



Campus Lost and Found

Team Members: Christian Stewart, Jonathan Hori,
Cristian Gamboa, Randy Arbolaez, Dahiver Guerra

Product Owner: Nicholas Leal

Instructor: Masoud Sadjadi





Table of Contents

1. Introduction
2. Key Features
3. Tools Used
4. System Design
5. Shortcomings
6. Future Features
7. Summary
8. Q&A Section





Introduction

Problem

Reporting and recovering lost items is a frustrating experience with the current system. It makes it difficult for students and staff to know if their item has been reported or found, due to the current system lacking transparency. The process of reporting or retrieving a lost item isn't easily accessible, many students don't know where to look, what steps to report a lost item, or who to talk to. Furthermore, the current system isn't user-friendly, it has you submit a form with little to no communication once submitted. These issues lead to many lost items never being recovered.

Solution

We developed a web and mobile app that lets users view, report and claim lost and found items on campus. you can search and filter as well as claim the items found. The application includes a search and filter feature for easy navigation, letting students and staff quickly look for their items and claim them when they see their lost item.



Features



User Registration & Login

Secure authentication for users via web and mobile platforms.

Token-Based Authentication

JWT tokens ensure secure and stateless backend session handling.

Item Reporting

Report lost or found items with a title, description, image, and location.

Item Listing

Browse all submitted items in a user-friendly, organized UI.

Item Claiming

Admins can mark items as claimed to manage inventory and prevent duplicates.

Search & Filtering

Easily locate specific items using filters and keyword search.

Mobile Support

Fully responsive design plus a native Android app for mobile users.

Admin Dashboard

Admins can view, approve, delete, or manage submitted reports.

Role-Based Access Control

Restricts admin functionality and sensitive actions to authorized users.

Image Uploads

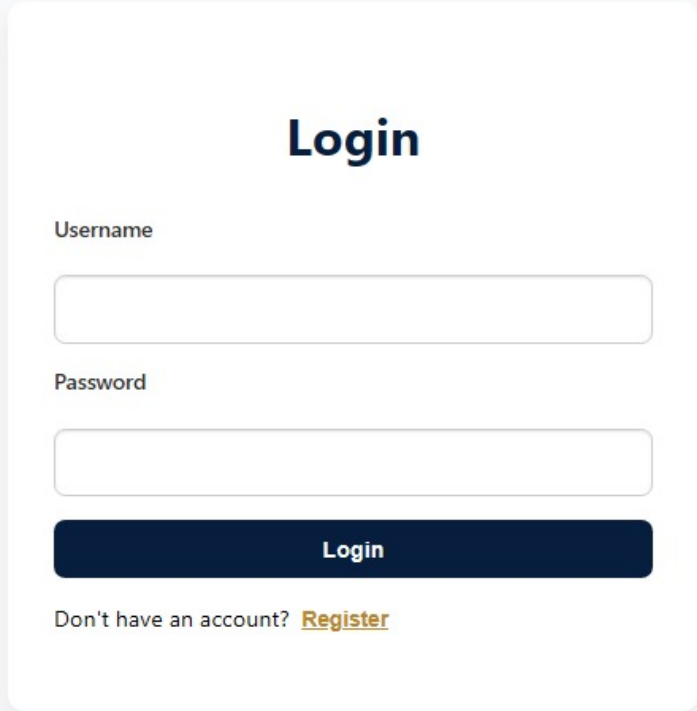
Upload and display item photos. Feature is functional but undergoing refinement.



Features

User Registration and Login

- Accessible authentication system available to users on web & mobile.
- Secured by JWT tokens, enabling stateless backend session handling.
- Real-time feedback for field validation and session validity.
- Accessibility compliant on mobile.



A mockup of a login form. The form is white with rounded corners and a subtle shadow, set against a light blue background. At the top, the word "Login" is centered in a bold, dark blue font. Below this, the label "Username" is positioned above a white input field with a thin grey border. Further down, the label "Password" is positioned above another white input field with a thin grey border. Below the password field is a dark blue button with the word "Login" in white. At the bottom of the form, the text "Don't have an account?" is followed by a link labeled "Register" in a brown, underlined font.

