappelleti and Sandro Maglione. It can be found here: https://github.com/andreacappelletti97/CappellettiMaglione.

The project documents referenced in order to perform the acceptance tests were the following:

- Requirements Analysis and Specification Document V1.0 (RASD1.pdf)
- Design Document V1.0 (DD1.pdf)
- Implementation and Testing Deliverable V1.0 (ITD1.pdf)

3 Installation setup

The steps followed to install the application were:

- Using an Android phone, follow the link provided in the instructions: https://play.google.com/store/apps/details?id=com.cmprogrammers.safestreets
- Download and install the app.

The application was also run from the source code, no installation of the Flutter framework was necessary, as we already developed our project using Flutter. Steps followed:

- Clone the repository
- Import the project in IntellijIDEA
- Run the app on an emulator

4 Acceptance tests

The acceptance tests performed are based on the documentation provided by the team.

4.1 Acceptance tests based on use cases

The tests were developed taking the use cases described in the RASD and modifying them according to what was finally implemented as explained in the ITD.
The "expected steps" describe the flow we would expect to follow to complete a test, before coming into contact with the finished prototype. While the "real steps" are the steps followed to complete the use case when using the prototype.

Test ID	AT-001-SIGN_UP
Based on	Registration as a Normal User to SafeStreets
Pre-requisites	-
Expected steps	1. The System shows the registration page. 2. Input the following data: email, name, surname and password. 3. Agree to the privacy policy of SafeStreets. 4. Confirm and send the form. 5. Receive a confirmation email to the email provided. 6. Confirm email account following the provided link. 7. The user is registered and logged in and is redirected to the home page.
Real steps	1. The system shows the registration page. 2. Fill the form with the following data: Name: Robert Surname: Jones Email: robert@mail.com Password: robert123 3. Press the Sign Up button. 4. The user is registered and logged in and the system shows the home page.
Expected output	User correctly registered and redirected to the home page.
Outcome	Success
Alternative flow	• In step 4, if any field form is either empty or invalid, the message "Wrong data, impossible to sign up" is shown.

Test ID	AT-002-REPORT_VIOLATION
Based on	Violation report sent by User to SafeStreets
Pre-requisites	Logged into the app

Expected steps

1. Select the camera.
2. The system shows the camera screen.
3. Press the button or screen to take a picture of the violation.
4. The system shows the form to add the type of violation.
5. Select a type of violation.
6. Confirm the license plate recognized by the system.
7. Press the button to send the report.
8. The system shows the home screen.

Real steps

1. Press the camera button.
2. The system shows the camera screen.
3. Press the button to take a picture of a car.

Picture:

4. The system shows a form to add a license plate and select a type of violation.
5. Enter the car license plate: FF841EE
6. Select parking violation.
7. Press the button to send the report.
8. The system shows a screen with a “Report sent successfully, thanks for your contribution” message.

Expected output	Report submitted, app redirects to home page.
Real output	Report submitted successfully, confirmed by a notification. App redirects to thank you message.
Outcome	Partial success, core functionality is working but does not redirect to the home screen as indicated in the RASD.

Alternative flow

- Backing out of taking a picture after step 2 results in a continuous loading indicator displaying “Taking picture…”.

Notes	The system does not appear to detect license plates in a photo, as the license plate input is always shown. Other photos used:

Test ID	AT-003-REPORT_HISTORY
Based on	History report requested by User.
Pre-requisites	Logged into the app.
Expected steps	1. Select the report history. 2. The system shows the report history.
Real steps	1. Press the “Get My Report” button. 2. The system shows the report history.
Expected output	The report history is displayed on the screen.
Outcome	Success

Test ID	AT-004-CHECK_LICENSE_PLATE_VIOLATIONS
Based on	Checking license plate violations by an Authority.
Pre-requisites	Logged into the app as an Authority.
Expected steps	1. Submit multiple reports for a license plate 2. Go to home screen 3. Input the license plate code. 4. The system displays a list of reports for the given license plate ordered by date in descending order.
Real steps	1. Submit multiple reports for the license plate: “AS123AS” 2. Go to home screen 3. Press “Get License Plate Information” 4. Input the license plate code “AS123AS” 5. The system displays a list of reports for the given license plate in no apparent order
Expected output	The list of reports for the given license plate is displayed ordered by date in descending order.
Real output	The list of reports for the given license plate is displayed in no apparent order.
Outcome	Partial success, the reports are not sorted as described in the use case.

