



UNIVERSITÀ  
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FIRENZE

**DIEF**

Dipartimento di  
Ingegneria Industriale

# AgeMob Communication tool

Human Computer Interaction  
Course

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## 1. Introduction

- What is AgeMob & Our Project

## 2. Needfinding

- Personas
- Needs & Problems
- Scenarios and features selection

## 3. Mockup

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- Operator side

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- Technologies
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- Test for AgeMob operator agency
- Test for students

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- **What is AgeMob**

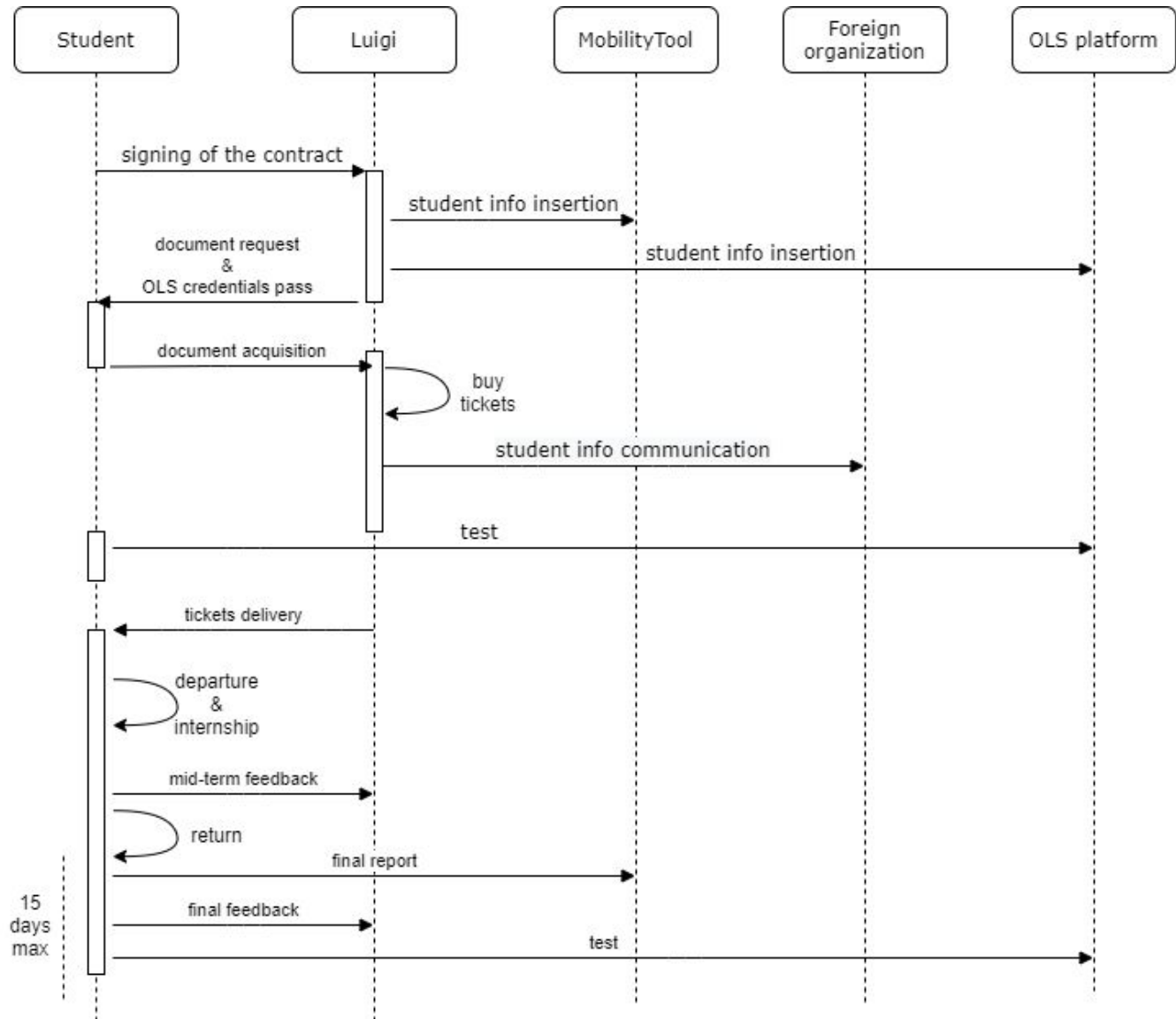
An agency that works supporting schools and universities involved in international cultural and training exchange programs for students.



- **What we have to do**

The Project **aim** is to **define** the **personas** involved during an exchange Erasmus program and **build a smart tool** to solve some of the persona's needs.

