# USER GUIDE

This chapter covers the transition from architectural blueprints and databases to a complete software product. **The CampusExpense Manager** application is built on the Android (Java) platform with SQLite database, ensuring smooth offline operation.

The goal of the chapter is to provide the most intuitive view of the final product through a detailed user manual. The functional screens are designed in strict compliance with the principles of **Sera UI,** focusing on simplicity, vivid colors, and convenient operation for students. The content will go from the validation process, revenue and expenditure management, and budget setting to advanced features such as statistical reporting and biometric security.

### 4.1. Authentication Module

This module is the gateway of the application, ensuring the security of students' personal financial data and providing a smooth onboarding experience. The interface is designed in the style of Sera UI with the main blue tone, creating a feeling of trust and modernity.

#### 4.1.1. Login Screen

- **Purpose:** Allow existing users to access the app quickly and securely.
- **Interface Description: The** interface is minimalistly designed, focusing attention on the input area placed in a card (CardView) that stands out in the middle of the screen. The logo and app name are placed in a formal position at the top.
- **Operation Instructions:**
    1. Enter your registered Email address.
    2. Enter the Password.
    3. Option to tick "Remember Me" to stay logged in for future times.
    4. Press the blue **"Login"** button to access the home screen.
- **UI/UX highlights:** Input fields have visually illustrated icons (e.g., envelopes for emails, padlocks for passwords) that make it easy for users to identify.

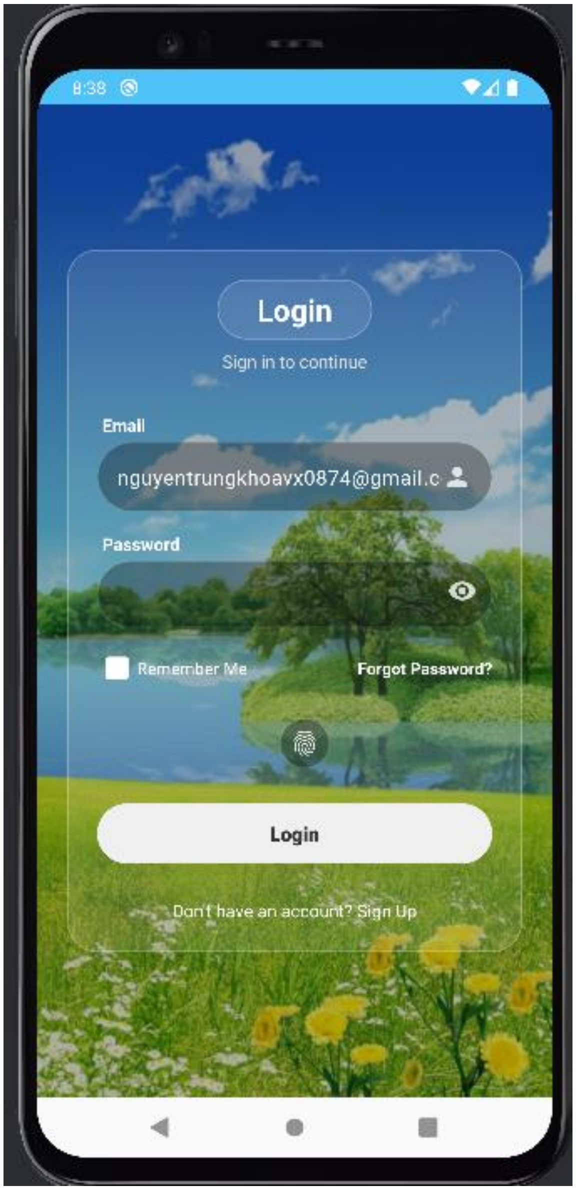


*Figure 4.1. System Login interface.*

### 4.1.2. Register Screen

- **Purpose:** Gather the information needed to create new profiles for students using the app.
- **Interface description:** The screen provides a complete but unobtrusive form thanks to the streamlined arrangement of information fields.
- **Operation Instructions:**

1. From the Login screen, click on the "Sign Up" link.
2. Fill in all the information: Email, Password, Re-enter password, Full name, Address (Dormitory/District) and Phone number.
3. Press the **"Register" button**. The system checks the validity of the data (e.g., the confirmation password must match) before creating an account.

- **Technical & UX Highlights:** The "Show/Hide Password" feature (eye icon) is integrated in both password fields, helping users avoid incorrect data entry errors.


*Figure 4.2. New Account Registration interface with full student information.*

### 4.1.3. Forgot Password Flow

To support users when they forget their login information, the application implements a secure 3-step password recovery process through OTP (One-Time Password) codes.

**Step 1: Request to send an OTP code** Users enter their registered email so that the system can identify the account to be restored.

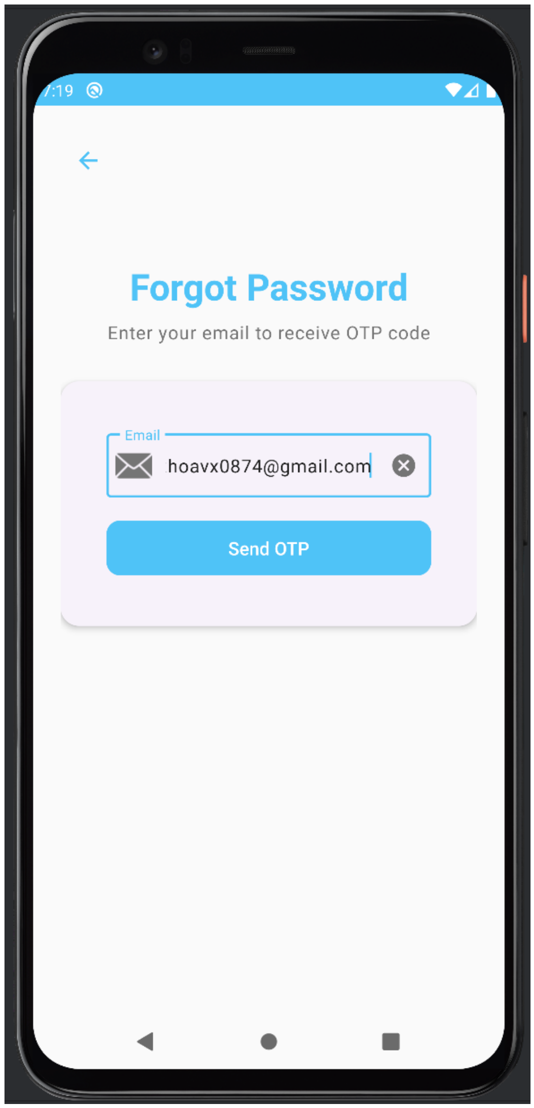


*Figure 4.3a. Step 1 – Enter your email to receive the verification code.*

**Step 2: Authenticate the OTP code** The system sends a 6-digit code to the email. Users need to enter this code correctly within the allotted time (with a countdown timer displayed on the screen) to prove account ownership.

