Unity University

Department of Computer Science

Mobile Application Development Project

Title: Expense Tracker Functional And Non Functional Requirements

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Expense Tracker App

Functional and Non-Functional Requirements Document

Introduction

The Expense Tracker App is an Android mobile application designed to help users monitor and manage their daily expenses efficiently. The application is developed in Java and operates fully offline, ensuring privacy and security of user data. This app allows users to record, track, and analyse spending habits, making it easier to maintain personal budgets and gain insights into their financial behaviour.

The purpose of this document is to describe the functional and non-functional requirements of the Expense Tracker App. These requirements will guide the development and ensure that the final product meets the expectations of both users and the course project standards.

Functional Requirements

Functional requirements describe the features and capabilities of the application. These are the actions the app must be able to perform to fulfill its intended purpose.

1. Expense Entry: Users shall be able to add new expenses including the following details:
    - Amount of money spent
    - Category of expense (e.g., food, transport, bills)
    - Date and time of the expense
    - Mood at the time of spending
    - Context or notes related to the expense

2. View Expenses: Users shall be able to view all recorded expenses in a clear, chronological timeline. The timeline shall display key information such as amount, category, and mood indicators.

3. Edit and Delete Expenses: Users shall be able to update existing expense entries or delete them individually. This ensures that all records remain accurate and up to date.

4. Search and Filter: Users shall be able to search for specific expenses by keyword, category, or date. Additionally, users shall be able to filter expenses by categories or moods to analyse their spending patterns.

5. Templates for Frequent Expenses: Users shall be able to create templates for frequently recorded expenses. One-tap entry shall allow users to quickly record recurring or common expenses without typing details each time.

6. Recurring Expense Prediction: The app shall analyze historical expense data to identify recurring payments and forecast future spending. This feature will assist users in planning budgets and preparing for variable costs.

7. Budget Management: Users shall be able to set monthly or weekly budgets for different categories. The app shall notify users when they are approaching or exceeding their set limits.

8. Offline Functionality: The app shall store all data locally on the device, allowing full functionality without an internet connection. Users' data will remain private and secure at all times.

Non-Functional Requirements

Non-functional requirements describe the qualities or constraints of the system. These requirements ensure the application is usable, reliable, secure, and performs well under expected conditions.

1. Performance:
    - The app shall allow fast data entry and retrieval, ensuring a smooth user experience.

- Expense records should load quickly, even when there are thousands of entries.

2. Usability:

   - The user interface shall be simple, clean, and intuitive, making navigation easy for all users.

   - Minimal interaction steps shall be required to perform key actions such as adding or editing an expense.

3. Reliability:

   - All data operations shall be transactional to prevent accidental loss or corruption of information.

   - The app shall automatically handle unexpected errors and recover gracefully from crashes.

4. Security:

   - Users' expense data shall be stored securely and encrypted to protect privacy.

   - Optional security measures, such as PIN or biometric authentication, shall be available to prevent unauthorized access.

5. Compatibility:

   - The application shall be compatible with Android devices running version 8.0 (Oreo) or higher.

   - The layout shall adapt to various screen sizes and resolutions to ensure a consistent experience across devices.

6. Maintainability and Extensibility:

   - The application shall be designed using a layered architecture separating presentation, logic, and data management.

- Future updates or additional features, such as cloud backup or analytics modules, shall be easily integrated with minimal changes to the existing system.

7. Portability:

   - The app shall be installable and fully functional on a wide range of Android devices without requiring high-end specifications.

   - Users shall be able to use the app offline without dependence on external servers.

Summary

The Expense Tracker App provides users with a reliable and efficient tool for managing personal finances. Its functional requirements ensure the app performs all necessary operations, such as recording, viewing, and managing expenses. Non-functional requirements guarantee that the app is fast, secure, reliable, and user-friendly.

This combination of functional and non-functional requirements will guide the development of the Expense Tracker App to meet user expectations and fulfil course project objectives.

