



POLITECNICO
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SafeStreets - ATD

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Part I

Analysis

1 Analysed project

1.1 Authors

- ▷ Alessandro Concetti - alessandro.concetti@mail.polimi.it
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- ▷ Alessandro Sorrentino - alessandro.sorrentino@mail.polimi.it

1.2 Repository

The repository of the project can be found at the following URL:

- ▷ <https://github.com/mett96/concetti-sanchioni-sorrentino>

1.3 Consulted documents reference

- ▷ ITD - Implementation and Test Document

2 Installation setup

1. Updated Python to the required version (3.7.6)
2. Upgraded `pip3` (Python 3's package manager) to its latest version
3. Installed the project's dependencies defined in `requirements.txt` using `pip3`
 - (a) At first, installation did not work because the specified version of a package included in `requirements.txt` wasn't available in `pip`'s repositories. We had to change the requirement from the exact version to a version greater or equal than the one initially request.
4. Installed the latest version of `npm`
5. Installed the `expo-cli` package using `npm`
6. Installed the project frontend's dependencies by running `npm install` in its folder
7. Started backend components (`load_balancer.py` and `dispatcher.py`)
 - (a) On Windows, running the component's scripts with `python3` as suggested by the provided installation steps caused the scripts not to start at all, without any error. Running the same command with `python` produces the correct result.

This probably happens because the team did not take into consideration that on a Windows machine with Python3 installed and Python2 not installed only the `python` command works, since it doesn't need to disambiguate between the two executables.

A note on a similar matter is present in the ITD, but it only considers the case in which the user runs `pip3` without Python installed, suggesting that doing it opens Python3's page on the Windows Store. Instead, this only happens when trying to execute `python` or `python3` without previously installing it. See figure 1.

These problems are easy to solve for a developer, but could not have been solved by a customer. This is part of the reason for our first consideration in section 4.2.
8. Ran `npm start` in the frontend folder to start the application's server
9. Installed the *Expo* application on a mobile device

10. Connected the mobile device to the same local network the PC running the backend was connected to
11. Scanned the application's QR code with Expo
12. Set the PC IP address in the Connection section

3 Acceptance test cases

In some sections, after the test's name, a reference to the project's requirements is made in the form of R_x , where x is the number of the corresponding requirement.

3.1 Registration

1.	Name	Company registration (R_{15})
	Result	✓ Passed
	Input	-
	Expected output	The company account is correctly created
	Actual output	Registration works as expected.
2.	Name	Authority registration (R_{18})
	Result	✗ Partial
	Input	-
	Expected output	The authority account is correctly created
	Actual output	On devices with the most common aspect ratio (18:9 or 16:9) the "SignUp" button is not visible and cannot be pressed to complete the registration. See attachment 2. On devices where the button is clickable, the registration works as expected.
3.	Name	User registration
	Result	✗ Partial
	Input	-
	Expected output	The user account is correctly created
	Actual output	On devices with the most common aspect ratio (18:9 or 16:9) the "SignUp" button is not visible and cannot be pressed to complete the registration. See attachment 3. On devices where the button is clickable, the registration works as expected.

3.2 Authentication

1.	Name	Company authentication
	Result	✗ Partial
	Input	-
	Expected output	The company user correctly logs in
	Actual output	After following the mockup payment procedure for the subscription plan, trying to log in as a company shows a warning, informing the user no subscription was associated with the account. See figure 4.
2.	Name	Authority authentication
	Result	✓ Passed
	Input	-
	Expected output	The authority user correctly logs in
	Actual output	Authentication works as expected
3.	Name	User authentication
	Result	✓ Passed
	Input	-
	Expected output	The user correctly logs in
	Actual output	Authentication works as expected

3.3 Violation report

1.	Name	Metadata insertion (R_1)
	Result	✓ Passed
	Input	Metadata of the report
	Expected output	The system accepts the new report
	Actual output	Data is correctly accepted but, in case some fields are missing, the error message does not express which field is missing or has a wrong value. See figure 5.
2.	Name	License plate photo (R_2)
	Result	✓ Passed
	Input	One photo of the violation, one photo of the license plate
	Expected output	The system accepts the new report
	Actual output	Data is correctly accepted but, in case one or both photos are missing, the error message is too generic to understand if the problem lies in a missing photo or an incorrect value in a field. See figure 5.
3.	Name	Geolocation (R_3)
	Result	✓ Passed
	Input	GPS authorization on the testing device
	Expected output	The system finds the device location
	Actual output	Location is correctly found
4.	Name	Submission (R_4)
	Result	✓ Passed
	Input	Report data, photos
	Expected output	The report is correctly sent
	Actual output	The report was correctly sent
5.	Name	Suggestion (R_5)
	Result	✓ Passed
	Input	User's suggestion
	Expected output	The system accepts the new report
	Actual output	Data is correctly accepted
6.	Name	Registration (R_6)
	Result	✓ Passed
	Input	New violation report
	Expected output	The report is correctly registered
	Actual output	The report was correctly registered

