Project Documentation for Campus Closet

Project Overview

Campus Closet is an innovative digital thrift store that leverages technology to facilitate the swapping of clothes, fostering a sustainable and economical approach to fashion, particularly for students. The app serves as a platform to reduce waste and promote the recycling of clothing.

User Cases

Case 1: Philip
- **Background**: Boston University student
- **Need**: Affordable and appropriate attire for a job interview
- **Solution**: Finds a suit through Campus Closet, saving time and money compared to traditional shopping.

Case 2: Clara
- **Background**: MIT graduate fellow
- **Need**: Wants to declutter her wardrobe and access a wider variety of clothing
- **Solution**: Waits for the expansion of Campus Closet to participate in swapping clothes.

Case 3: Ethan
- **Background**: College freshman looking to define his college style
- **Need**: Diverse and affordable clothing options to explore different styles
- **Solution**: Uses Campus Closet to try new styles affordably and sustainably by swapping clothes instead of buying new ones.

Case 4: Mia
- **Background**: Environmental activist and college student
- **Need**: A platform that aligns with her values of sustainability
- **Solution**: Chooses Campus Closet to reduce fashion waste and promote clothing recycling among her peers.

Technical Documentation

Authentication & Data Storage
- **Firebase Realtime Database** is used for secure user authentication and data storage, handling session management and user data efficiently.

Location-Based Services
- **Google Geocaching API** and **Android Location Services** ensure that users can find and swap clothes within their local area, enhancing the convenience and reducing the carbon footprint associated with shipping.

Auto-Tagging of Uploaded Images
- **Imagga API** automatically tags uploaded images, simplifying the listing process for users and enhancing the searchability of items.

Search and Discovery Features
- Users can perform detailed searches by tags or titles, utilizing optimized Firebase queries for fast and relevant results.

Tinder-Like Swiping Interface
- Implemented using `androidx.cardview.widget.CardView` and Glide, this feature allows users to quickly browse through clothing options in a fun and engaging way.

Challenges and Solutions

Git Version Control
- **Challenges**: Numerous conflicts between commits and difficulties in managing branches.
- **Solutions**: Adopted more rigorous branch management strategies, utilized git stashing and rebasing to maintain a clean commit history.

API Integration
- **Challenges**: Initial inaccuracy in tagging from Imagga API, leading to irrelevant tags.
- **Solutions**: Adjusted the confidence thresholds for tags and implemented filters to exclude common but unhelpful tags.

Time Management and Debugging
- **Challenges**: Integrating features within the tight timeline of the academic semester proved challenging, compounded by extensive debugging sessions that were time-consuming.
- **Solutions**: Enhanced planning and time management were employed, along with more effective debugging practices like systematic logging and using debugging tools more proficiently.

User Interface Design
- **Challenges**: Creating an intuitive and appealing user interface that could operate efficiently across different devices and operating systems.
- **Solutions**: Iterative design improvements through usability testing ensured a more user-friendly interface.

Future Directions

- **Feature Enhancements**: Include secure payment options for premium features, develop a more sophisticated tagging algorithm, and create a personalized explore page.
- **User Experience**: Continuous improvement of the app's UX/UI to ensure smooth and intuitive user interactions.

- **Market Expansion**: Extend the service to include non-students and additional geographical locations.

Citations

- **The Noun Project**: Icons and other graphical assets.
- **Firebase**: For authentication and database solutions.
- **Google Developers**: Location APIs.
- **Imagga**: Image recognition services.
- **Stack Overflow**: Developer community for troubleshooting and learning.