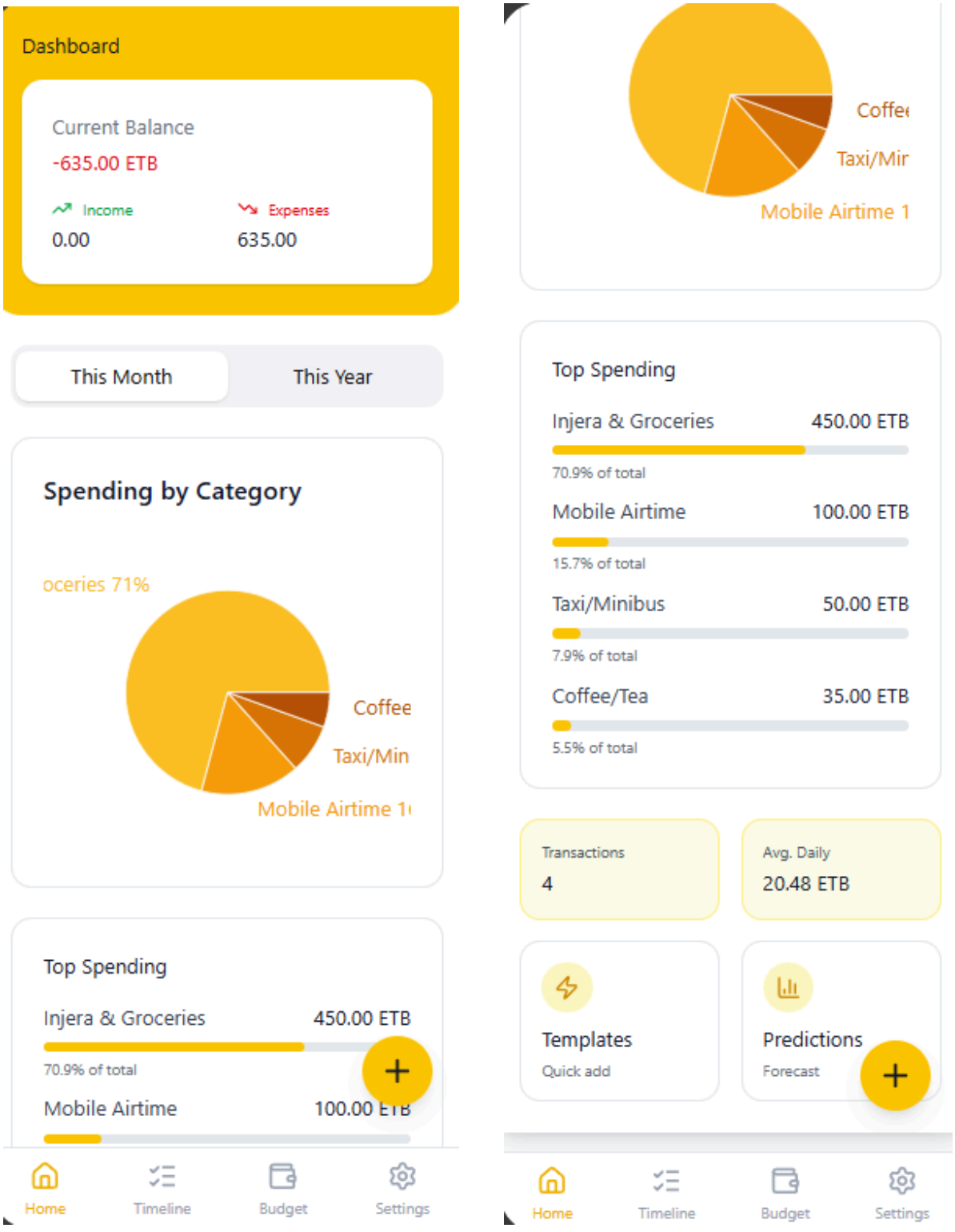

FIGURE: HOME PAGE SCREEN