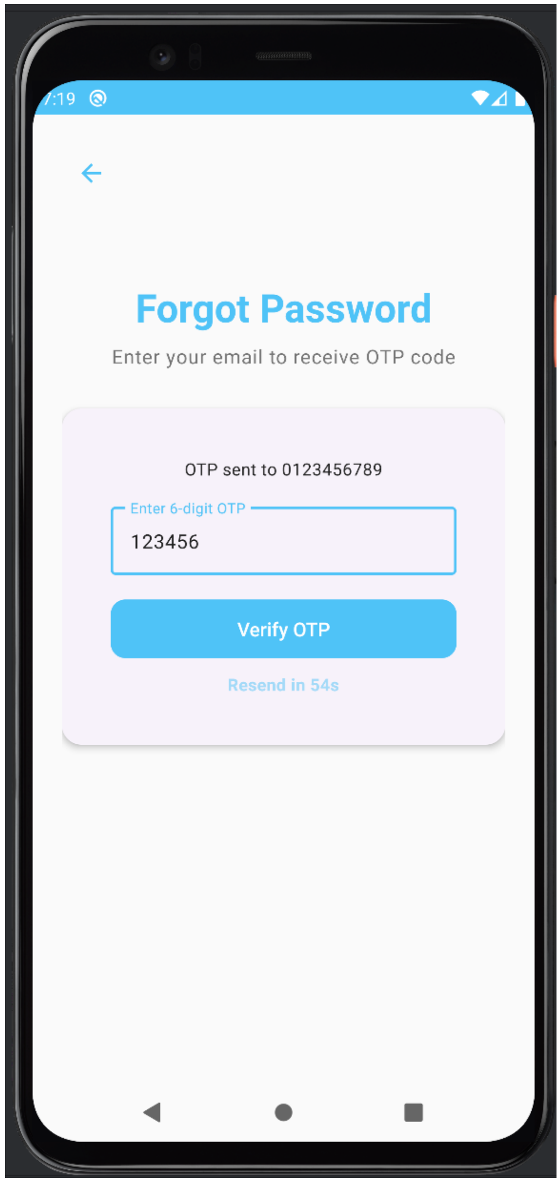


*Figure 4.3b. Step 2 - Enter the 6-digit OTP code with a secure timer.*

**Step 3: Set up a new password** After successful OTP authentication, users are directed to the password reset screen. Here, they enter a new password and confirm it again to complete the process.

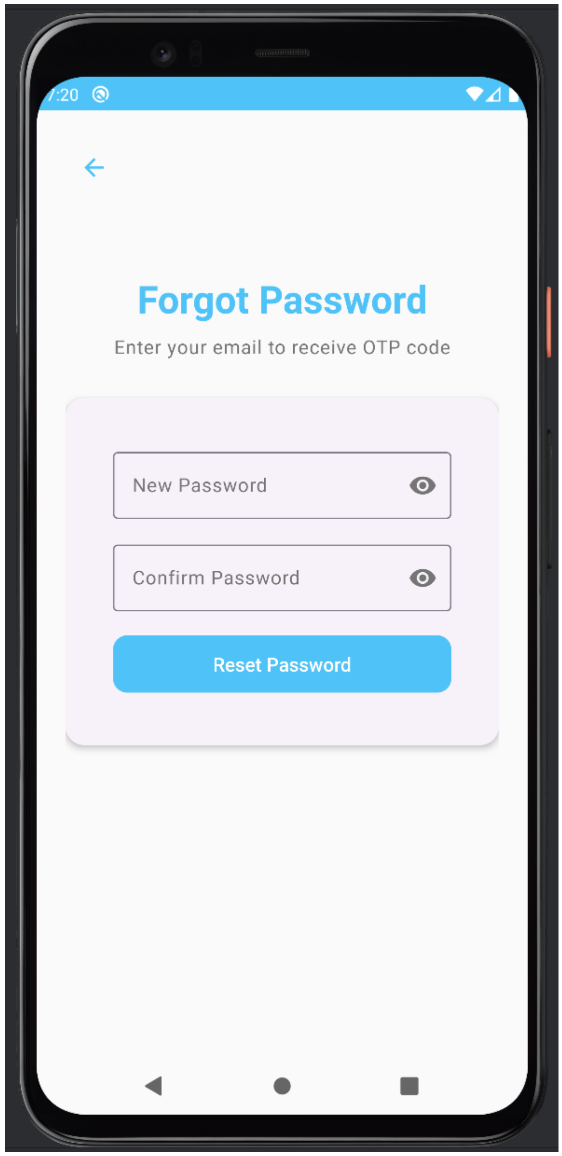


*Figure 4.3c. Step 3 – Set up a new password and complete the process.*

## 4.2. Dashboard & Expense Module

This is the app's control center, where users monitor their financial health and perform daily note-taking operations.

### 4.2.1. Dashboard

- **Purpose:** To provide an instant overview of a student's financial situation as soon as the application is opened.
- **Interface Description:**

- ○ **Balance Card:** Most prominent at the top with a light purple background (Sera UI), showing the current balance. Green indicates a positive balance.
- ○ **Income/Expense Cards: The** two cards below clearly separate the Total Revenue and Total Expenditure for the month, using a visual illustration icon (Pocket & Winged Money).
- ○ **This Month Summary Area:** Shows the top categories at a glance.
- ○ **Quick Actions:** Two large buttons provide instant access to the "Add Deal" or "View Budget" function.

- **UI/UX highlights:** The Bottom Navigation Bar is modernly designed, and the icon of the selected tab (Dashboard) is highlighted with a separate colored background.

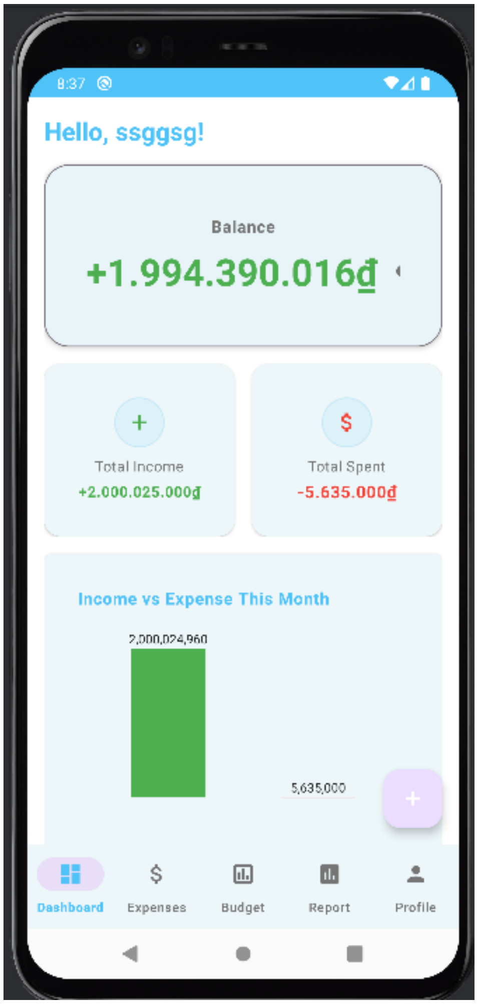


*Figure 4.4. The Dashboard screen displays an overview of the balance and function shortcuts.*