- Personas



- Needs & Problems



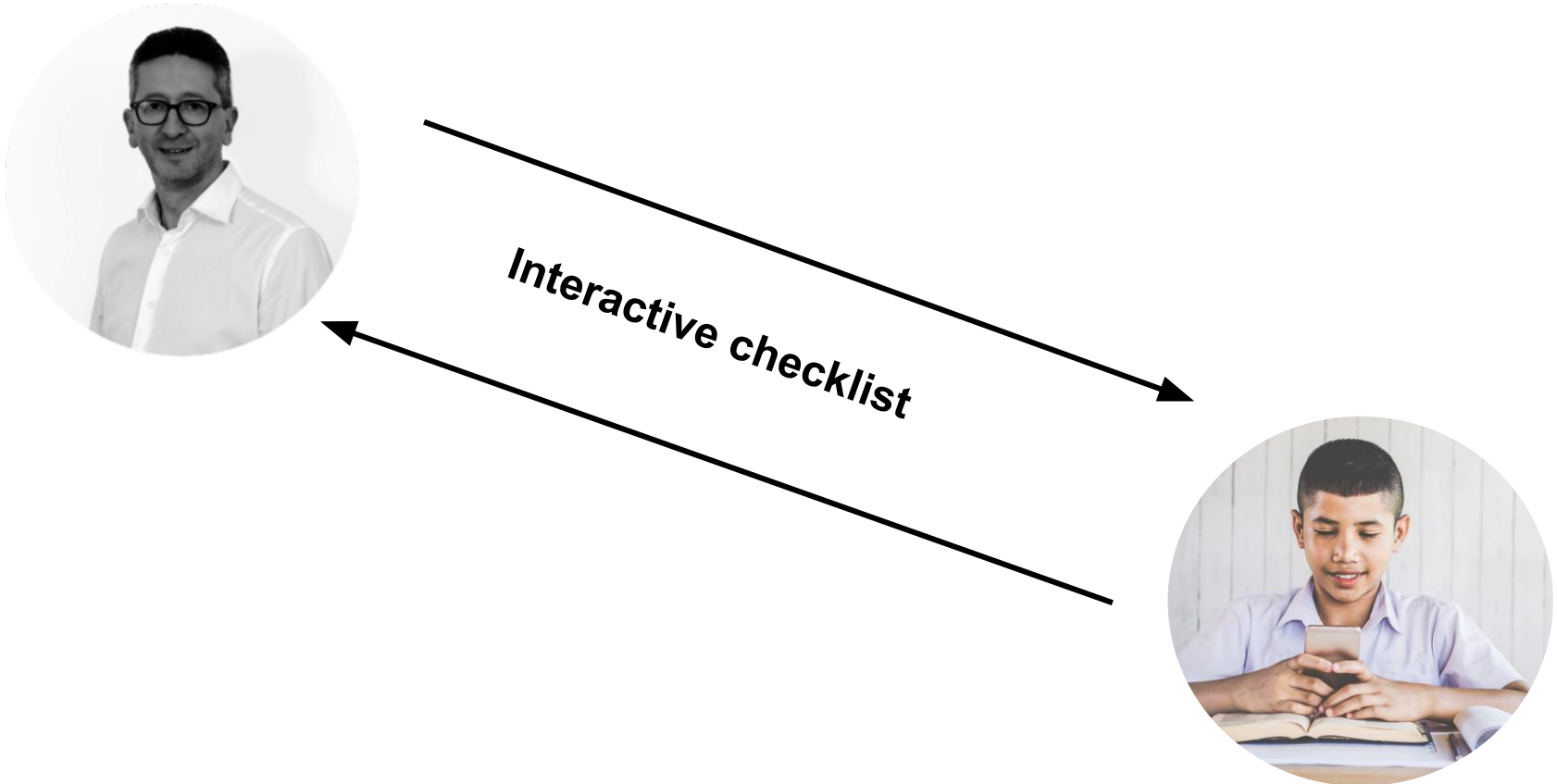
- ## Requirements

- ➔ Unify in a single place all the steps which must be performed for the correct conduction of the whole process with an **interactive checklist** which could also **allow down/uploads** of tickets and documentation.
- ➔ In the same place provide **student-specific information** (like emergency numbers).
- ➔ Provide a **notification/reminder tool** to help Luigi and his colleagues to push students to accomplish their duties.
- ➔ Provide a more structured and organized **communication tool** between Luigi's agency and students.



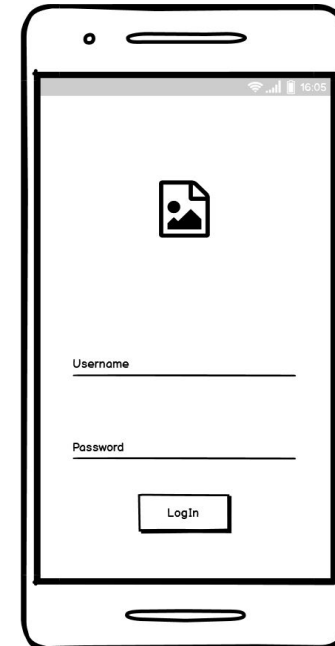
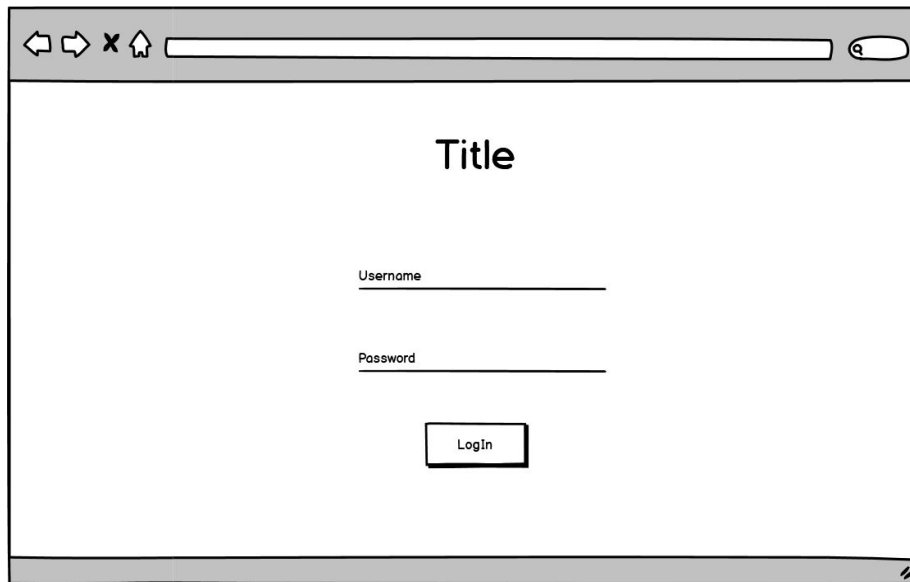


- **Scenarios and features selection**



- **Authentication system**

An authentication system with **username** and **password** to **distinguish** between the **access** of the agency operator and the student one.