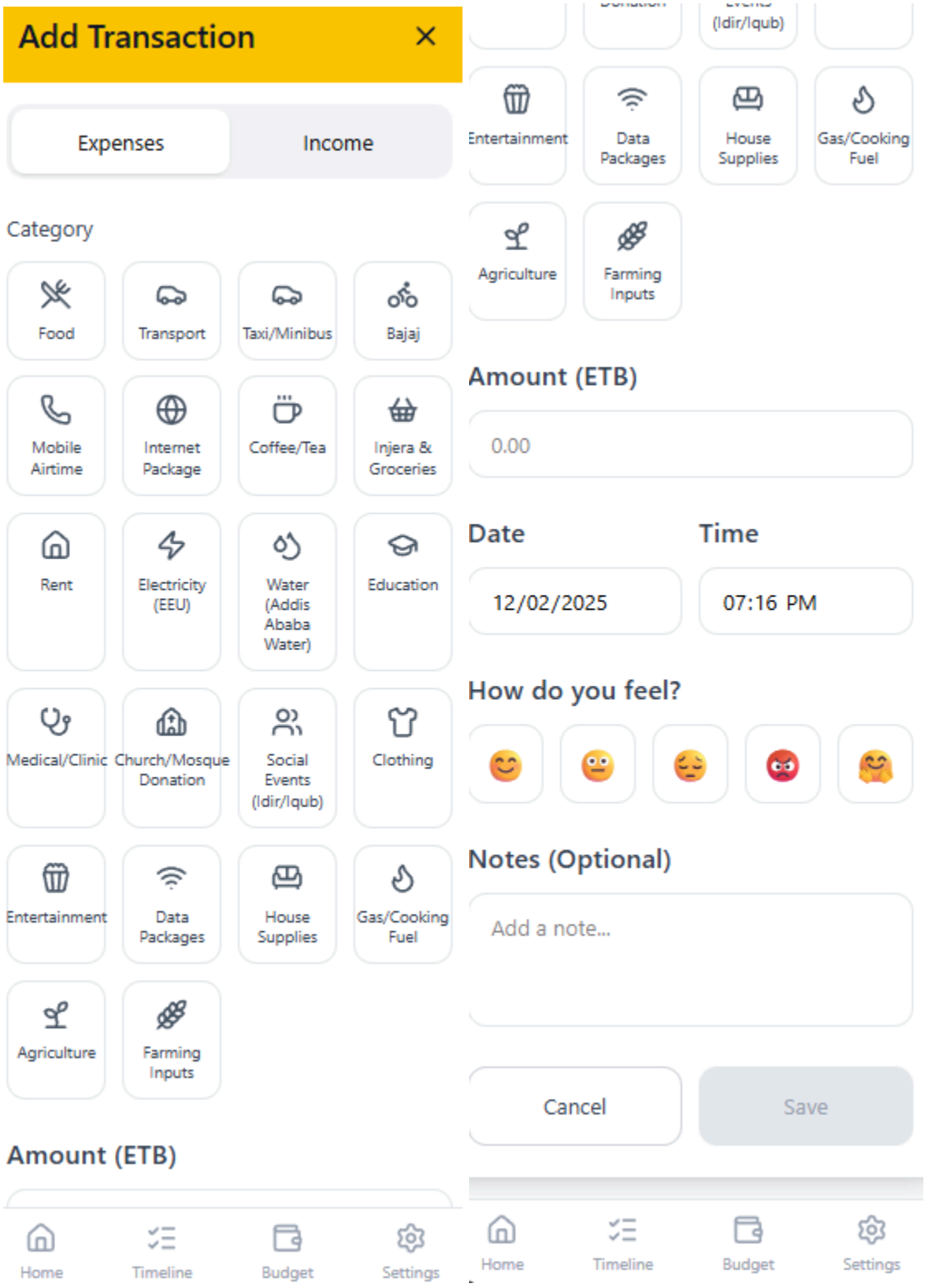

FIGURE: ADD EXPENSE SCREEN