### 4.2.2. Expenses List

- **Purpose:** To allow users to review their spending history, search and filter recorded receipts and expenditures.
- **Interface Description:**
  - The Search Bar at the top helps to quickly look up by transaction name.
  - Filter Chips: "All", "Income", "Expense" for quick data classification.
  - Sort by button: Shows the latest deal at the top by default.
  - The light purple plus (+) FAB (Floating Action Button) always floats in the lower corner to add new deals from anywhere in the list.
- **Empty State:** When there is no data, the application displays a subtle "No transactions yet" message instead of leaving the screen blank, which improves the user experience.

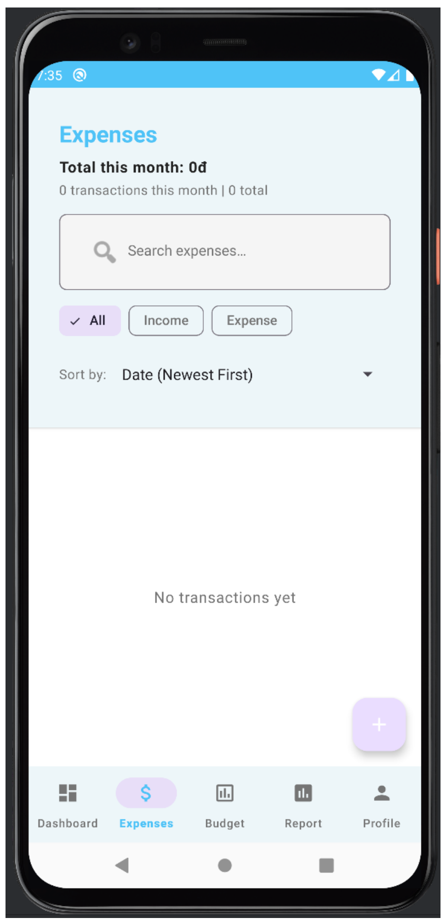


*Figure 4.5. Deal list management screen with filters and search.*

### 4.2.3. Add Transaction function

- **Purpose: The** input interface is optimized for users to record spending as quickly as possible (it takes less than 5 seconds).
- **Interface Description:**
  - **Switch transaction types:** The two large buttons "Expense" and "Income - White" at the top help avoid confusion.
  - **Quick Add:** Popular category suggestion buttons (Books, Breakfast, etc.) help fill in quickly without typing.
  - **Enter the amount:** Large, clear input box with currency (VND).
  - **Date and time selection:** Automatically retrieves the current real-time, but allows users to change it using DatePicker/TimePicker if they need to enter a compensation for the past.
  - **Recurring Expense:** Checkbox allows marking recurring expenses (such as accommodation fees, network fees) for the system to automatically remind.
  - **Invoice Photography:** Built-in camera/gallery button to save proof of spending.
- **Operation Instructions:**
  1. Select the type of transaction (Revenue or Spend).
  2. Enter the amount and select Category.
  3. Add a note or photo of the invoice (if needed).
  4. Press the "Save" button (purple ✓ tick in the lower corner).

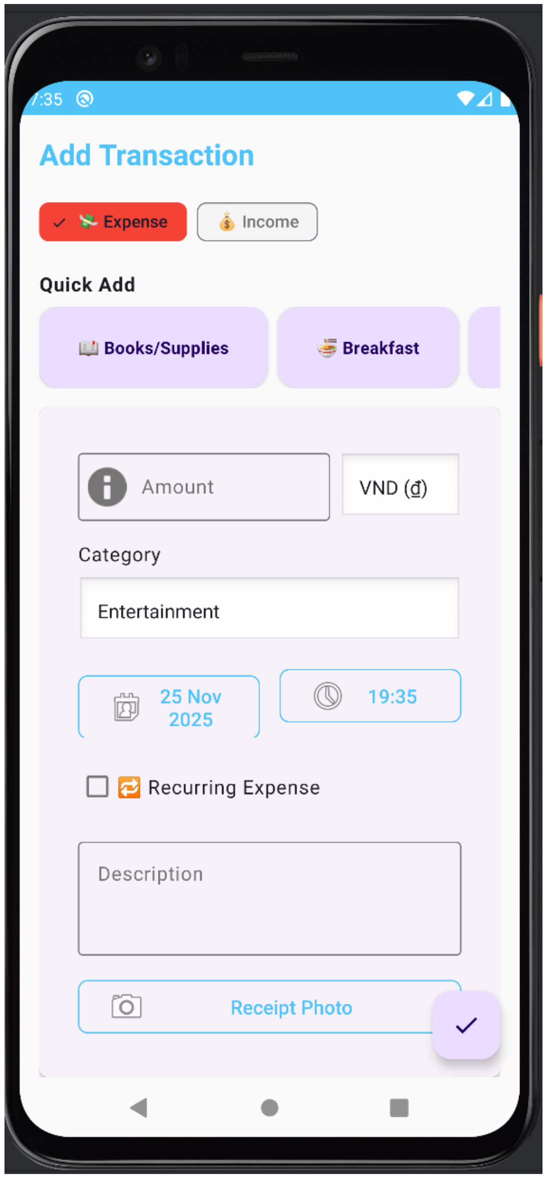


*Figure 4.6. The interface adds detailed transactions with invoice capture and quick entry features.*

### 4.3. Budget Management module

This function helps students establish financial discipline by setting spending limits for each category or overall.

#### 4.3.1. Set a New Budget (Set Budget)

- **Purpose:** Create a time-bound spending plan to control cash flow.
- **Interface Description:**

- **Enter the amount:** Large input box to determine the budget (Example: 200,000 VND).
- **Select a category:** Allow budgets to be applied to a specific group (such as Dining) or "All categories".
- **Budget Cycle:** Flexible option by Week or Month. The app automatically calculates and displays the start and end dates right below for users to easily follow.
- **List of available budgets:** Displayed right below the input form to avoid duplicate creation.