3.4 Suggestion report

1.	Name	Metadata insertion (R_1)
	Result	✓ Passed
	Input	Metadata of the suggestion
	Expected output	The system accepts the new suggestion
	Actual output	Data is correctly accepted but, in case some fields are missing, the error message does not express which field is missing or has a wrong value. See figure 5.
2.	Name	Geolocation (R_3)
	Result	✓ Passed
	Input	GPS authorization on the testing device
	Expected output	The system finds the device location
	Actual output	Location is correctly found

3.	Name	Submission (R_4)
	Result	✓ Passed
	Input	Report data, photos
	Expected output	The report is correctly sent
	Actual output	The report was correctly sent
4.	Name	Registration (R_6)
	Result	✓ Passed
	Input	New violation report
	Expected output	The suggestion is correctly registered
	Actual output	The suggestion was correctly registered

3.5 Reports history

1.	Name	Private area (R_{11}, R_{12})
	Result	✗ Failed
	Input	-
	Expected output	The user can see the history of all and only its past reports
	Actual output	The private area of regular users is shown correctly but accessing the page with an Authority user shows the history of the last regular user which logged in before him
2.	Name	Violation report details (R_{13})
	Result	✓ Passed
	Input	-
	Expected output	The user can see every detail of the report
	Actual output	Detailed information about the selected report was correctly shown

3.6 Statistics

1.	Name	Show statistics (R_8, R_9)
	Result	✓ Passed
	Input	-
	Expected output	Statistics are shown with data coming from violations, suggestions and external resources
	Actual output	Statistics were correctly shown
2.	Name	Filtering (R_{10})
	Result	✓ Passed
	Input	-
	Expected output	Statistics are filtered as specified by the user
	Actual output	Statistics were correctly filtered
3.	Name	Company data retrieval (R_{17})
	Result	✗ Failed
	Input	-
	Expected output	Company users can access statistics and filter them
	Actual output	It was impossible to access statistical data as a company user because it was impossible to authenticate as one. See test 3.2.1.
4.	Name	Authority data retrieval (R_{20})
	Result	✓ Passed
	Input	-
	Expected output	Authority users can access statistics and filter them
	Actual output	Statistics were correctly shown and filtered

3.7 Company plan subscriptions

1.	Name	Company registration (R_{15})
	Result	✓ Passed
	Input	-
	Expected output	The company account is correctly created
	Actual output	Registration works as expected.
2.	Name	Company subscription purchase (R_{16})
	Result	✗ Failed
	Input	-
	Expected output	The company user is assigned the chosen subscription plan
	Actual output	After following the mockup payment procedure for the subscription plan, trying to log in as a company shows a warning, informing the user no subscription was associated with the account. See figure 4.

4 Final considerations

4.1 Positive considerations

- ▷ Very detailed and well done documentation
- ▷ Extensively commented code

4.2 Negative considerations

- ▷ Hard deployment procedure for a non-technical customer which could be performing acceptance testing
- ▷ Error messages only expressing an error occurred but not explaining the cause or a possible solution
- ▷ The application does not take into account the possibility of different screen sizes
- ▷ Even if the “*burger menu*” button is not present in the application homepage, by dragging from the right edge of the screen, unauthorized users can access the private report history of the last logged user

Part II

Attachments

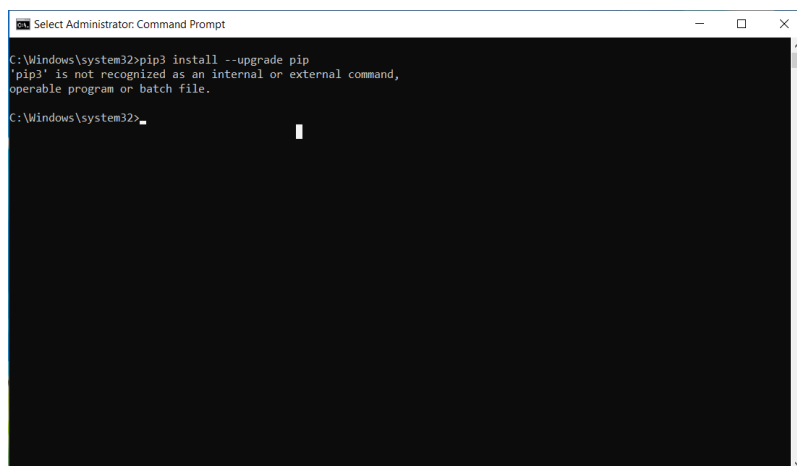


Figure 1: Executing `pip3` does not prompt for installation as specified in installation instructions

