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FACULTY OF OCEAN ENGINEERING TECHNOLOGY & INFORMATICS

Lost & Found App

CSM3114 FRAMEWORK BASED MOBILE APPLICATION DEVELOPMENT

Prepared for

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1) EXECUTIVE SUMMARY

The prototype endeavors to tackle the prevalent issue of lost belongings in communal settings, offering an efficient solution through a purpose-built Lost and Found app (LAF). Designed for universality, it caters not only to university environments but also to any community where individuals value ethical conduct. The LAF app streamlines the process for users who have lost or found items, promoting a seamless exchange of information (Kristensen, 2021).

1.2) Key Features:

1. **Effortless Lost Item Reporting:** Users can easily report lost items by providing essential details such as a name, description, and the presumed location of loss.
2. **Visual Documentation:** The app allows users to include images of lost items, enhancing the identification process.
3. **User Authentication**: A secure login/signup system, requiring credentials like username, email, and phone number, ensures a verified user base.

1.3) Target Audience:

The primary audience for this prototype encompasses university communities, including students, lecturers, and staff members. Additionally, it caters to any community where the app is deployed, assuming a collective commitment to ethical conduct.

1.4) Objectives:

The prototype aims to:

- Simplify the process of reporting lost or found items within communal environments.
- Foster a sense of responsibility and community engagement through the shared platform.
- Provide a seamless and secure experience for users to interact with the Lost and Found app.

2) PROTOTYPE DESIGN

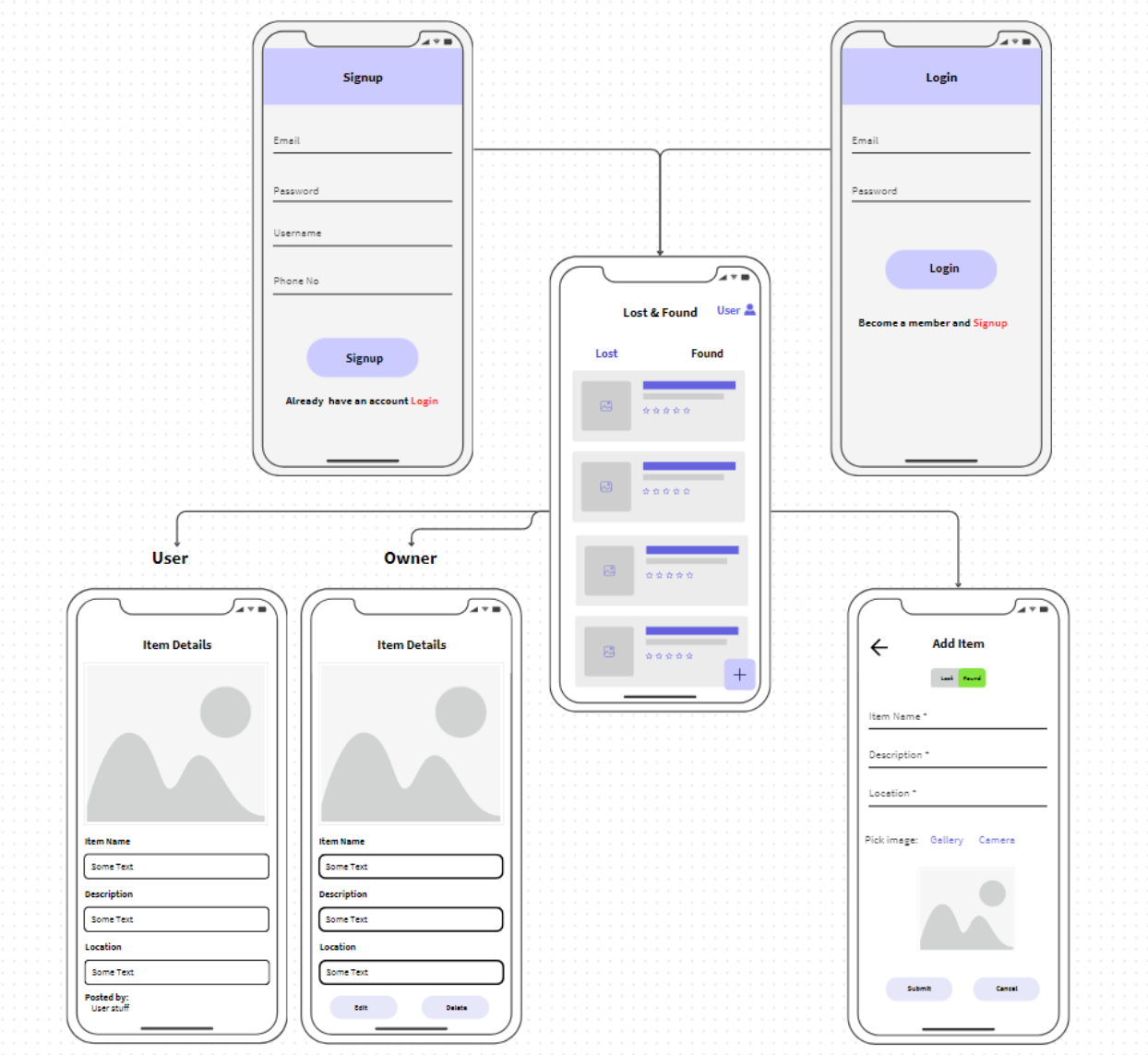

Figure 2.1: Lost and Found prototype

This prototype of LAF provides a clear understanding of the navigation flow the process and how the app travel from a screen to another, the prototype also provide a decent overview of the user interface before being implemented.