- **Operation Instructions:**

  1. Enter the limit amount.
  2. Select the category that applies.
  3. Select the cycle (Week/Month).
  4. Click **"Save".**

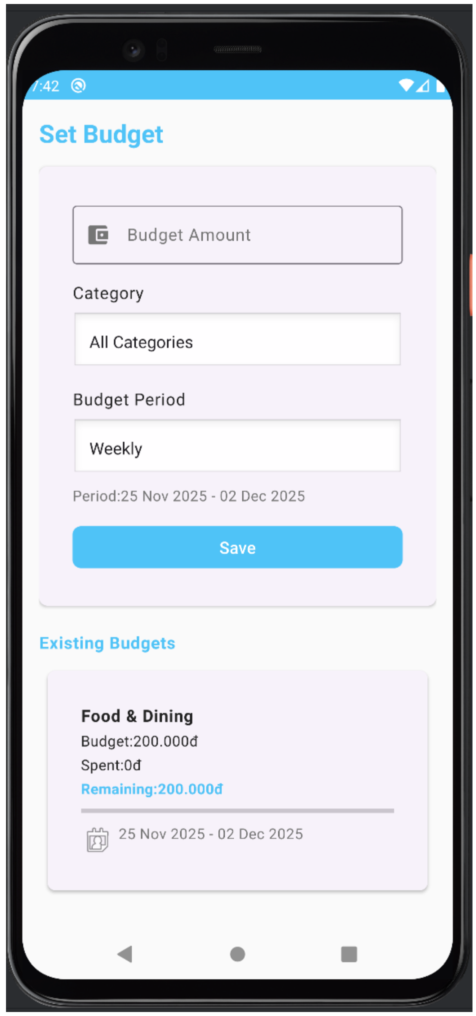


*Figure 4.7. The interface sets the spending budget by week/month.*

### 4.3.2. Budget Dashboard

- **Purpose:** To help users know how much more money they are allowed to spend in the term.
- **Interface Description:**
    - Displays a list of active budget cards.
    - **Progress Bar:** Visualize consumption levels. (Will change color if it is close to crossing the threshold).
    - **Insights:** Clearly displays the Spent, Remaining, and Percentage (%).
- **UI/UX highlights:** Blue (Remaining) creates a sense of peace of mind when the budget is still abundant.

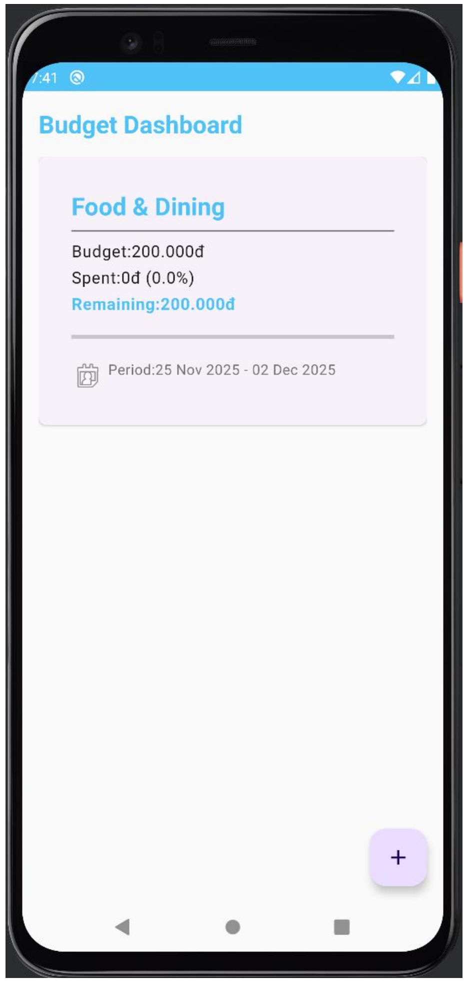


*Figure 4.8. The screen tracks the progress of budget implementation.*

### 4.4. Correction and Update of Data

The app allows users to modify mistakes or re-update plans at any time, ensuring that the data is always accurate.

#### 4.4.1. Edit Transaction

- **Purpose:** Correct incorrect income and expense information or delete invalid transactions.
- **Interface description:** Similar to the "Add New" screen, but the data fields are pre-populated with old information.
- **Additional Features:** A prominent red **"Delete Transaction" button** at the bottom, which requires confirmation before permanently deleting it from the database.

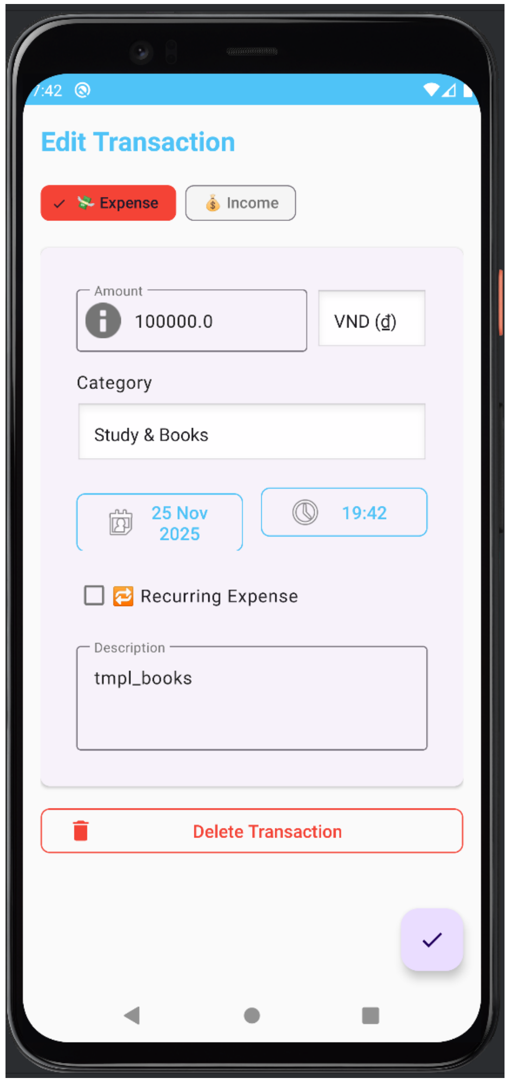


*Figure 4.9. The interface edits a transaction in detail.*

### 4.4.2. Edit Budget

- **Purpose:** Change your spending limit when actual circumstances change (e.g., being sent more money by your family, so you can increase your food budget).
- **Interface Description:** Allows to change the amount, category, or time of application.
- **Action:** Users can update new metrics and click "Save" or delete this budget using the "Delete Budget" button with a red outline.