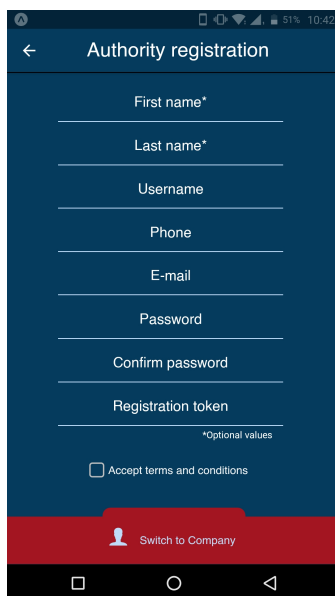


Figure 2: Unclickable button

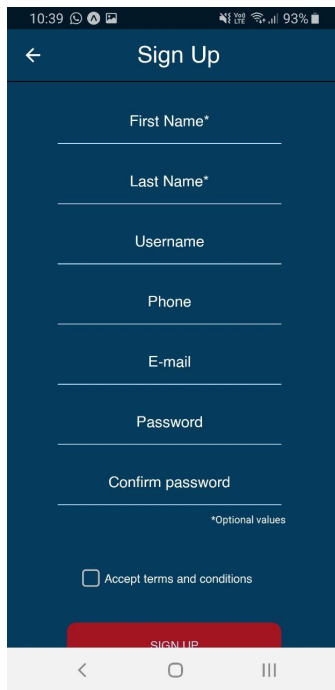


Figure 3: Unclickable button

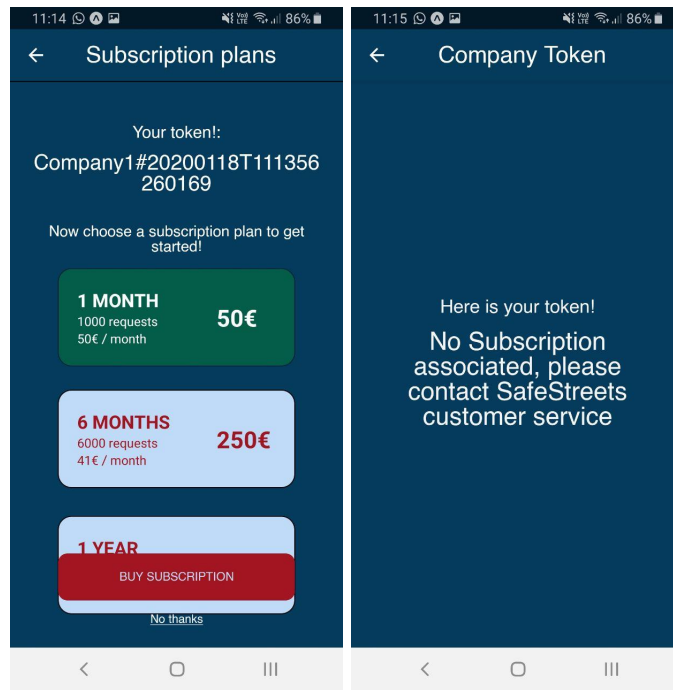


Figure 4: Nonexistent subscription

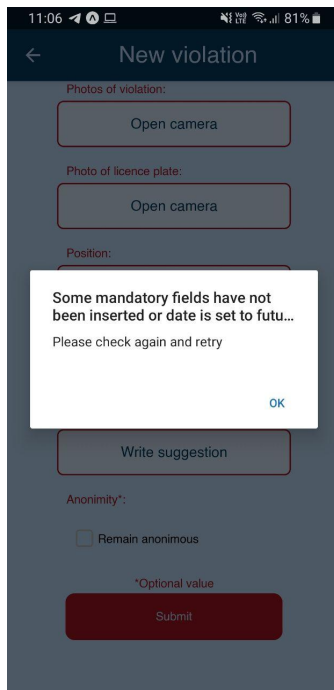


Figure 5: Missing fields alert