Faculty of Engineering and Applied Science

SOFE 4850U
User Interface and Experience Design

Final Project- PlantPal App

Final Report

Group 8

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Introduction

The goal of this project is to simplify houseplant care for users by providing an easy to use interface and interactive features based on HCI principles. This app offers plant care reminders, health monitoring, and customized notifications, PlantPal helps users to confidently manage their plants. This app provides a seamless experience for both new and experienced plant-lovers with usability, visibility, and flexibility as key design principles.

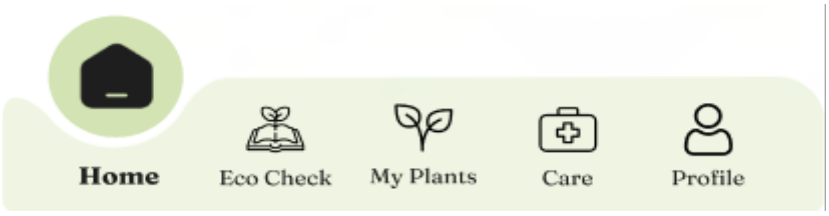
Implementation

The app was developed using a modular approach, focusing on three core features:

1. **Plant Overview Module**:
    - Allows users to manage their plant collection by adding plants and viewing details such as health updates.
    - Includes health indicators (e.g., red, yellow, or green health bars) for easy status recognition.
    - Customizable interface to edit plant details or log health updates.
2. **Care Recommendations Module**:
    - Provides actionable recommendations for each plant, including watering, soil changes, misting, etc
    - Allows users to adjust care schedules and receive reminders for upcoming tasks.
    - Features visual notifications to ensure plants receive timely care.
3. **Environmental Tracking Module**:
    - Focuses on environmental conditions such as light and humidity.
    - Enables users to input their space's conditions and receive tailored care suggestions.
    - Integrates suggestions into the overall plant care plan.

Design Highlights:

- The app's color palette consists of calming pastels to enhance usability and reflect the theme of nature.
- The navbar provides consistent navigation to key sections like home, plant collection, care, and notifications.



- The prototype interactions ensure seamless movement across pages, from login/signup to plant care and environmental tracking.

Results

- A working prototype has been developed, showcasing:
    - A polished user interface with a nature-inspired theme. /

- Functional login, signup, and password reset pages.
- A dynamic "My Plants" page displaying plant health and care options.
- Integration of environmental data for tailored care recommendations.

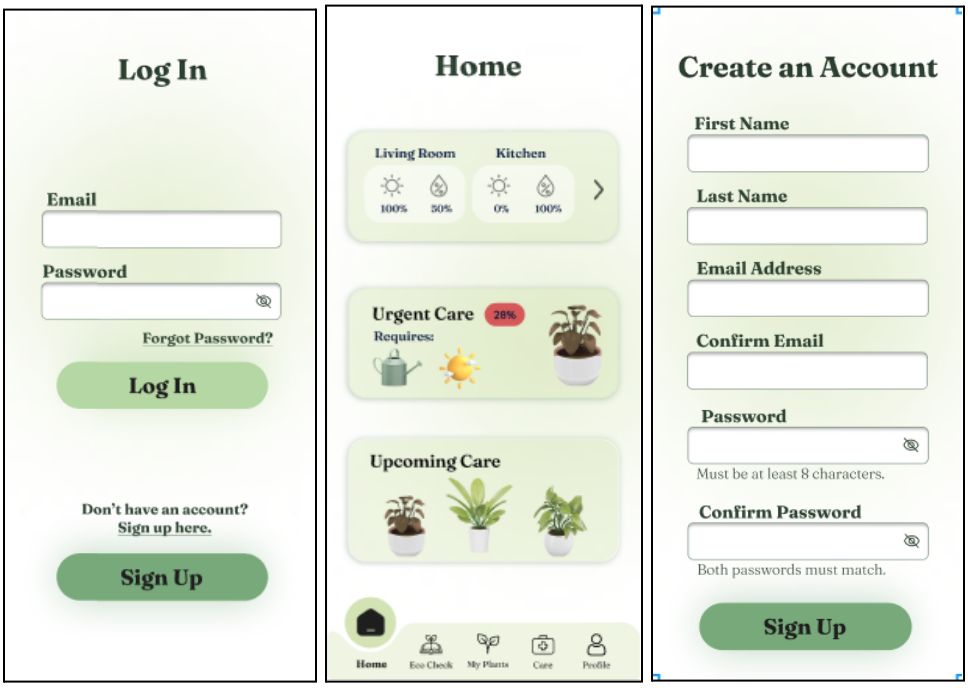
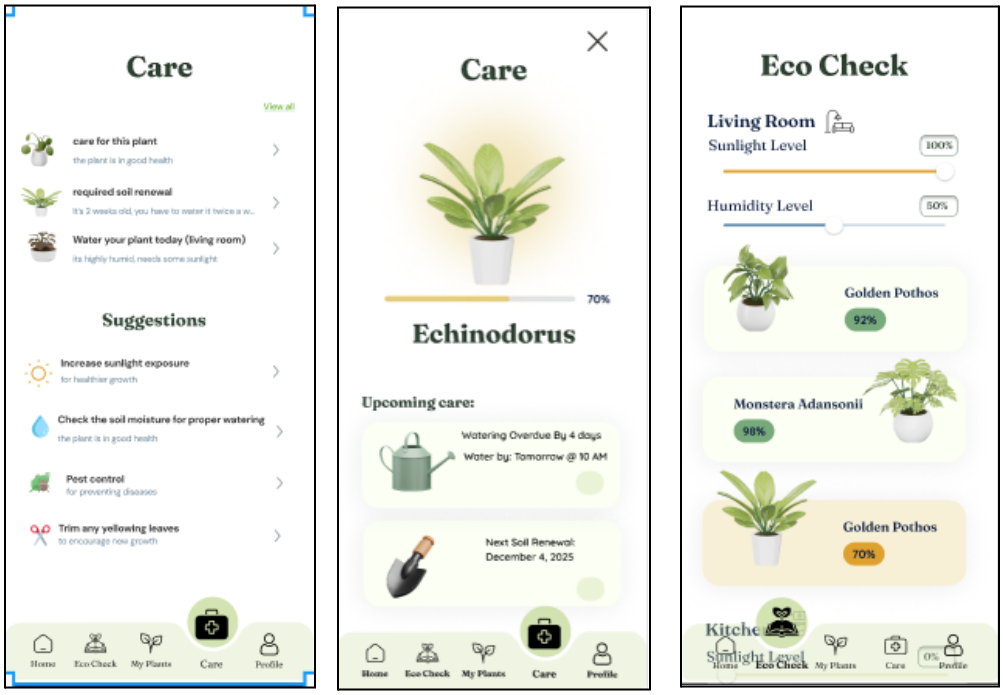