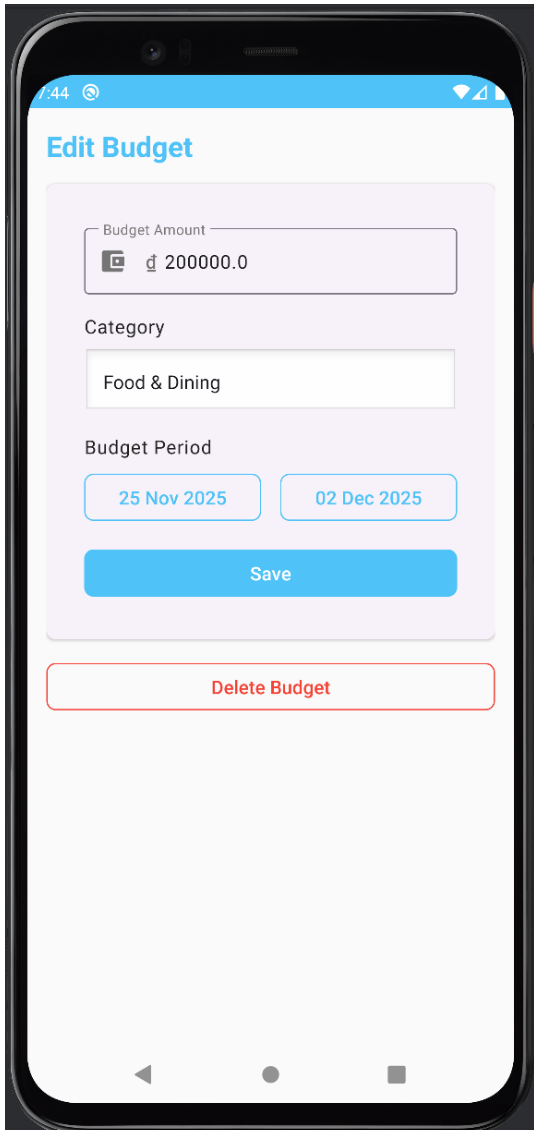


*Figure 4.10. Update or delete an established budget.*

### 4.5. Reports & Analytics

To help students not only take notes but also understand their financial habits, the app integrates a powerful set of data analysis tools, visualizing dry numbers into vivid charts.

#### 4.5.1. Filter and Report Summary

- **Purpose:** Allow users to zone data at custom intervals to view the most accurate report.
- **Interface Description:**

- **Date Range Picker:** The two large "Start Date" and "End Date" buttons at the top make it easy for users to select a timeline (e.g., view spending during a 2-week internship trip).
- **Summary Card:** Displays the total amount spent, the number of transactions, and quickly lists the categories that account for a large proportion during the selected time period.

- **Operation Instructions:**
    1. Tap "Start Date" and "End Date" to select a date.
    2. The system automatically reloads.
    3. See the aggregated results right below.

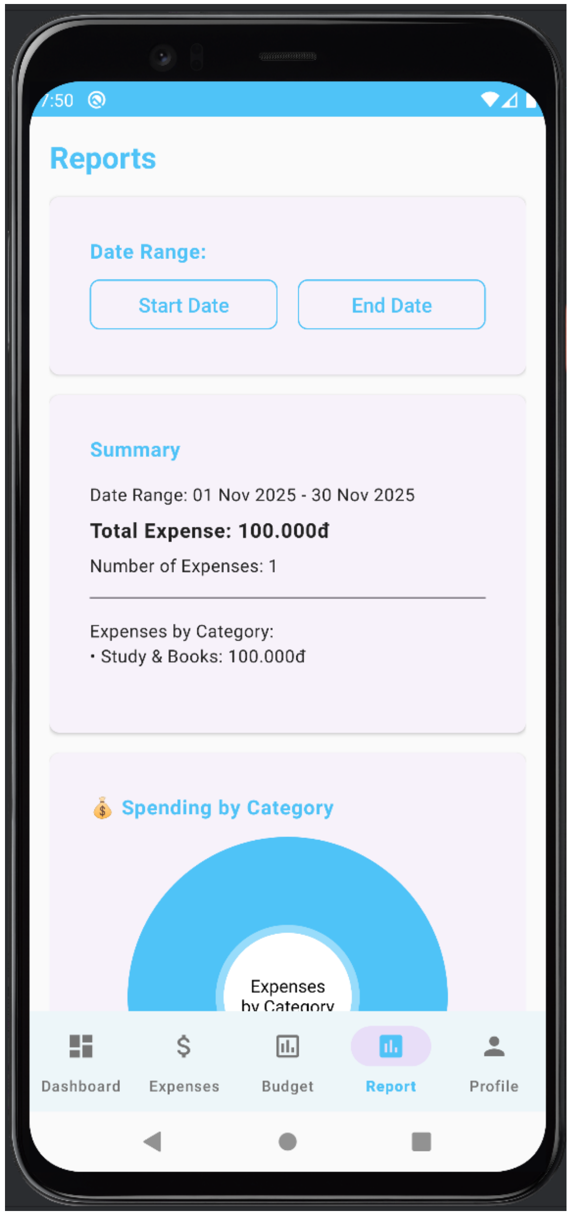


*Figure 4.11. Time filter interface and summary of spending figures.*

### 4.5.2. Visual Charts

- **Purpose:** To provide insight into spending structure and trends.
- **Interface Description:**
    - **Pie Chart:** "Spending by Category" analysis. Each slice represents a group of spending (eating, studying, etc.), helping students immediately identify which is the most "consuming" money.

- **Line Chart:** Analyzes the "6-Month Spending Trend". Help users compare spending levels across months to adjust behavior.

- **Technical:** Use a dedicated chart library (MPAndroidChart) to draw smooth, touch-enabled graphs to view specific values.

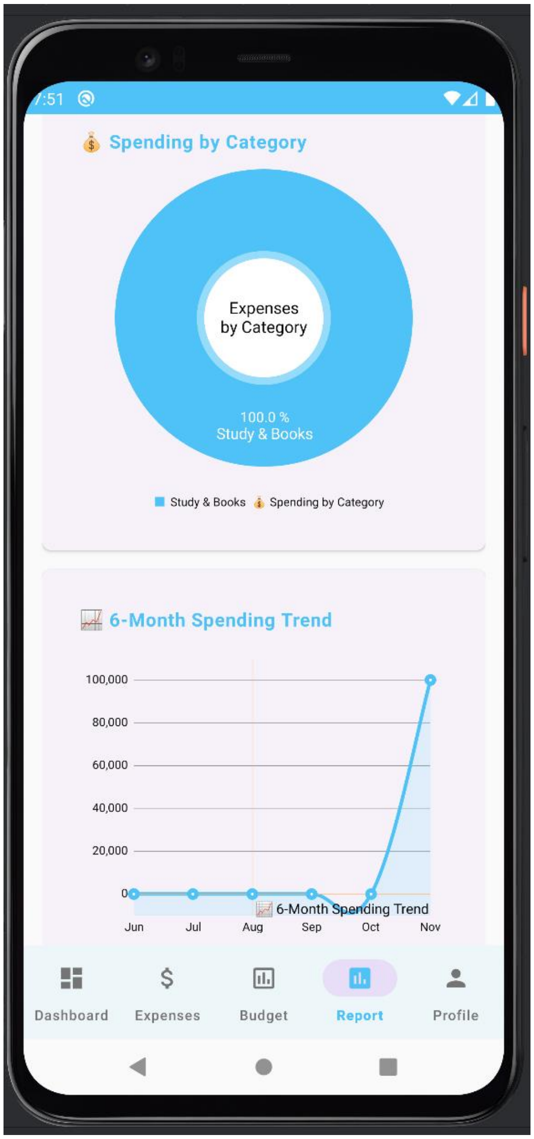


*Figure 4.12. Pie charts and line charts help visualize financial data.*

### 4.6. Export & Share

This feature ensures ownership of users' data and supports financial reporting when necessary (e.g., sending spending reports to parents).