3) THE UI FOR THE APPLICATION WITH EXPLANATION

Building upon the prototype overview and navigation flow detailed in Section 2, we will now delve into the visual representation of the Lost and Found app. This section provides an in-depth exploration of the UI implementation, showcasing the actual components that form the user interface.

The following presentation includes screenshots, mockups, and detailed explanations for each UI element. Through this visual journey, we aim to offer a comprehensive understanding of the app's appearance, layout, and the functionalities embedded in each component. Let's explore the user interface of the Lost and Found app, highlighting the design choices and user-centric features that contribute to a seamless and engaging experience.

3.1) Authentication Screens

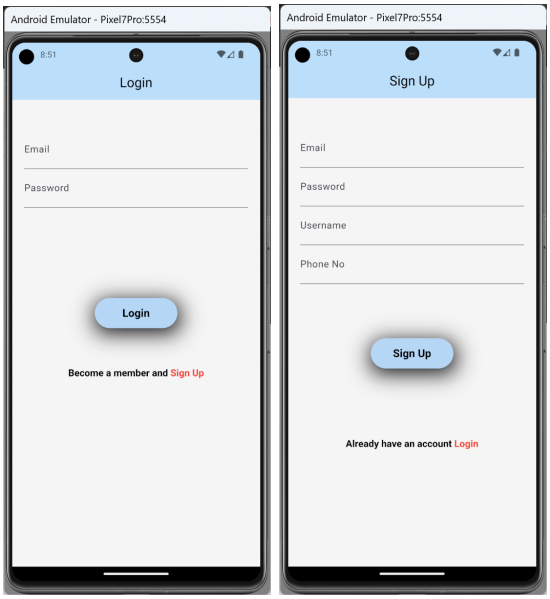

Figure 3.1.1: Login and Signup Screens (authentication)

The authentication process is facilitated through dedicated login and sign-up screens. Users provide essential credentials like a username, email, and phone number, ensuring a secure and personalized experience.

3.2) Lost and Found Screen (Main Screen)

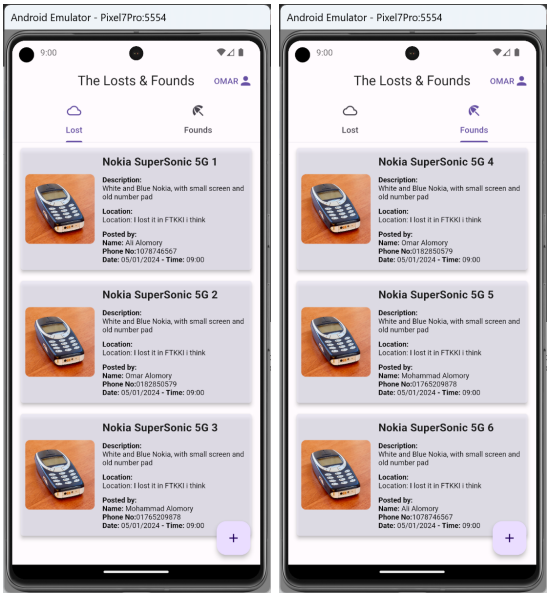

Figure 3.2.1: Main Screen of the app (Lost orFound)

The main screen acts as the central hub, featuring an app bar, logout button, and tabs for "Lost" and "Found" items. Users can easily navigate between categories and access essential functionalities. Under each category tab, users view organized lists of lost or found items. Tapping an item seamlessly redirects users to a detailed view for further exploration. The plus icon button serves as an accessible means for users to report lost or found items. Tapping the button initiates the item reporting process with clear prompts.

