

Design and Implementations of Mobile Applications



POLITECNICO
MILANO 1863

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Concept

Our idea was to create a social network that enables users to build communities centered around their interests. Users can share their passions, create or join groups, and engage in real-life events.

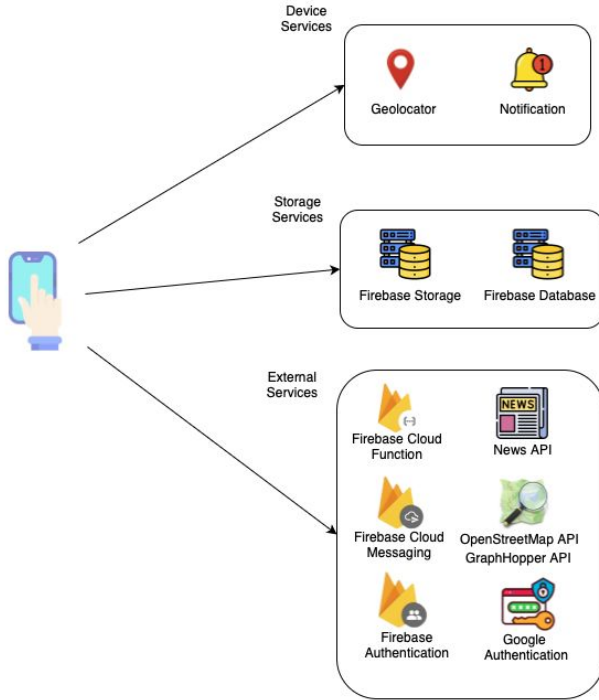
Furthermore, we considered integrating a section where users can share news within their groups, fostering meaningful discussions on relevant topics.



Main Features

- Create and manage groups and events
- Share news within groups
- Follow or unfollow users
- Join or leave groups
- Subscribe to or unsubscribe from events
- Receive notifications for your preferred categories
- Search for users, groups, and events

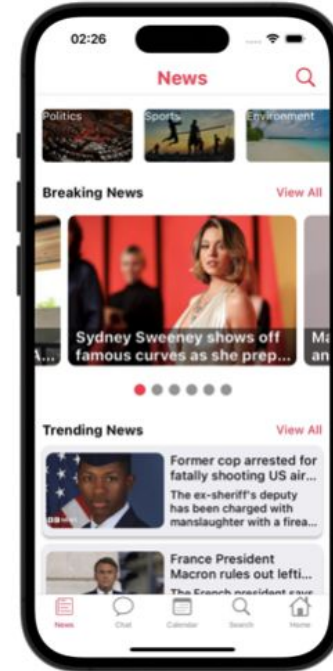
Application Architecture



- Flutter framework
 - MVC pattern
 - Firebase back-end
 - Document-based data structure
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- Maps provided by Open Street Map
 - News provided by NewsAPI

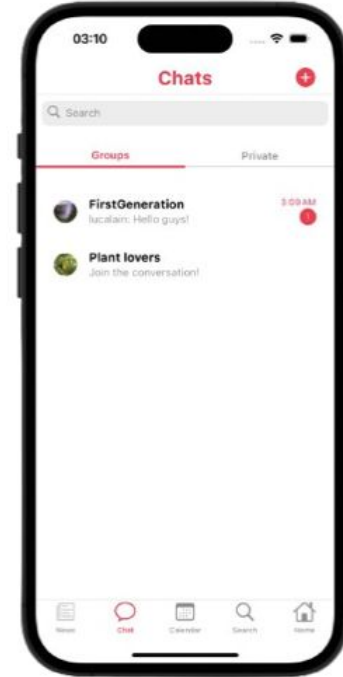
News Page

From this page, users can read the latest news, search for specific articles and view news related to their preferred categories.



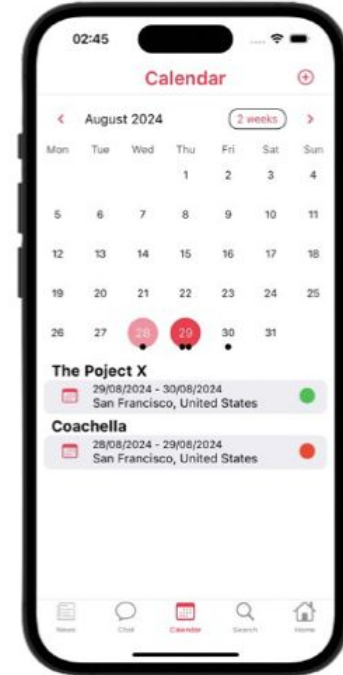
Chat page

On this page, users can view a list of both group and private chats. By clicking the add button in the upper-right corner, they can navigate to the Create Group page.



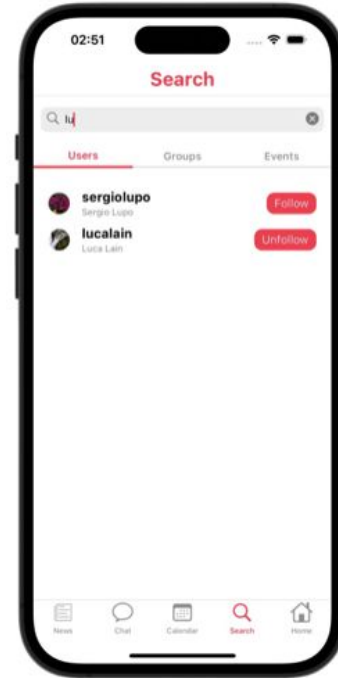
Calendar Page

On this page, users can view both past and upcoming events they have joined or created. Additionally, they can navigate to the Create Event page by tapping the add button in the top-right corner.



Search page

From this page, users can search for accounts, events and groups. They can follow or unfollow users and join or leave groups. For private accounts or groups, users can send a request to follow or join.



Home page

On this page, users can view their profile, which displays their username, first name, last name, preferred categories and a list of events they have created or joined. Additionally, the profile shows the number of groups they are part of, along with the counts of their followers and the people they are following.



Testing

- Unit testing
- Widget testing
- Integration testing

Test Type	Coverage	Number of Tests
Unit Testing	96.5%	22
Widget Testing	90.1%	109
Integration Testing	90%	119

Widget and Integration Testing have been performed in a Mock Environment, which is a simulated setup where real components are replaced with controlled versions. This allows testing specific parts of the application without relying on actual external systems.

Testing

Running all tests together yields the following results:

Test Type	Coverage
Unit Testing	97%
Widget Testing	93%
Integration Testing	90.2%