#### 4.6.1. Export Options

- **Purpose:** Store data to external storage or send it out as standard text.
- **Interface Description:** The bottom area of the Report screen provides large function buttons:
    - **Select Export Format: Select the** export format.
    - **Export as PDF:** Quickly export beautiful reports for printing.
    - **Share via Email:** Send files directly via email.


*Figure 4.13. Data export and report sharing options.*

### 4.6.2. System Export and Sharing Formats

- **Purpose:** Diversify file formats to serve a variety of needs (Excel for calculations, PDF for viewing).
- **Implementation Process:**

1. **Format selection dialog:** When exporting is pressed, a dialog appears that allows you to select **CSV** (Excel compatible) or **PDF**.

2. **System Share Sheet:** After the file is created, the application calls Android's Share Intent, allowing users to send files via Gmail, Zalo, save to Google Drive, or shoot Bluetooth.

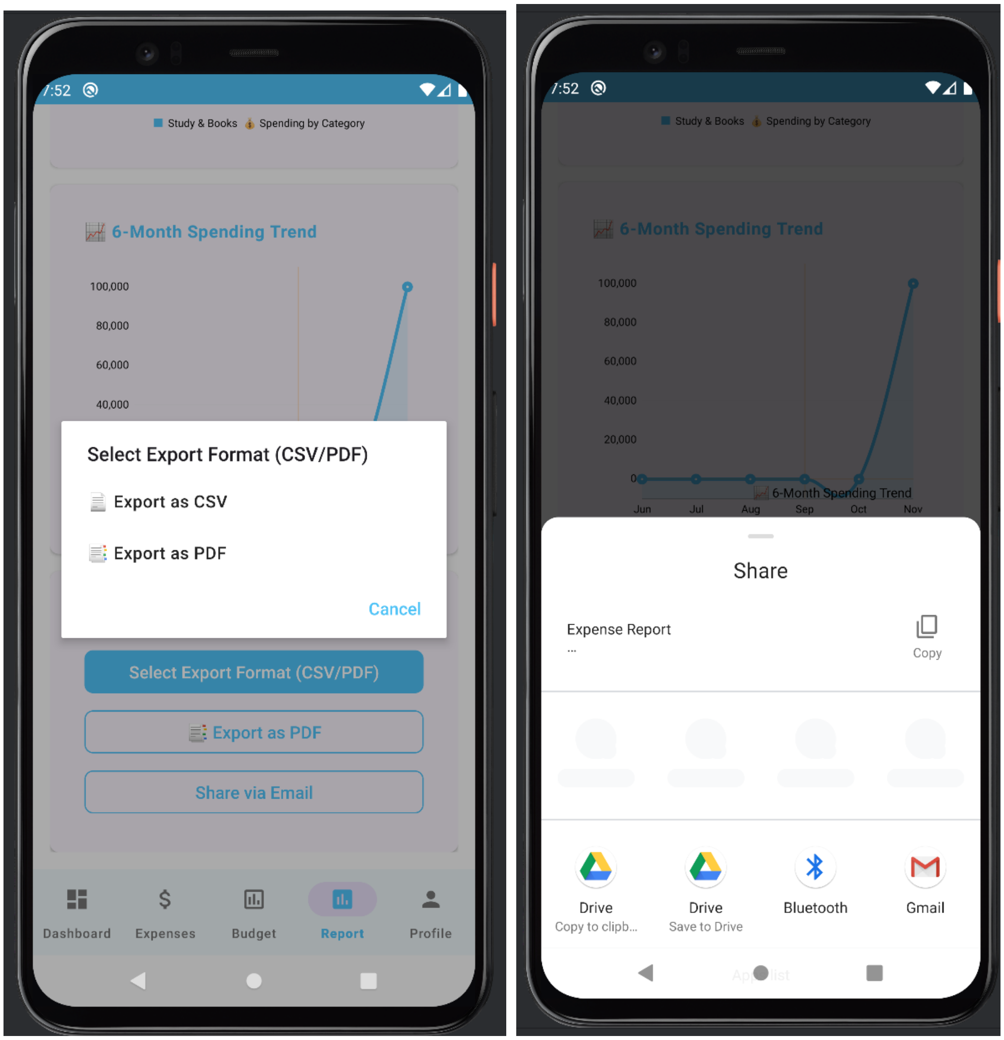


*Figure 4.14. The file format selection dialog box (left) and the sharing feature via a third app (right).*

### 4.7. Profile & Settings

This area allows users to manage identifiers, customize the experience of using the app, and send feedback to the development team.

#### 4.7.1. Management of Personal Information (Profile Information)

- **Purpose:** View and edit student account information.

- **Interface Description:**
  - **Avatar: The** profile picture is rounded in the center position.
  - **Information Form:** Data fields (Full Name, Email, Address, Phone Number) are clearly displayed. The Email field is usually disabled to ensure the uniqueness of the account.
  - **View/Edit Mode:** Defaults to "View Only" mode to avoid mistaken operations. When the "Edit Profile" button is pressed, the fields will unlock for input.
- **Advanced Features:**
  - **Change Avatar:** When you tap on your profile picture, an Options Menu pops up that allows: Take a new photo, Choose from gallery, or Delete an existing photo.