The system will also have to support multiple students account and each of them will see **his / her data and progress**.



## • Interactive checklist

The main functionality to implement.

- Students will be clear on the steps to be taken and
- Luigi will be able to keep track of the progress of individual students and notify any lacks to a specific student.

A Web Page

https://

Student	Document	OLS test	Tickets	Mid-term check	Final check	Tickets	OLS Test	Report
Name	<input checked="" type="checkbox"/> Download	<input checked="" type="checkbox"/>	<input type="button" value="Upload"/>	<input type="button" value="View"/>	<input type="button" value="View"/>	<input type="button" value="Upload"/>		
Name	<input type="checkbox"/>		<input type="button" value="Upload"/>			<input type="button" value="Upload"/>		
Name	<input checked="" type="checkbox"/> Download	<input type="checkbox"/>	<input type="button" value="Upload"/>			<input type="button" value="Upload"/>		
Name	<input checked="" type="checkbox"/> Download	<input checked="" type="checkbox"/>	<input type="button" value="Upload"/>	<input type="button" value="View"/>	<input type="button" value="View"/>	<input type="button" value="Upload"/>		
Name	<input checked="" type="checkbox"/> Download	<input type="checkbox"/>	<input type="button" value="Upload"/>			<input type="button" value="Upload"/>		

Name  
Surname

Destination: Madrid

Info relative to user and the project in which he is involved

Step 1: Documents

Step 2: OLS test

complete the OLS test  
you have received an email with your credentials and a link to the test at student.1@gmail.co

Step 3: tickets

Step 4: mid-term check

Step 5: final check

Step 6: tickets

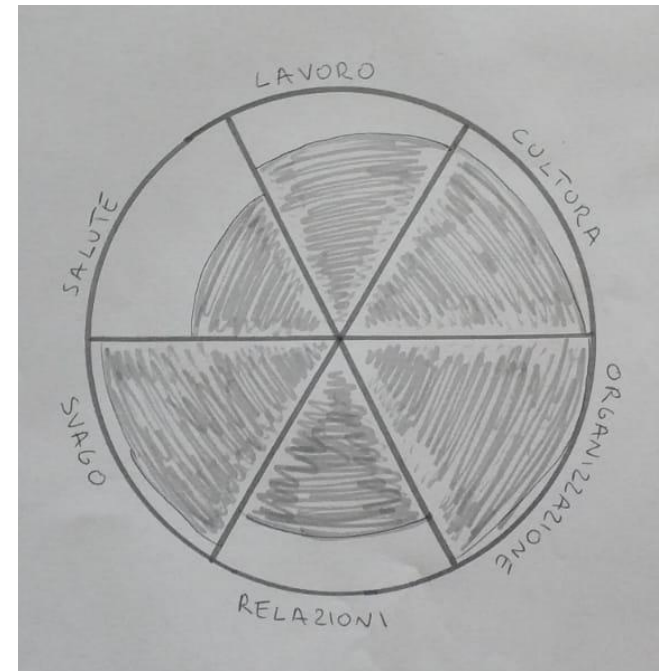
Step 7: OLS test

Step 8: final report

- **Internship wheel before**

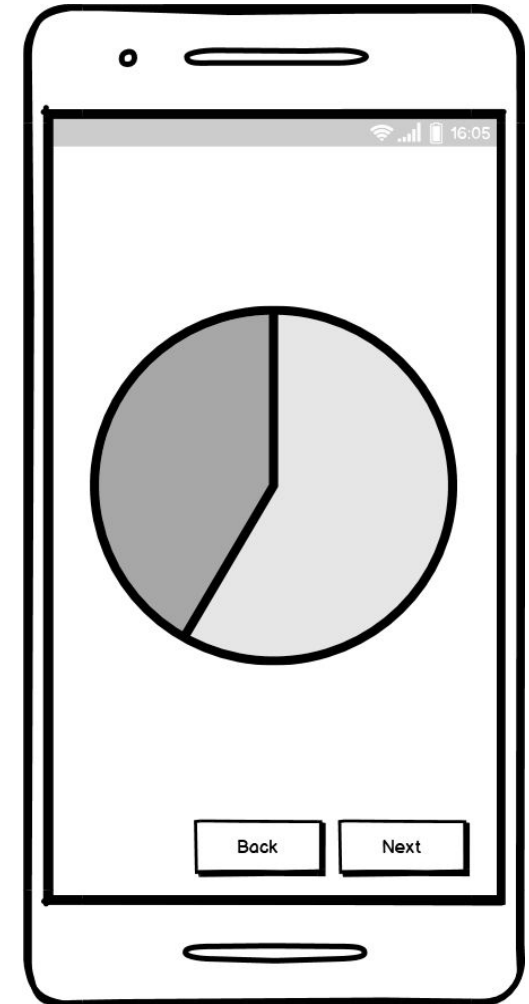
Very important to allow the agency of Luigi to **receive feedback** on the experience of students.

- Currently, it is done **manually** and sent using a photo.
- The operator has to **interpret** the number associated with the colour of the slice of the cake.

