

Accessible Smart Home Interface

Absrtact

For our senior design project, we are developing a smart home control interface tailored to user profiles, including a customizable dashboard, device control, and routine managment. Features include simplified interfaces and customizable profiles for the elderly and disabled.

Development Process

The development process of our project focuses on creating an accessible interface that accommodates users with low vision, low mobility, and hearing impairments. We prioritized user-centered design, conducting research on accessibility standards and tools to ensure compliance with WCAG (Web Content Accessibility Guidelines).

Implemented Features

- Device Control Dashboard
 - Centralized control for all connected devices
- Remote Access
 - Control devices from anywhere using the app
- Voice Assistant Integration
 - Voice commands to control devices
- Notifications and Alerts
- AI-Powered Insights
 - Learn user habits and suggest automations
- Customizable UI

Design Diagram

The front-end interface prioritizes accessibility, ensuring compatibility with screen readers and assistive technologies. High contrast visuals and larger text support users with low vision, while full keyboard navigation aids those with low mobility. Visual cues replace audio feedback for users with hearing impairments.

Conclusion & Final Thought

Overall, our smart home app offers a seamless and Our smart home app provides a seamless, intuitive way to control all connected devices from a single platform. With a user-friendly interface, responsive design, and powerful automation, users can easily adjust lights, manage security, and track energy usage. Designed for accessibility, security, and convenience, our app simplifies smart home management for everyone.