Features

User Item Management

- Effortless reporting with an organized, guided form.
- Filterable, clean item feed that allows users to pinpoint their lost items.
- Secure but frictionless item claiming process.
- Support for both text and image uploads.

Report Lost Item

What was Lost *

Wireless Earbuds in Case

Additional Information

A pair of black wireless earbuds inside a charging case left on a table at GC food court.

89/240 characters

Where was it lost? *

Graham Center Food Court

Image URL

<https://i.ebayimg.com/images/g/N0sAAOSw4vxiZz7j/s-l400.jpg>



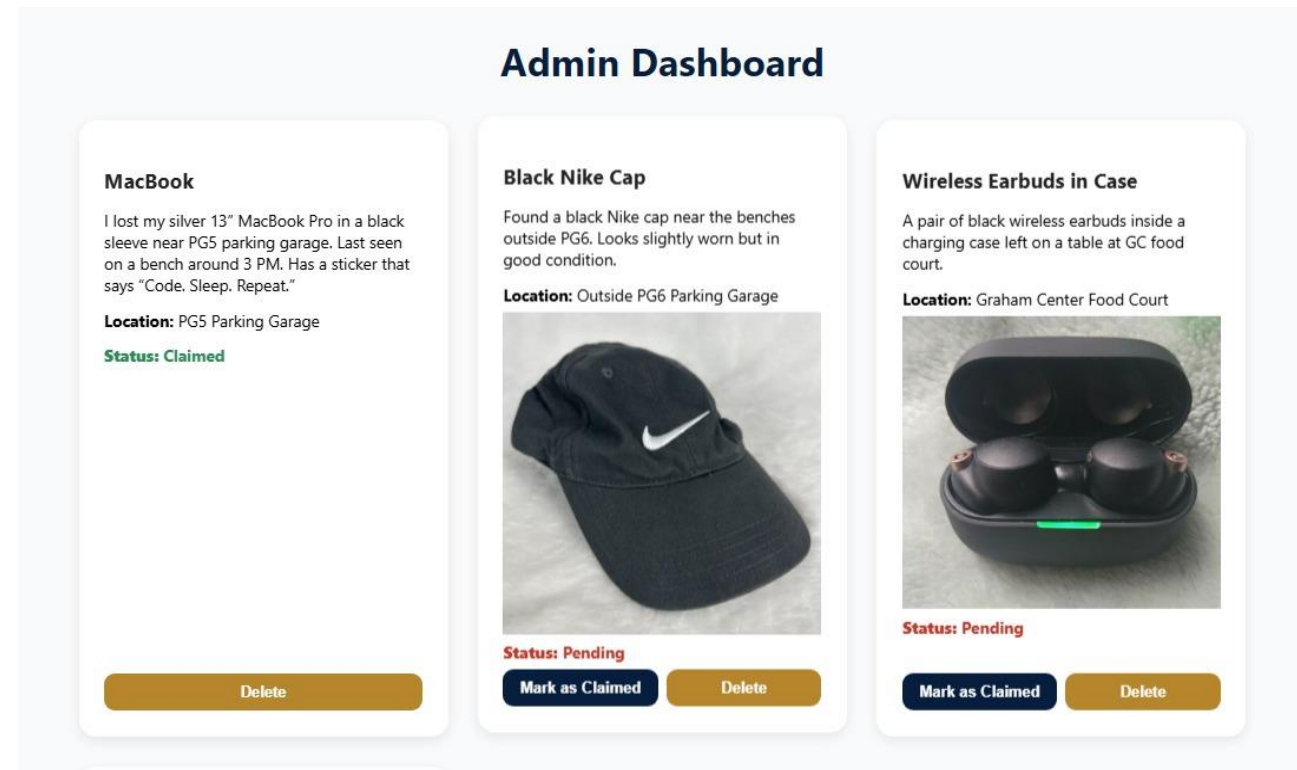
[← Back to Home](#)

[Submit Lost Item](#)

Features

Admin Item Management

- Admins can approve, delete, and resolve user-submitted reports.
- Real-time moderation contributes to
 - Cleanliness of item feeds
 - Privacy of users
 - Security of the website & app
- Admin actions are relayed to a centralized backend/database
 - they are seen by both mobile and web users.