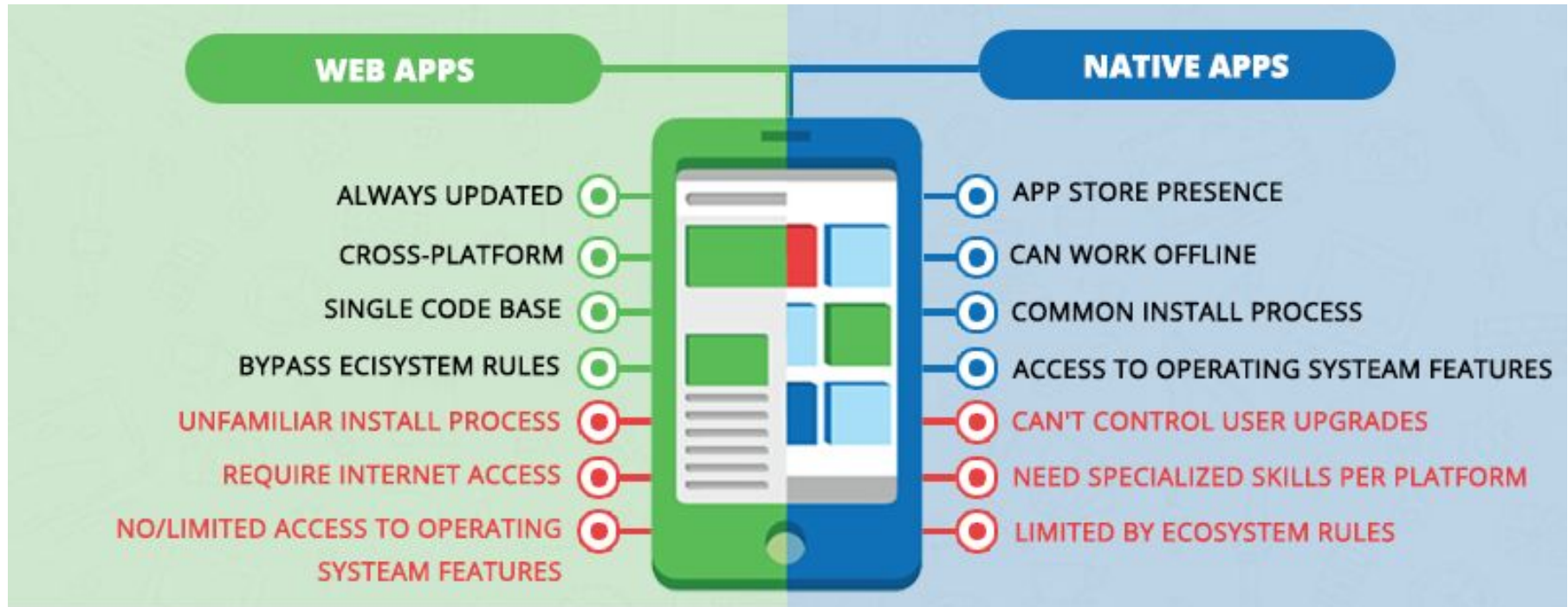


- **Internship wheel now**

- We make it smart by making it compiled and sent in a simple and immediate way by the students.
- We allow collecting numerical data in agreement on the various items analyzed (without showing these numbers to the students).



- Technologies



- **Technologies**

- **Angular**

TypeScript-based open-source web application framework. We use this framework to create the **web app** of our platform.



- **Flutter**

Flutter framework and the Dart language to implement the **native app**.



Flutter  Dart

- **Firebase**

Firebase gives functionality like databases, messaging and gave us the **possibility to not have to emulate** anything with fake **data**.

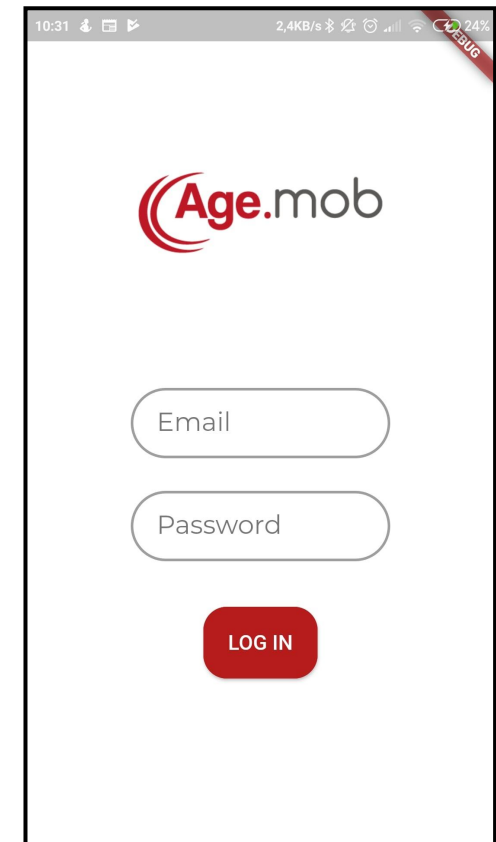
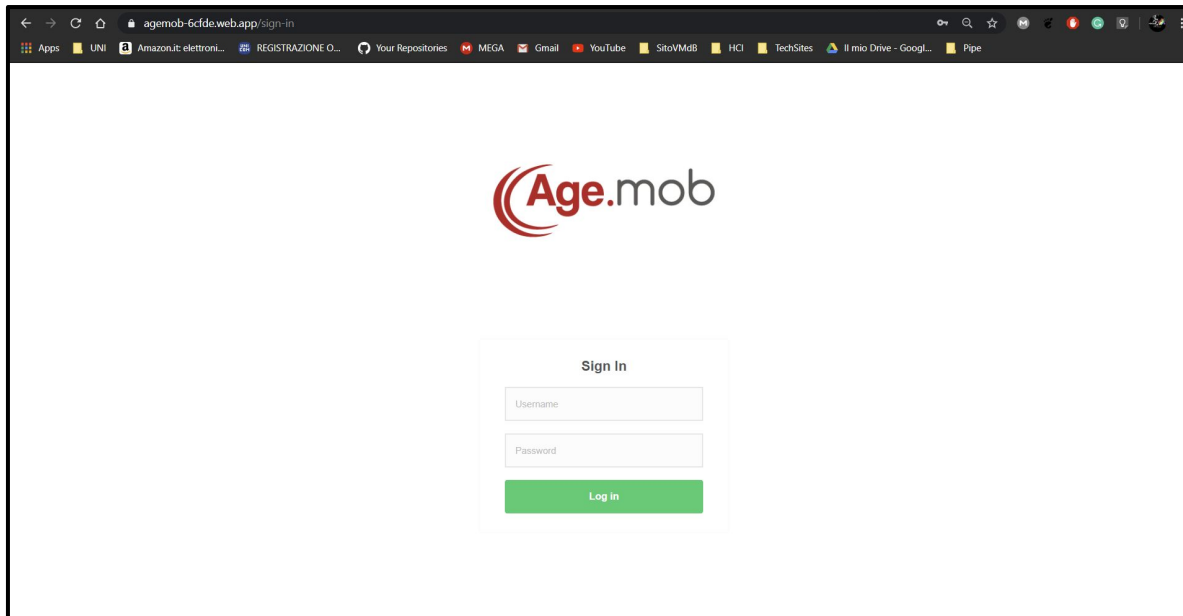