3.4) Add Item Screen

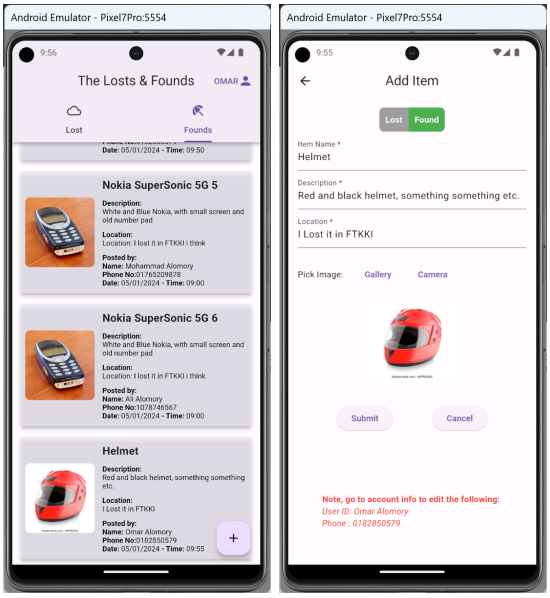

Figure 3.4.1: AddItem screen

3.5) Item Detail Screen

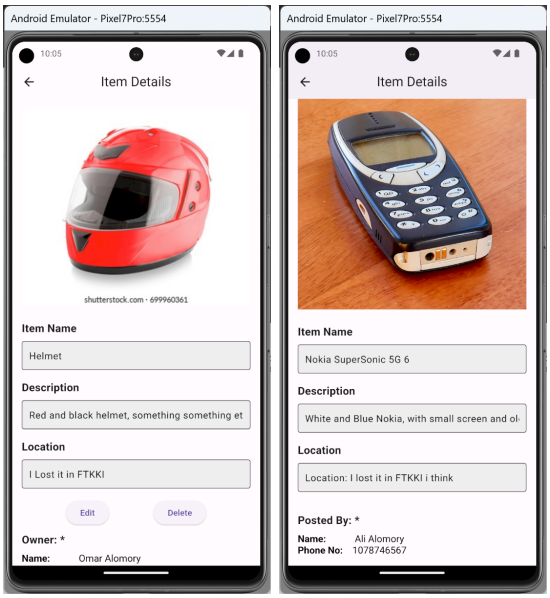

Figure 3.5.1: ItemDetial screen, when user clicks an item

The item details screen presents comprehensive information about a specific item, including visuals and relevant details. Owners have the option to modify item information. If the item does not belong to that user, then the item is displayed in view mode only.

4) POTENTIAL COMMERCIAL VALUE AND THE PRICING OF THE PROTOTYPE

4.1) Market Opportunity

The Lost and Found app prototype presents a unique opportunity to cater to the specific needs of university communities and other communal settings. By providing a tailored solution for efficient lost item management, the app addresses a gap in the market for ethical and secure retrieval.

4.2) Value Proposition

The app's value proposition is centered around its ability to enhance community responsibility and streamline the lost and found process within a university setting. The visual documentation feature adds an extra layer of identification, making it a valuable tool for students, faculty, and staff.

4.3) Monetization Strategy

To sustain the project and cover associated costs, the Lost and Found app will employ a mixed monetization strategy:

4.3.1) Free Access:

- Basic lost item reporting and viewing features.
- Limited data storage for user-submitted item details and images.
- Ad-supported to offset operational costs

4.3.2) Premium Access (University Subscription):

- Customizable features tailored for university settings.
- Expanded data storage for extensive lost item documentation.
- Priority technical support and feature customization.

4.4) Cost Considerations:

To ensure the sustainability of the project, the following cost considerations are essential:

4.4.1) Server Infrastructure:

- Investment in robust server infrastructure for data storage and retrieval.
- Ongoing maintenance costs for server upkeep and security.

4.4.2) Technical Support:

- Provision of dedicated technical support for users, especially premium subscribers.
- Training and documentation to assist university administrators in managing the system.

4.5) Revenue Forecast

A conservative revenue forecast, taking into account the university subscription model, indicates a sustainable financial outlook. Revenue will be generated through a combination of premium subscriptions and strategic partnerships with universities.

4.6) Expansion Opportunities

The success of the prototype within university communities creates opportunities for expansion and collaboration. Potential partnerships with other educational institutions can be explored, leading to a broader user base and increased revenue streams.

5) LESSON LEARNED

Firstly, understanding and interpreting error messages is fundamental. The error messages provided played a crucial role in pinpointing issues within the code. Secondly, leveraging print statements for debugging purposes is an effective technique. By strategically placing print statements, the code's flow was traced, aiding in the identification of problematic areas.

Data validation emerged as a key lesson. Addressing unexpected data structures and handling edge cases, such as empty lists, is essential to prevent runtime errors. Implementing try-catch blocks during asynchronous operations, like HTTP requests, was highlighted as a valuable practice. This helps in preventing app crashes and enhances error handling.

Maintaining code organization is important for readability and maintainability. Breaking down complex functionalities into smaller, manageable functions or methods facilitates issue identification and resolution.

Lastly, dealing with images and files, understanding their storage location, and efficiently calling and displaying them in a user-friendly way presented its own set of challenges. Properly handling image assets and file paths is crucial for a seamless user interface.

6) CONCLUSION

The Lost and Found app development has been an enlightening journey, sparked by a personal experience of losing my glasses. Focused on addressing the common issue of lost belongings, the app evolved with user needs in mind. We prioritized simplicity, accessibility, and a smooth user experience, particularly for university communities. The iterative development process refined features based on user feedback, emphasizing a balance between complexity and simplicity. Lessons learned, such as user-centric design and agile development, lay a foundation for future projects. The app, a result of collaborative development and thoughtful design, is ready for growth and improvement, showcasing the potential of technology to solve everyday problems and enhance communal experiences.

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