Test ID	AT-005-VIOLATION_NOTIFICATION
Based on	Real-time notification about nearby violation for an Authority.
Pre-requisites	Logged into the app as an Authority with the notification service activated.
Expected steps	1. Submit a report with another phone in close proximity 2. Receive a notification. 3. Press the notification message. 4. The system displays the report, providing the exact location of the report.
Real steps	1. Subscribe to notifications for all areas available on the settings screen. 2. Receive a notification. 3. System displays a message stating that a new violation was reported in the area.
Expected output	The system displays the report with its exact location.
Real output	The system displays a message indicating the area of the report.
Outcome	Partial fail, the notifications work but they do not display either the report nor its exact location.
Alternative flow	• If the app is not open, a system notification pop ups, but when pressed it just opens the app on the screen it was on. If the app was completely closed, it opens it on the home screen.
Note	One is able to receive notifications while logged in as a normal user, which should not be possible as this functionality is listed as Authority only.

Test ID	AT-006-LIST_AREA_VIOLATIONS
Based on	List of violations in an area for an Authority.
Pre-requisites	Logged into the app as an Authority.
Expected steps	1. Submit multiple reports in a specific area 2. Go to home screen 3. Input the area of interest. 4. The system shows a list of reports in the area.
Real steps	1. Submit multiple reports in the same area 2. Go to home screen 3. Press “Get Area 1 Violation” 4. The system shows a list of reports
Expected output	The system displays a list of reports inside the given area.
Real output	The system shows a list of reports, with drastically different coordinates
Outcome	Fail, the reports shown are in completely different areas. For example one is at (45.6744862, 9.1789748) which is Cabiate, Italy, while another is at (37.4219983, -122.084) which is the Google Campus in California.

4.2 Other acceptance tests

Taking into account the functionality implemented, further acceptance tests were performed. However, as there were no use cases for these, there are no expected steps to perform.

Test ID	AT-007-SIGN_IN
Pre-requisites	User already signed up to the system.
Real steps	1. Fill the sign in form with the following data: Email: robert@mail.com Password: robert123 2. Press the sign in button.
Expected output	The system displays the home screen.
Real output	The system displays the home screen.
Outcome	Success

Test ID	AT-009-AREA_SAFETY
Pre-requisites	Logged into the application.
Real steps	1. Press a “Get Area N Safety” button (N could be any of the 3 area numbers). 2. he system displays a screen indicating a safety estimation and the number of violations reported.
Expected output	The system displays the safety of the area.
Real output	The system displays the safety of the area.
Outcome	Success

5 Other aspects to consider

5.1 UI feedback

Although the basic functionality is provided, the look and feel of the application in no way matches the mockups and descriptions included in the documentation. It is clear the development effort was put into other parts of the system.

As an example, we can see below a comparison of the sign up screen in the mockup and in the final prototype:

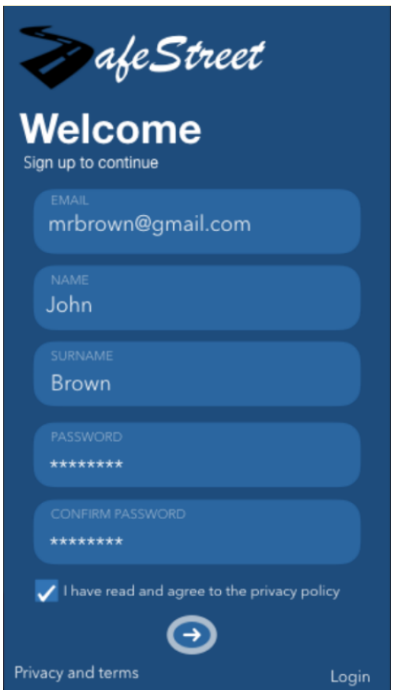

Figure 1: Mockup - Sign up.