Firebase

- **Authentication system**

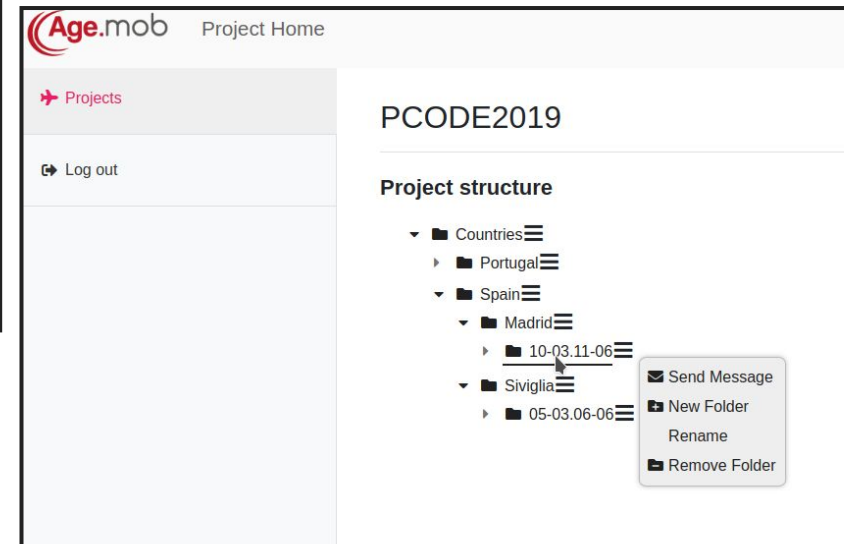
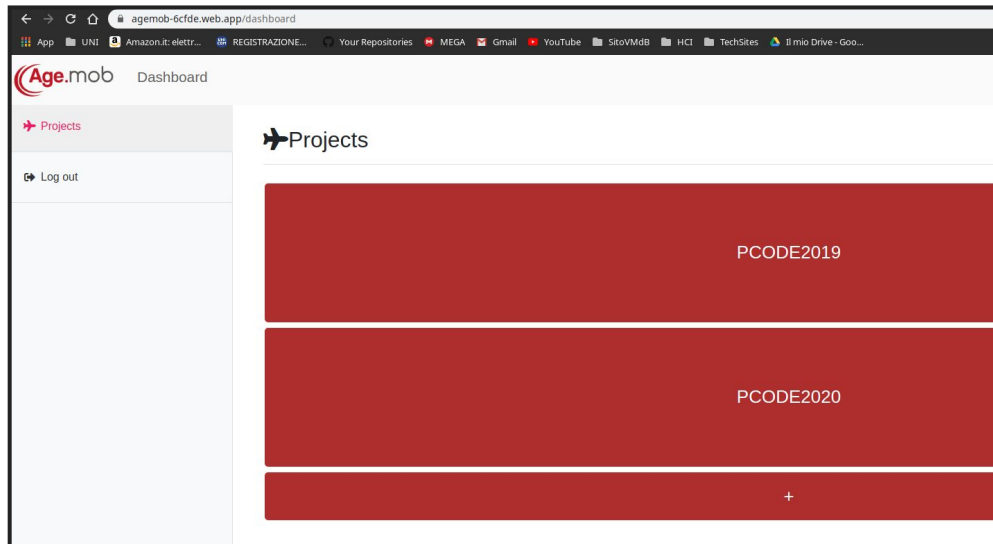
Login pages, for the native app and the web app.

Both implementations rely on **Firebase Authentication**.



## • Projects Organization

- Each checklist is related to the tuple **project-country-city-date\_of\_departure**.
- A **dashboard** to **divide** the **projects** according to the code.
- A page inside the project in which the **subdivisions** are represented in a **tree**.





