Navigation Design

The navigation structure of the mobile application has been designed to support smart home users in easily accessing all essential functionalities such as device monitoring, error reporting, maintenance tracking, and settings configuration. In line with the non-functional requirements such as a simple interface, fast performance, and multilingual support, a hybrid navigation structure combining both top and bottom elements has been implemented.

Entry Point: Login Screen

The application opens with a login screen where the user enters their email/username and password. This screen ensures secure access, complying with the non-functional requirement of data security.

Main Navigation Structure (After Login)

1. Dashboard (Main Screen)

After logging in, users are directed to the Dashboard, where all connected smart home appliances are displayed with icons and real-time status (e.g., active, idle, error). The five supported devices include:

Laundry Machine

Dishwasher

Fridge

Climate

Robot Vacuum Cleaner

Each device card includes a status label and can be clicked to access detailed device information. This structure directly supports the functional requirement of monitoring real-time status and error data through sensors.

Navigation Bars

Located at the top and bottom of the screen, navigation bars includes the following tabs:

Tab Description

A list of all devices with clickable visuals that lead to individual device pages.

Notifications opens a center showing alerts related to maintenance dates, errors, and performance issues.

Settings leads to system settings including language selection, Wi-Fi and cloud status, device management.

Device Detail Pages

Clicking on a device (e.g., Dishwasher) opens a new screen showing:

Current State

Maintenance Information (calculated by serial number & sensor data)

Past Records of performance and errors

This supports both functional requirements: providing feedback on errors and maintenance scheduling via sensor input.

Settings Page

Accessible via the settings icon in the top section of the app, this page allows the user to:

Change the application language

View and manage Wi-Fi and cloud connection status

View all connected devices

Add or remove devices (e.g., remove with a minus symbol)

This page is vital for multilingual support and system flexibility as outlined in non-functional requirements.

Notifications Center

A envlope icon at the top right of the main screen leads to the Notifications Center, where users can view alerts related to:

Device errors

Upcoming maintenance

Connectivity or performance issues

The notification system aligns with the goal of early problem detection and improves user experience.

Design Principles:

Simple Layout: Minimalist icon-based structure with supporting text

Responsive: Designed for quick transitions between pages

Consistent Placement: Navigation bar remains fixed at the bottom across all screens

Multilingual Ready: All labels adapt to the selected language

Stable Offline Support: Basic functionalities such as viewing cached device status remain available in low connectivity

This navigation design fulfills both the functional and non-functional requirements outlined in the planning phase. It provides users with a seamless experience to monitor, manage, and interact with their smart home devices efficiently and intuitively.