Features

Role-based Access Control

- Complete separation between admin and user views / settings.
- Current permissions system is easily scalable to include other roles.
- Admin authentication system is as flexible and secure as user authentication system
 - In the case of an admin account is compromised, it can be deleted or altered with ease.

Access the Lost & Found

Log in as a student to access the campus lost and found, submit reports in seconds, and help create a more connected and helpful community on campus.



Browse Lost Items

Check the list of recently reported items to see if yours has been found. You can view photos, locations, and descriptions.

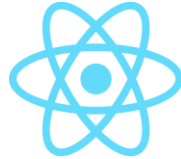
Set up your own Campus Lost and Found!

[GitHub](#)

Tools & Technologies Used



Frontend



JavaScript
Frontend programming language

React
Frontend framework

Vite
Frontend build tool

React Router
Client-side routing for web applications



Tools



Postman
API testing during development

Android Studio
Android IDE

Localhost Servers
Run backend & frontend during development

GitHub
Version control and collaboration platform



Backend



Java
Backend programming language

Spring Boot
Java framework

MySQL
Relational database for data storage

Spring Security
Role-based access control and security configuration

Gradle
Build automation tool for backend



Gradle

System Design

Client-Server Model Architecture

Client-Side

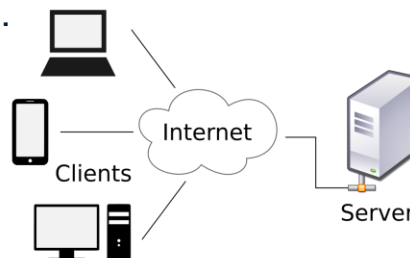
Runs in the user's web browser. Built using React + Vite, it communicates with the backend via HTTP requests using Axios.

Server-Side

A Spring Boot application hosted locally. It handles authentication, data validation, API routing, and database communication.

Database

A MySQL database hosted locally, managing persistent data for users and items.



Subsystems

User Management

Handles user registration, login, and role assignment (e.g., user or admin). JWT tokens are generated upon login for secure access.

Item Management

Allows users to report lost and found items. Admins can approve or delete items.

Admin Dashboard

A restricted-access interface where administrators can view, approve, or remove submitted items.

Database Layer

MySQL stores all user accounts, items, and roles. The backend interacts with the database using Spring Data JPA (Java Persistence API)

Shortcomings

Minor

- No notifications system implemented.
- No support for communication between users
 - Communication is solely mediated by admin.
- No analytics panel
 - Admins can't track usage, nor can they see the history of items listed/claimed.

Major

- Two-factor authentication or email verification is not supported.
 - If a user account is lost, they cannot reset their password.
 - Emails can be claimed by people with no access to them.
- No sanitization of file uploads
 - Files are uploaded directly to our backend without being scanned/checked, potentially allowing the injection of malware.



Future Features

Short Term

- Mobile admin GUI
 - As of now, admin view is limited to the website. The entire system would benefit from the flexibility granted by a mobile admin view / auth.
- Individualized Lost & Found Pages
 - The current system relies on a single centralized database / feed. In the future, this database might be partitioned so that organizations can build their own lost and found pages.

Long Term

- Machine Learning tagging posts
 - Train a machine learning model to tag posts in order to improve filtering for users.
- Map
 - Users will be able to view reported items nearby.
- Analytical tools
 - Track area where items get lost the most, or the most reported items.



Summary

- App will facilitate the registration of the lost items as well as allow users to see the available items and make claims as well as let administration verify items and claims.
- Used React, JavaScript, CSS,HTML for web app implementation.
- Used Java and the Spring boot framework for android implementation.
- Used MySQL to implement the database.
- Helps improve the user experience of the lost and found system as well as make it easier for staff to process lost items.



Q&A Section

FIU

Engineering
& Computing

FLORIDA INTERNATIONAL UNIVERSITY