- Interactive checklist

All the buttons (with the exception of those relating to the Ols tests and the report) open **pop-up** that allow related interactions.

Student	Document	OLS test	Tickets	Mid-term check	Final check	Tickets	OLS test	Report
Alice Casali	Download	Verified	Upload	View	View	Upload	Verified	Done
Antonio Castellucci	Download	Verified	Upload	View	View	Upload	Verified	Done
Emanuele Vivoli	Download	Verified	Upload	View	View	Upload	Verified	Done
Federico Magnoli	Download	Miss	Upload	View	View	Upload	Miss	Miss
Francesca Del Lungo	Download	Verified	Upload	View	View	Upload	Verified	Done
Giacomo Ravara	Download	Miss	Upload	View	View	Upload	Miss	Miss
Giulio Bazzanti	Download	Verified	Upload	View	View	Upload	Verified	Done
Marco Castellucci	Download	Verified	Upload	View	View	Upload	Verified	Done
Mario Rossi	Download	Verified	Upload	View	View	Upload	Miss	Miss
Niccolo Biondi	Download	Verified	Upload	View	View	Upload	Verified	Done

15:34 4,2KB/s 100%

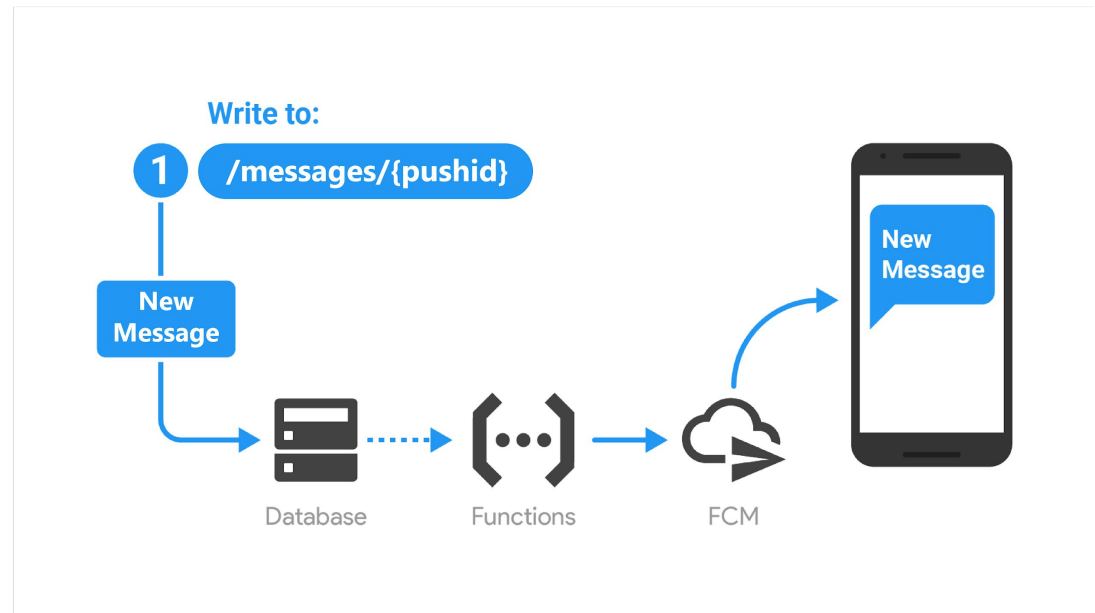
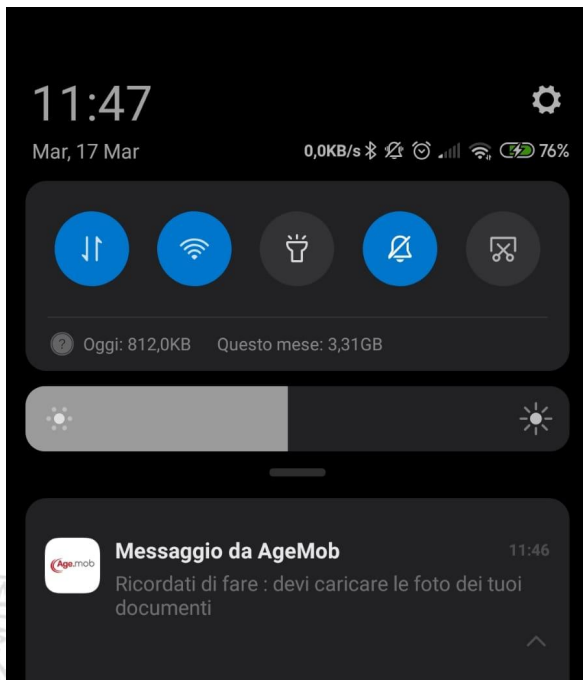
Age.mob

Mario Rossi

- Step 1: Documents ✓
- Step 2: OLS test ✓
- Step 3: Tickets ✓
- Step 4: Mid-term check
- Step 5: final check
- Step 6: Tickets