Fig 1,2,3 : left to right respectively, Login Page, Home Page, Sign up page

Fig 4,5,6: left to right respectively, Password Reset Page,**My Plants Page**, where users can view their added plant **Add Plant page**, which user can use to add plants to the list



Figs 7,8,9: left to right, respectively: **Care page** showing overall suggestions for the plant; Care plant page with health status and upcoming care for a specific plant; **Eco check page** showing all the rooms' temperature and humidity levels and what plants are placed in that room with their health status.

Key achievements:

- User-friendly onboarding flow (login/signup process).
- Effective reminders and notifications for plant care tasks.
- Highly visual and interactive elements (e.g., sliders, health indicators).

Implementation Challenges

1. **Technical Challenges**:
   - Integrating dynamic plant health monitoring and linking it to care recommendations required precise data handling.
   - Designing environmental tracking to accept various inputs (light, humidity) while ensuring accuracy.
2. **Design Challenges**:
   - Maintaining a balance between a visually appealing UI and HCI principles for usability.
   - Ensuring consistent navigation while keeping the interface uncluttered.
3. **Resource Constraints**:
   - Limited time and resources affected the depth of testing for real-world scenarios.

Lessons Learned

We realized the importance of incorporating HCI components like usability, error prevention, and feedback mechanisms to create a smoother and more seamless user experience. Additionally, fostering effective communication among team members was crucial for aligning design and functionality goals, ensuring a collaborative effort toward a cohesive and user-centered interface.

HCI components

1. Usability: the app is easy to navigate, understand and properly use the icons
2. Feedback : there is feedback for a successful login and signup pages
3. Error Prevention: the prototype communicates the errors by way of prompts and through labels
4. Visibility: the app is easy to understand through the proper images and well-sized fonts
5. Consistency: there is a use of constant buttons and constant inputs
6. User Centred Design: the app provides customizable options to adapt for the user's preferences and their needs and requirements

Future works

We will implement new features such as:

- The ability to automatically remove plants from the collection.
- Implement an AI component that will help for disease detection and plant-specific recommendations.
- Notification system for updates will be added to the app making it easier for the users to get more information and updates about their plant

Conclusion

In conclusion, the PlantPal app helps users to take proper care of their plant's health by simplifying access to plant-related information while prioritizing user-friendliness and ease of use. In addition, it also allows users to build their personal collection for houseplants and confidently care for their plants by providing access to tools to monitor plant health. This project utilizes user friendly design which helps the users to easily navigate and allows them to learn the controls of the app quickly by providing effective mapping and constraints.