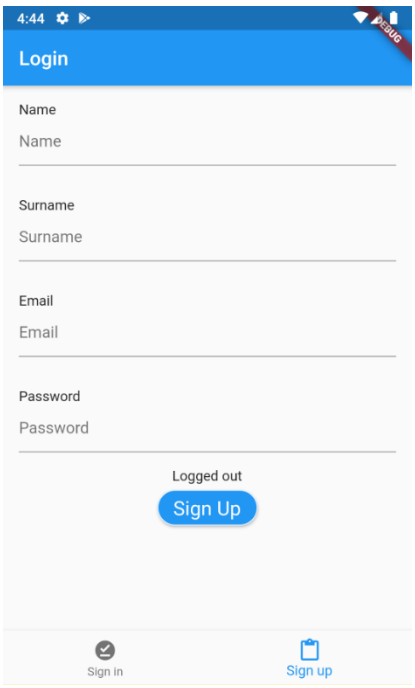

Figure 2: Prototype - Sign up.

5.2 Version differences

Disregarding the differences with the mockup, the installation process chosen results in different UIs and functionality for the app.

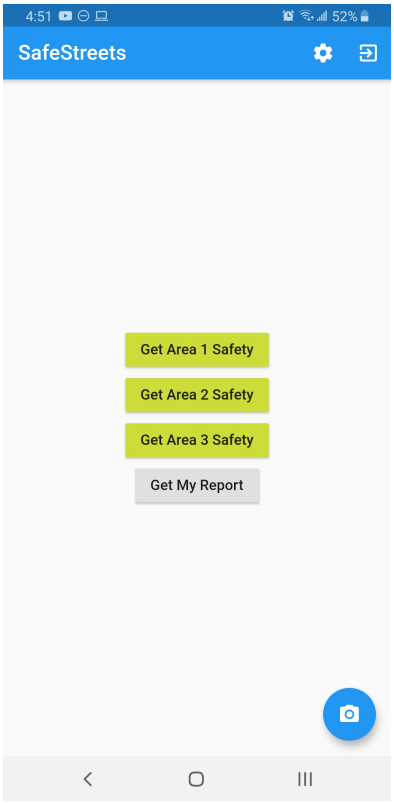

Figure 3: Play store app - Home screen.

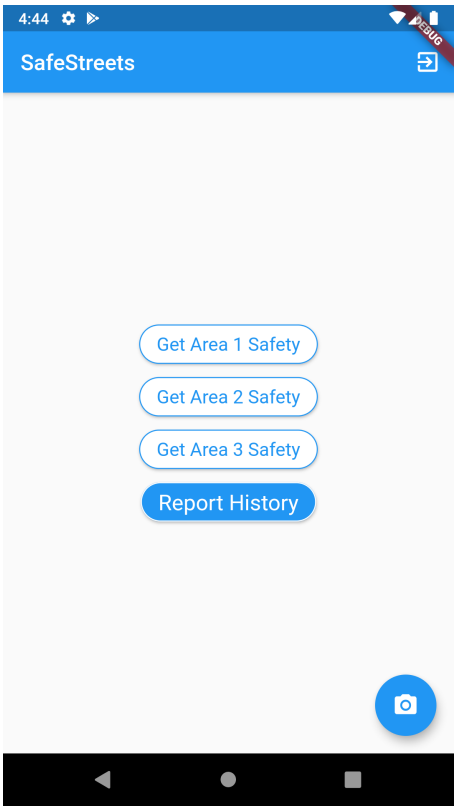

Figure 4: Source code - Home screen.

As seen in the figures, the button design is different. Moreover, when running the app from the source code there is no settings button to enable notifications.

5.3 Documentation inconsistencies

As seen in the UI feedback section, there are inconsistencies between the RASD and what is implemented. In addition, multiple key use cases are missing, namely the area safety functionality for users, and interventions suggestion and validation of reports for authorities. Finally, as mentioned in the acceptance tests section, the notification functionality, which should only we accessible to authorities, is also present when logged in as a normal user.

6 Effort Spent

6.1 Manuel Pedrozo

Task	Hours
Introduction & Project analysed	0.5
Installation setup	1
Acceptance tests	3
Other aspects to consider	1

Table 1: Effort spent by Manuel Pedrozo

6.2 Tomás Perez Molina

Task	Hours
Introduction & Project analysed	1
Installation setup	1
Acceptance tests	4
Other aspects to consider	0.5

Table 2: Effort spent by Tomás Perez Molina

7 References

- “SafeStreets Mandatory Project Assignment”
- “Implementation Assignment”