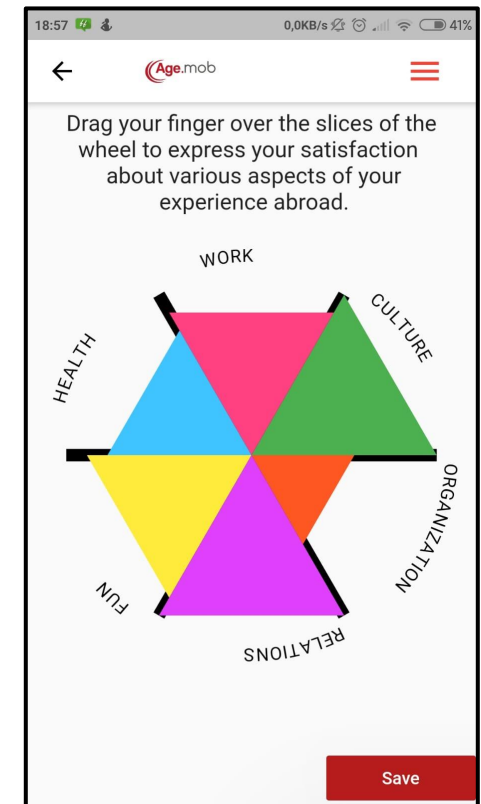
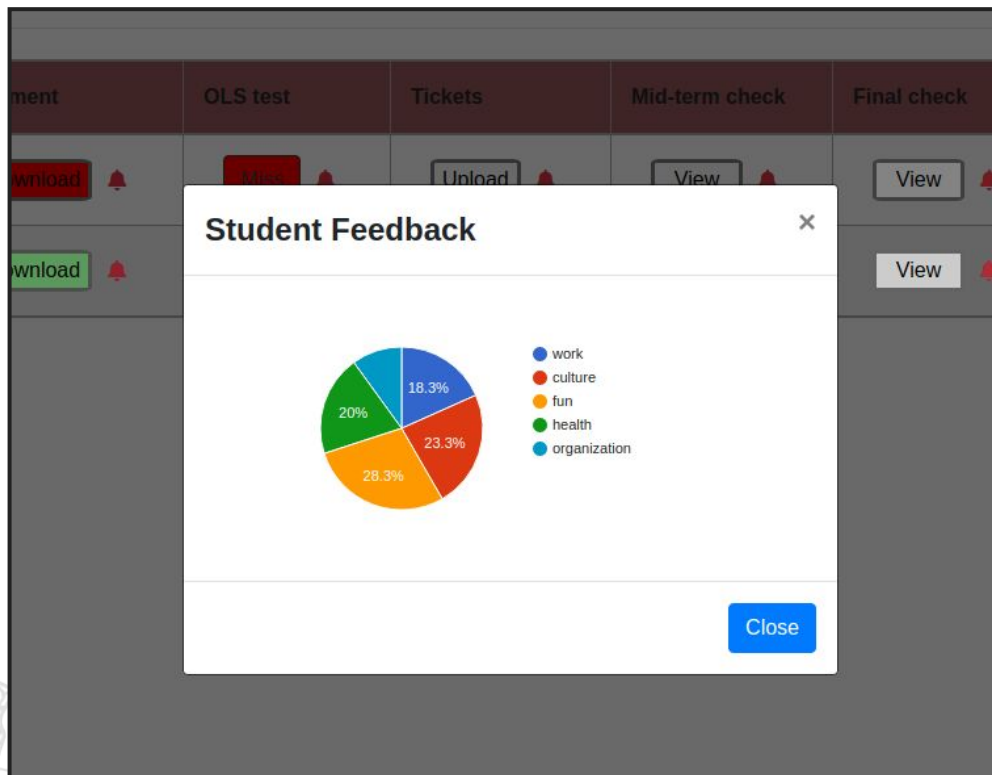
- Notification system

	Mario Rossi	<button>Download</button> 	<button>Verified</button> 	<button>Upload</button> 	<button>View</button> 
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- **Internship wheel**

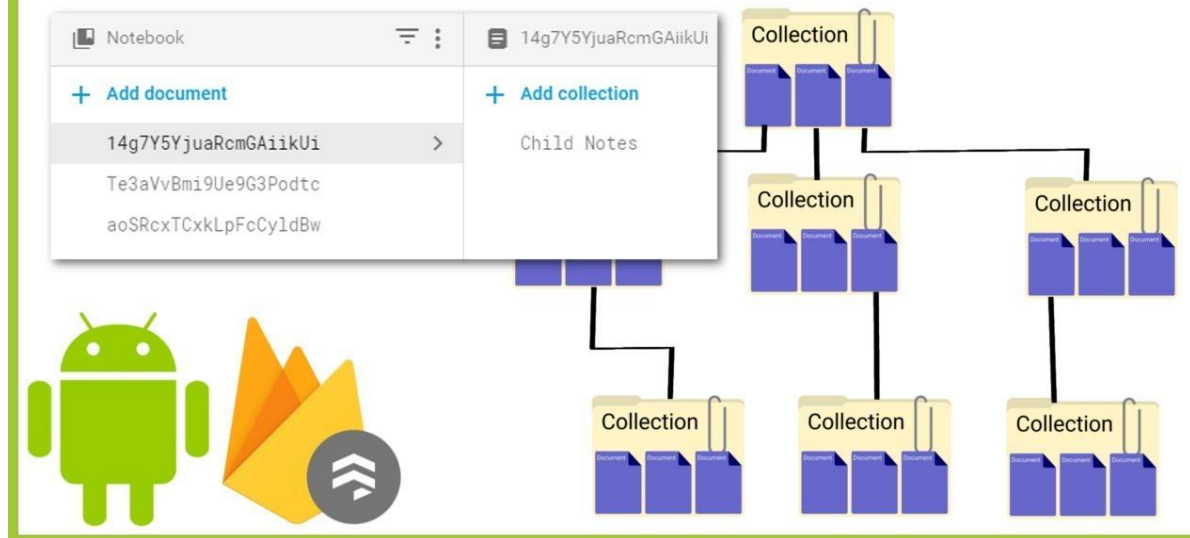
This system was created completely from **scratch through a canvas** on which the many lines that make up the drawing are computed in real-time according to the position of the finger on the screen and the phone resolution.