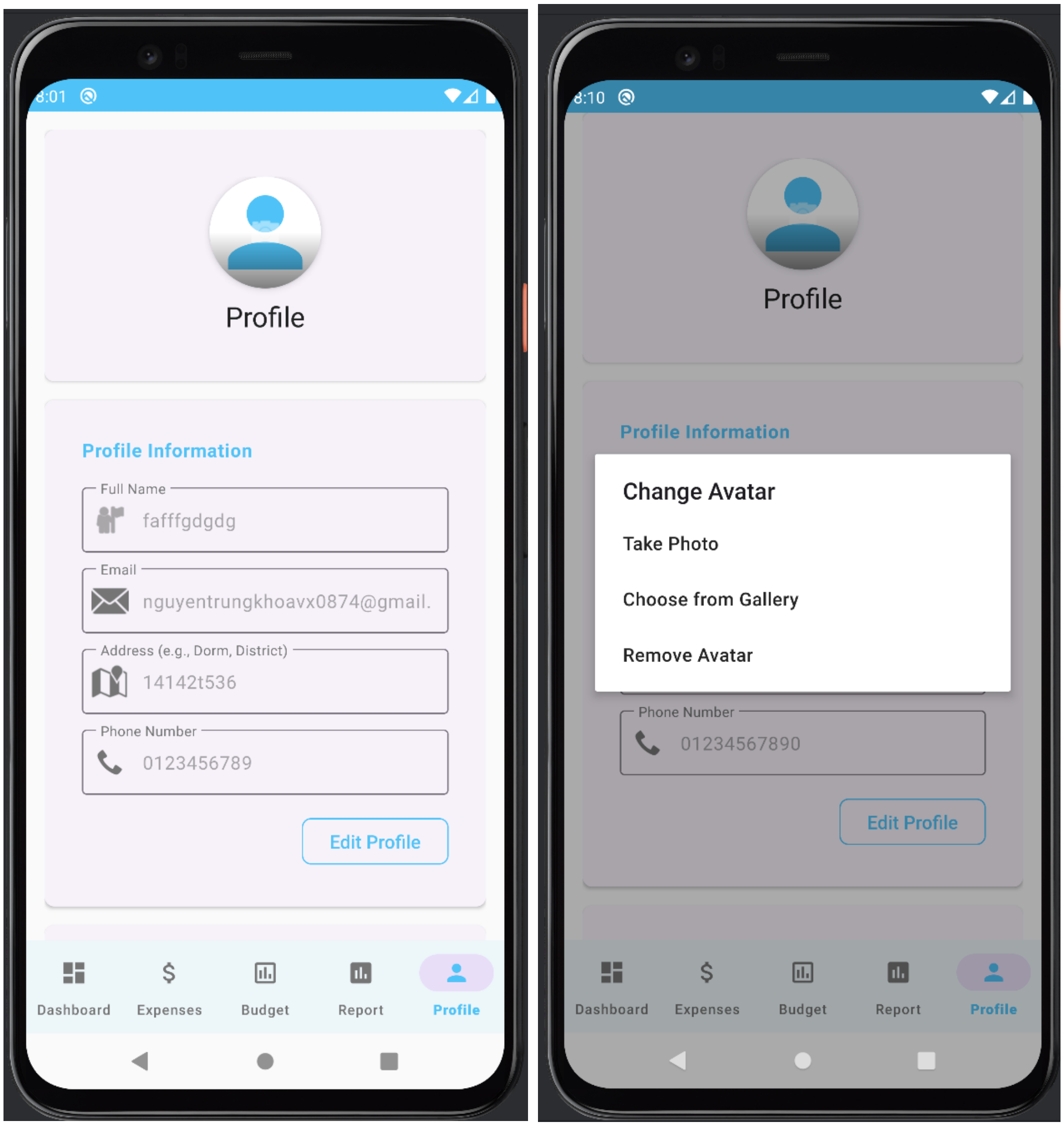


*Figure 4.15. Personal information interface (left) and Profile picture change option menu (right).*

### 4.7.2. App Settings

- **Purpose:** Personalize the interface and enhance security.
- **Key options:**
    1. **Dark Mode:** Converts the entire interface to dark tones, helping to protect your eyes when using at night and saving battery life for AMOLED displays.
    2. **Biometric Login:** High-end security features. When turned on, the app will ask for fingerprint/face authentication every time you open the app.

3. **Language:** Supports instant switching between English, Vietnamese and Chinese, serving a variety of students.

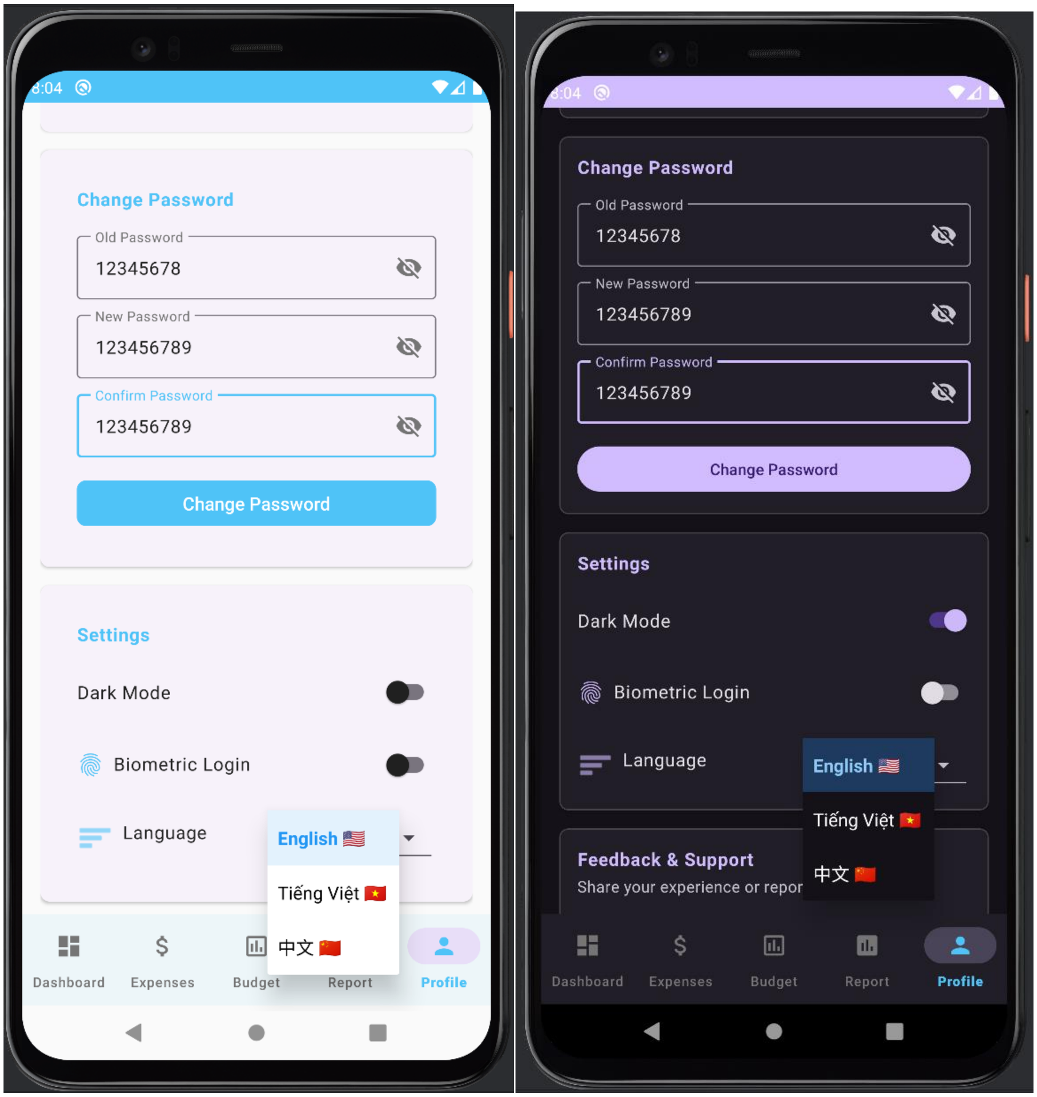


*Figure 4.16. The Settings screen is in Light Mode and Dark Mode.*

- **Security Activation Procedure:**
    - To ensure safety, when the user toggles the "Biometric Login" button, the system will ask to re-enter the password again to verify the owner's authenticity before activating the feature.