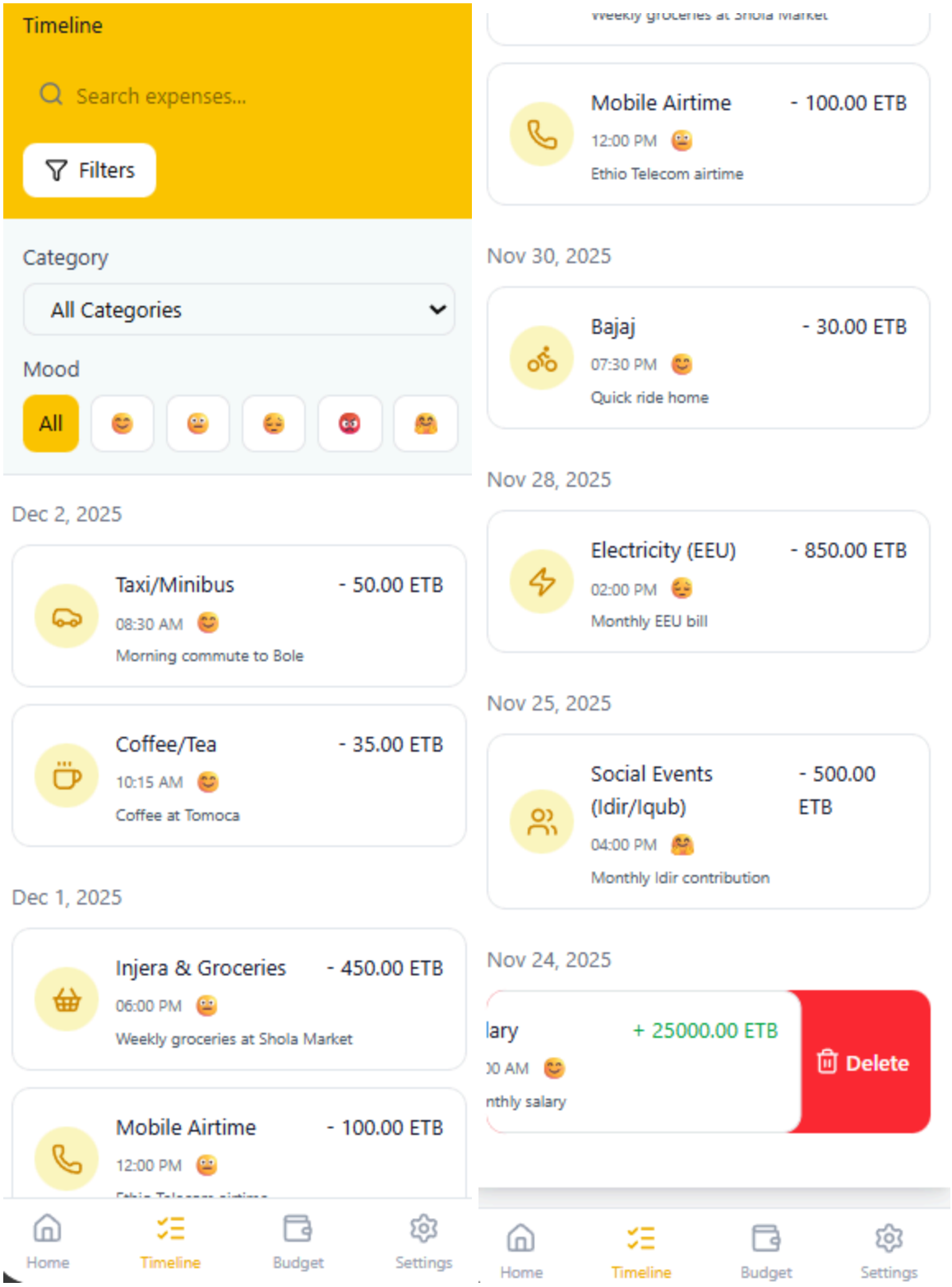

FIGURE: TIMELINE SCREEN