- Firestore

```
service cloud.firestore {
  match /databases/{database}/documents {
    match /{document=**} {
      allow read, write: if request.auth != null;
    }
  }
}
```

## Cloud Firestore



- **Test definition**

- Operator test: a sequence of tasks to be completed and operator specific questions.
- Students test: **two different protocols** for the native app testers and then we have asked the **same questions** to both groups.
  1. To the first testers group, we have provided the entire sequence of steps to be completed.
  2. To the second one we said to try to understand what to do and how autonomously through the application itself.

To collect **qualitative** and **quantitative information** relating to the execution of the tasks, we decided to ask to the testers some SEQ type questions.



- Operators usability test**

Questions (SEQ)	Average
The platform reflects the idea I had about how it should be made (relative to the features implemented so far).	<b>5.5</b>
I had problems logging into the platform.	<b>4.5</b>
Navigation within the platform is user-friendly/fast.	<b>6.5</b>
I have encountered platform bugs.	<b>6</b>
The organization of a project as a nested folder tree is practical and intuitive.	<b>7</b>
The interactive checklist gives clear and immediate feedback on student progress.	<b>6.5</b>
The registration system for participants in a project is too long/uncomfortable.	<b>1.5</b>
I find the notification system convenient through the various bells buttons.	<b>6.5</b>

- Operators usability test

I didn't understand which notifications I had sent to a specific student.	2
It is not clear whether or not a student has completed a step.	1.5
It was easy to acquire the documents uploaded by the students.	7
It was easy to load the student tickets.	7
It happened I didn't understand if the loading/unloading operation of a document was not successful.	2
I found the visualization system of the internship wheel of a specific student convenient.	7



- **Operators usability test**

Open questions:

- Which features of the application did you find positive?
  - Registration and Check System (Internship Wheel).
  - Notification system through bells, tree organization.
- Which features did you not like?
  - None.
- Do you think there are features to be improved?
  - Feedback system on the actions performed, missing feedbacks on notifications, personalization of student platform credentials.
  - Initial interface.



- Students usability test

Questions (SEQ)	First Group Average	Second Group Average
I had problems logging into the platform.	1.25	1
The sequence and order of the steps necessary for carrying out the cultural exchange project were clear.	6	5.5
There have been times when I didn't know what to do.	3.5	4
I was unable to upload documents through the application.	1.75	1
I was unable to download the flight tickets.	1	1
I was unable to understand how to send my feedback through the internship wheel.	1.5	1

- Students usability test

I found the use of the application boring and unnecessarily hindering the communication procedure with the agency.	1.5	1
I appreciated the application graphics.	5.5	6.5
I find convenient to have all the necessary documents for the flight in one place.	6.5	6
Notifications I received were clear.	6	6.5

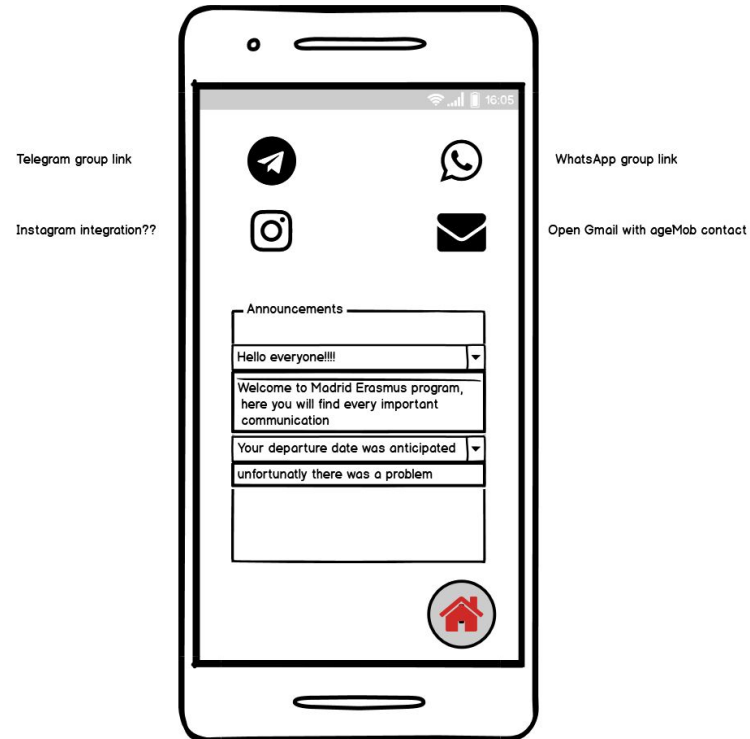
- **Students usability test**

- **Which features of the application did you find positive?**
  - Sending documents and downloading tickets are generally appreciated by everyone.
  - No one has realized the inconvenience of having to do the wheel of the internship by hand (with paper and pen).
- **Which features did you not like?**
  - Small bugs that vary depending on the device or other small deficiencies deriving from the beta (or better alpha) version of the app.
- **Do you think there are features to be improved?**
  - All the advice given is essentially about fixing bugs and improving visual feedback.
  - None of the implemented features has been criticized for how it was made and this satisfies us very much.



- **Future developments**

→ Messages:



→ Import data:

- **Final thoughts**

- **Real people with real problems.**
- If the agency will contact us in future to complete this project **we have the tools and skills to greatly expand the work done.**
- We helped the agency understand **what they really need.**
- In any case, **we have acquired a wide consciousness on the development** in this field that seems to become ever more essential in our society.

# Thanks for the attention!