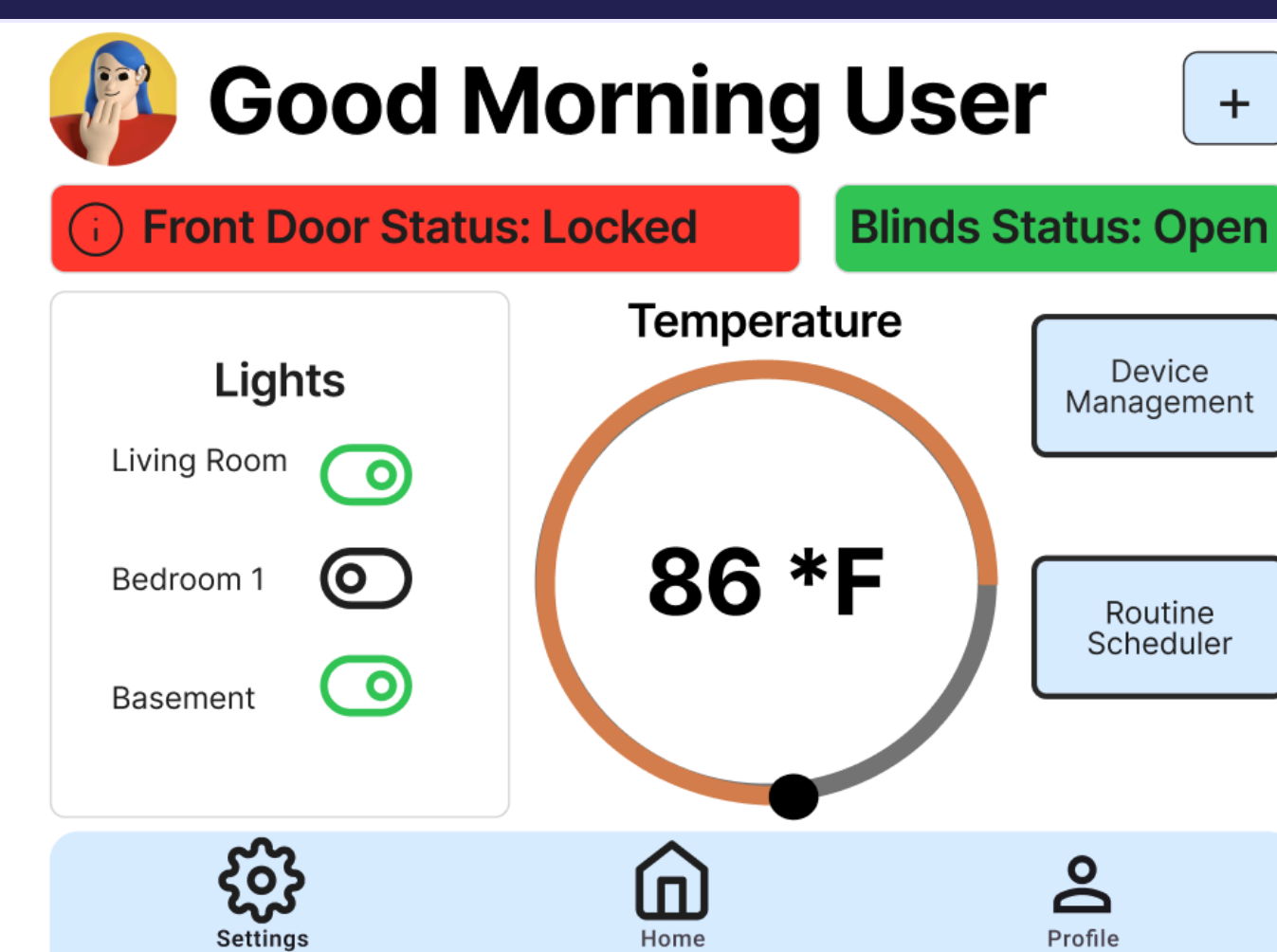
Developers

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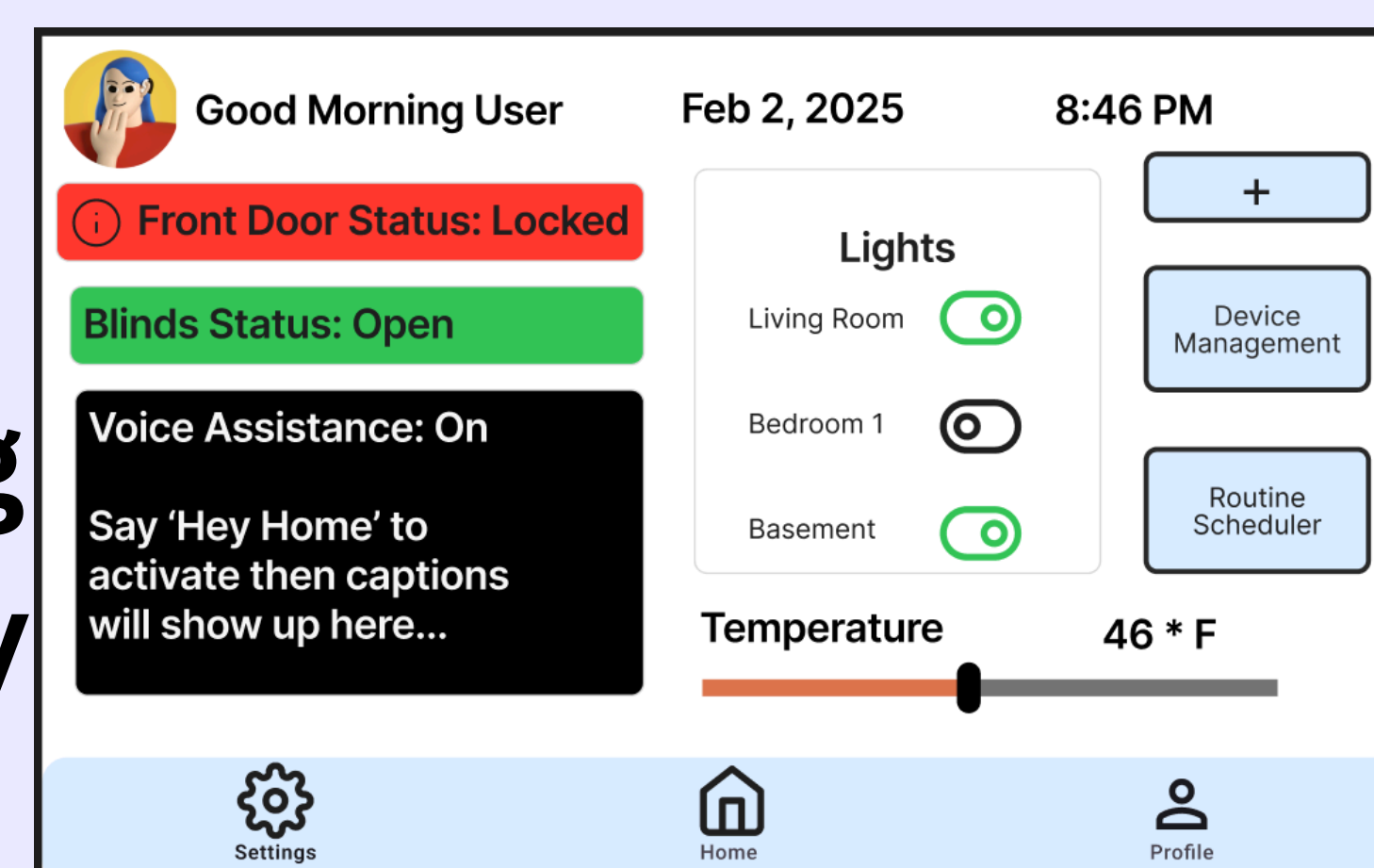
Core Project Layout

The layout prioritizes accessibility, ensuring ease of use for individuals with low vision, low mobility, and hearing impairments. It supports multiple interaction methods and provides clear visual feedback to accommodate different needs.

Original Home Interface



Adapted to Low Hearing and Mobility



Adapted to Low Vision