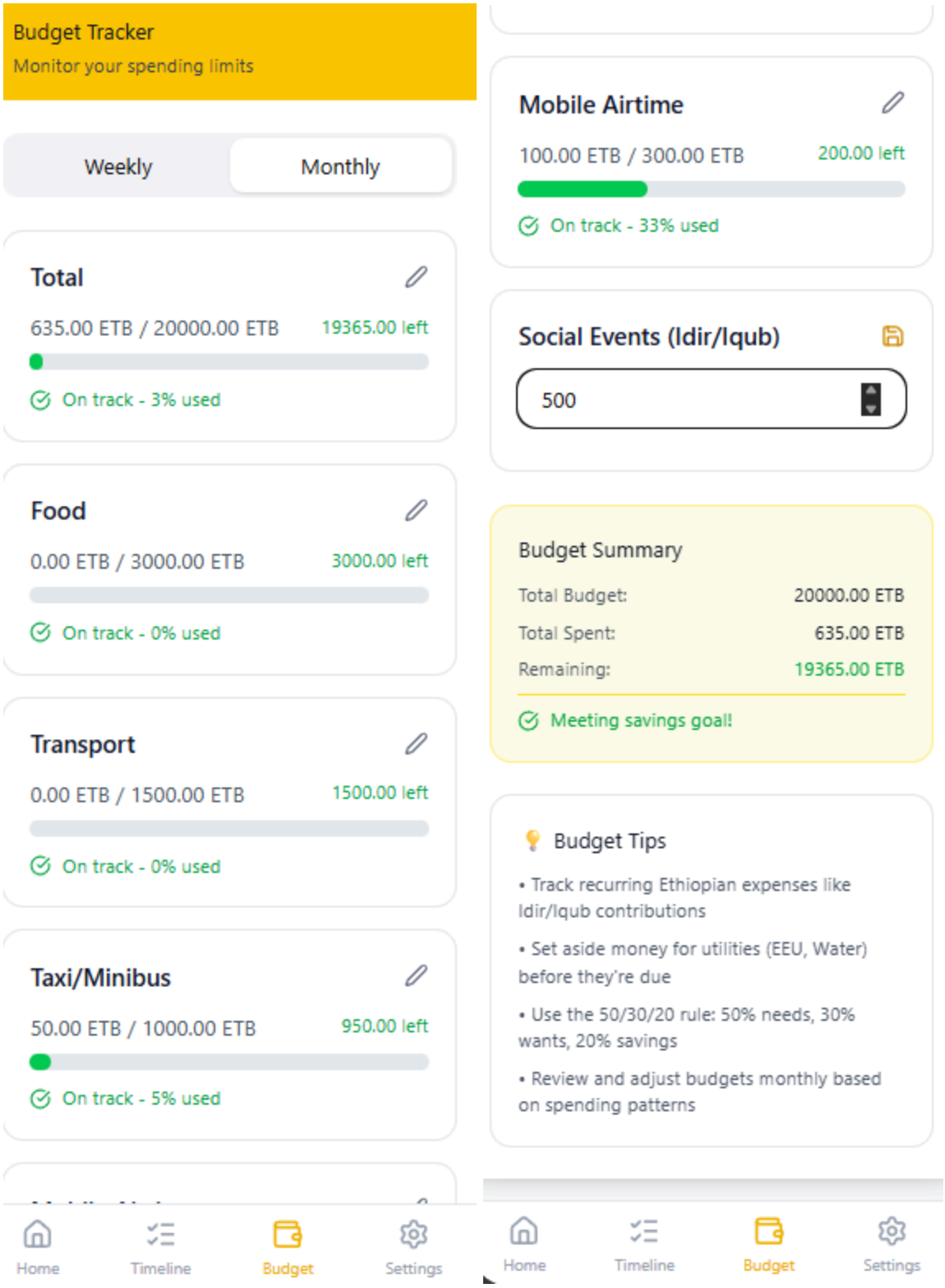

FIGURE: BUDGET SCREEN