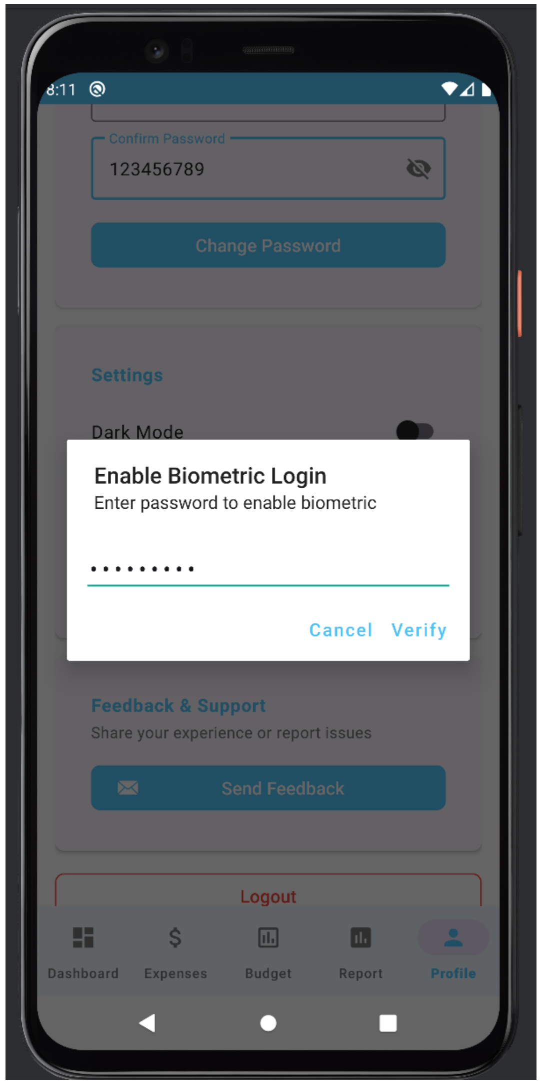


*Figure 4.17. The dialog box asks for password authentication when fingerprint login is enabled.*

### 4.7.3. Changing Passwords and Security & Feedback

- **Change Password:** A secure password change interface with 3 fields: Old Password, New Password, and Reconfirm. Fields have an "eye" button to show/hide characters.
- **Feedback:** A feature that collects user opinions.
    - Star rating (Rating Bar) from 1-5 stars.
    - Text input box for detailed comments.

- Quick suggestion buttons (Chips) such as: UI/Design, Performance, Bug Report help users categorize responses quickly.

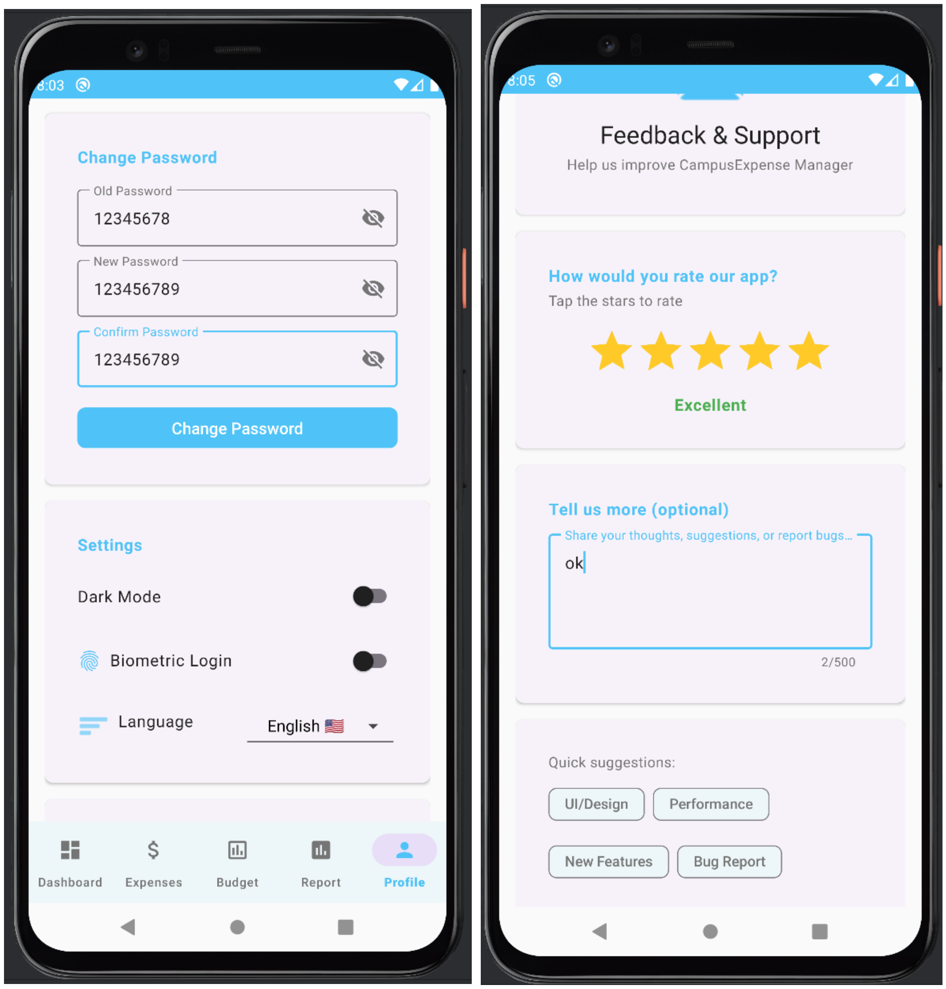


*Figure 4.18. Change Password (left) and Send Feedback Review (right) interface.*

## 4.8. Summary.

As such, this chapter comprehensively describes the core functions of **the CampusExpense Manager** application through real-world usage scenarios. From secure login, quick spending recording to financial analysis through visual charts, the application has shown perfection in terms of features and user experience (UX/UI).

The realized interfaces not only ensure the aesthetics of the Sera UI style, but also thoroughly solve the difficult problems of students such as: forgetting to take notes, difficulty in keeping track of budgets, and data privacy concerns. The smooth operation of the above modules is an important premise for conducting testing and performance evaluation steps in the next chapter.