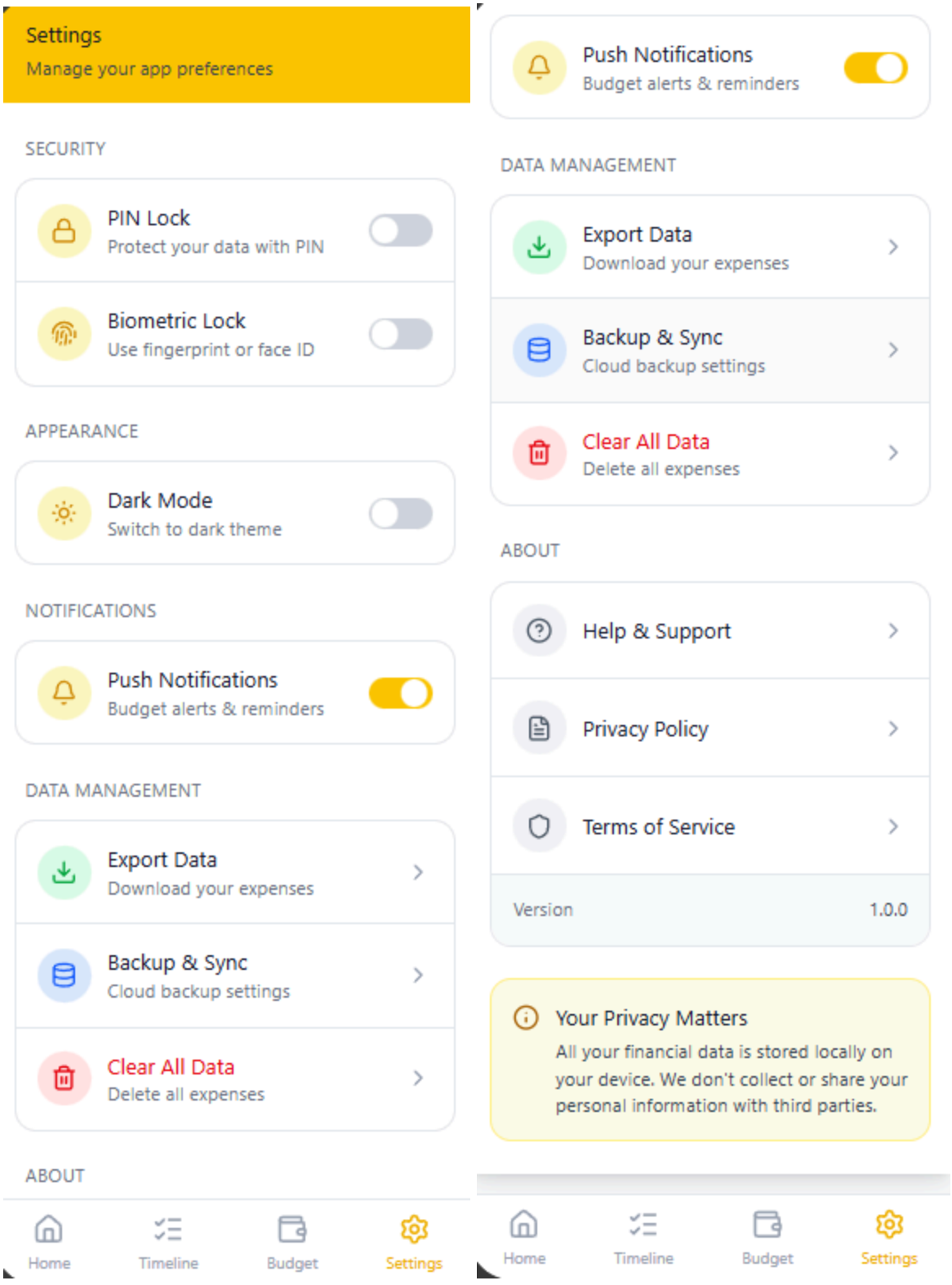

FIGURE: SETTING SCREEN

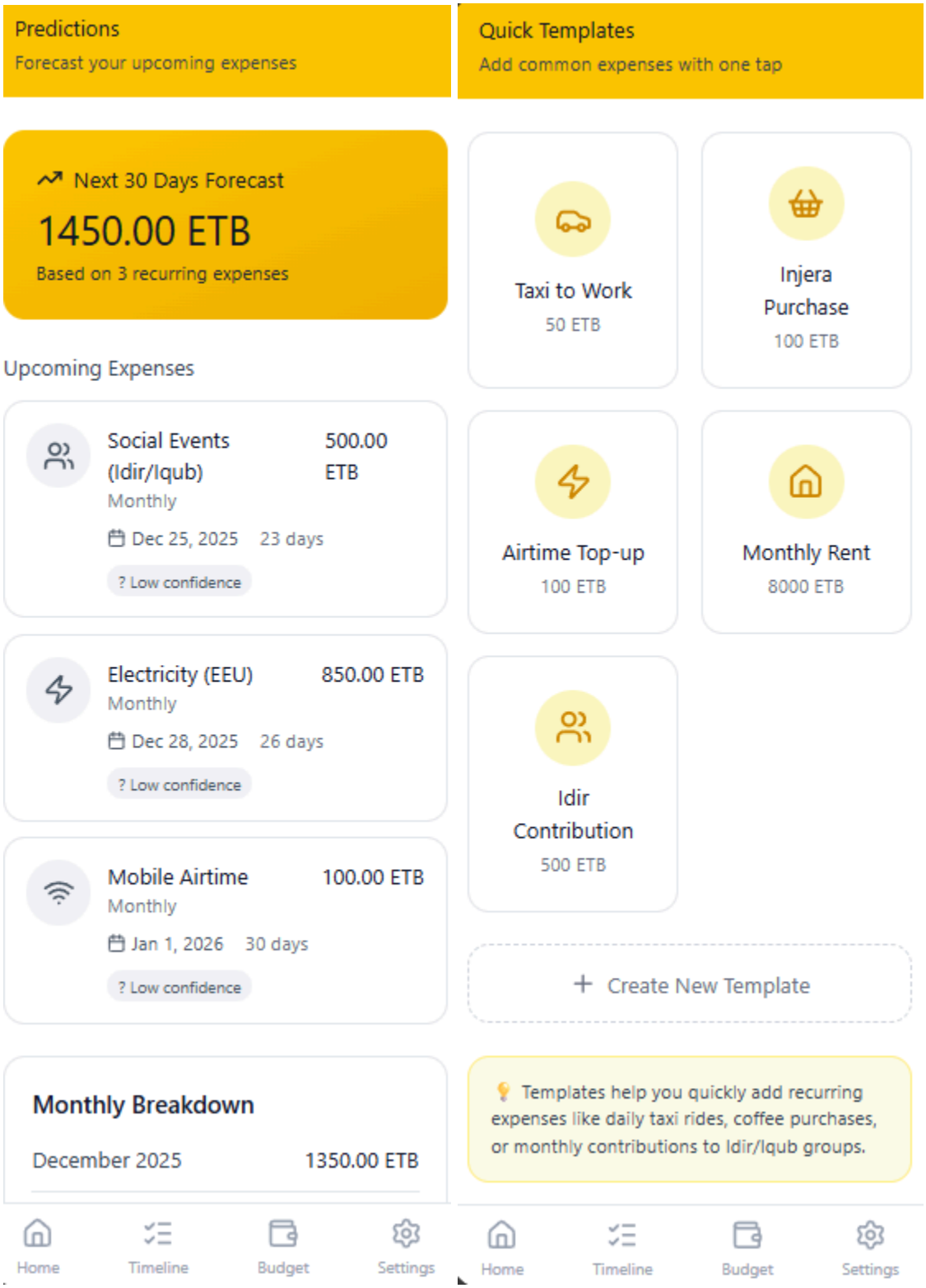

FIGURE: PREDICTION AND TEMPLATE SCREEN