Presentation on Developing a Business Application with Android Studio and SQLite

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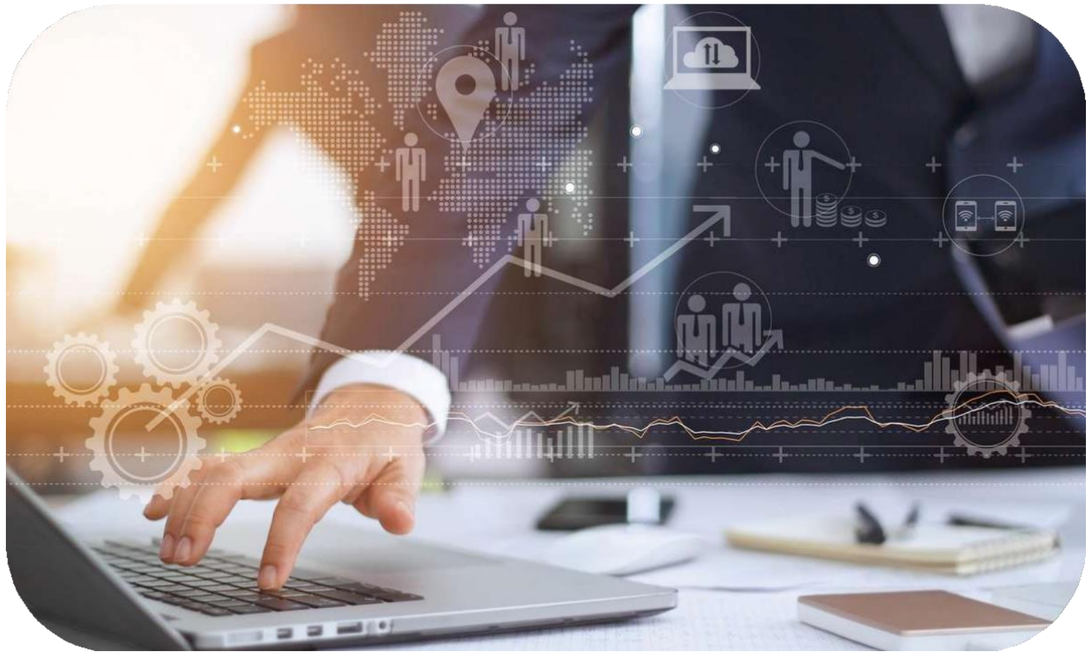


Developing a Business Application with Android Studio and SQLite

Quay lại Trang Chương trình

Developing a Business Application with Android Studio and SQLite

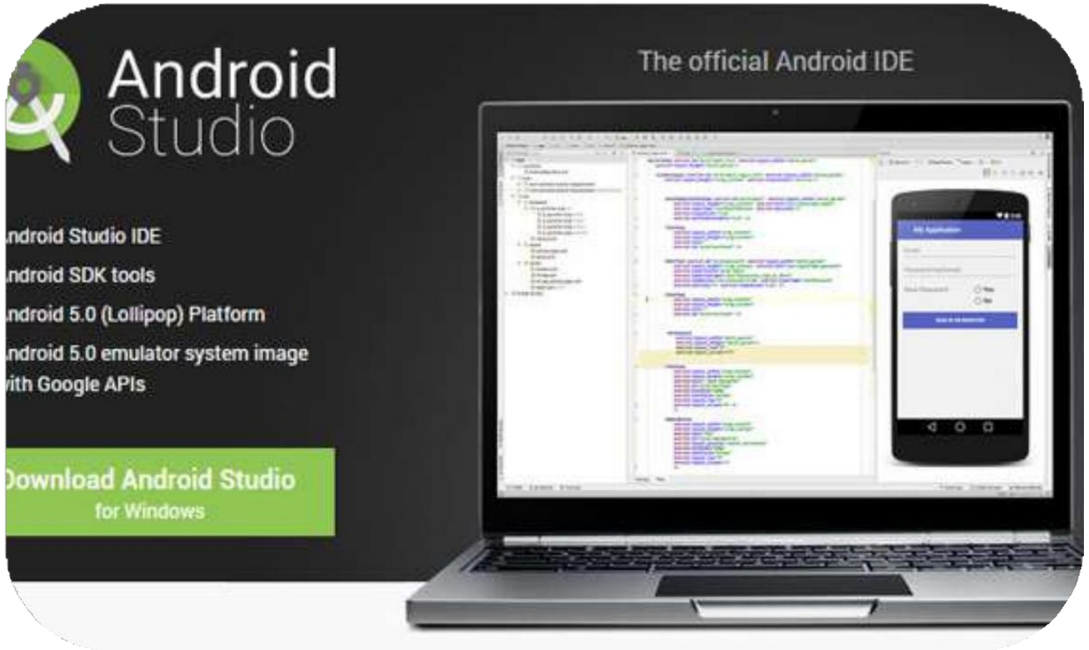
BudgetWise Solutions

- BudgetWise Solutions is dedicated to creating innovative solutions to simplify financial management for individuals and businesses.

Objective of the Application

- Our goal is to develop a functional business application that helps users manage their expenses and budgets effectively.

Android Studio



Android Studio: The Platform for Android Application Development

Overview

Android Studio is the official integrated development environment (IDE) for Android app development

Key Features

Supports Java and Kotlin, the two main programming languages for Android
Provides comprehensive tools for designing, coding, testing, and deploying Android applications.

Significance

Android Studio streamlines the development process and enhances productivity, making it an essential tool for Android developers

Benefits of Android Studio

Intelligent Code Editor

Features like auto-completion, error detection, and code refactoring help improve coding efficiency and reduce errors.

Visual Interface Designer

Drag-and-drop design tools allow for easy creation and modification of user interfaces
The visual layout editor supports both XML and design view, facilitating a seamless design process

Integrated Emulator

The built-in emulator enables testing on a wide range of virtual devices, ensuring compatibility across different screen sizes and configurations.

SQLite

SQLite: A Lightweight Database Engine

Overview

SQLite is a self-contained, serverless, and zero-configuration database engine widely used for local data storage in mobile applications.

Key Features:

- Supports ACID transactions, ensuring reliable data operations
- Stores data in a single cross-platform database file, making it easy to manage and distribute
- Offers a simple SQL-based interface for data manipulation.

Purpose

SQLite provides a reliable and efficient data storage solution for applications, allowing developers to focus more on the app's functionality and user experience.

Key Features of SQLite

Data Storage and Management

- Stores all data in a single file, making it easy to transfer and manage.
- Supports a wide range of data types and complex queries, enabling versatile data operations

Lightweight and Fast

Designed to be lightweight, with a minimal footprint on the device’s storage and memory

Efficient performance, even on devices with limited resources

No Configuration Required

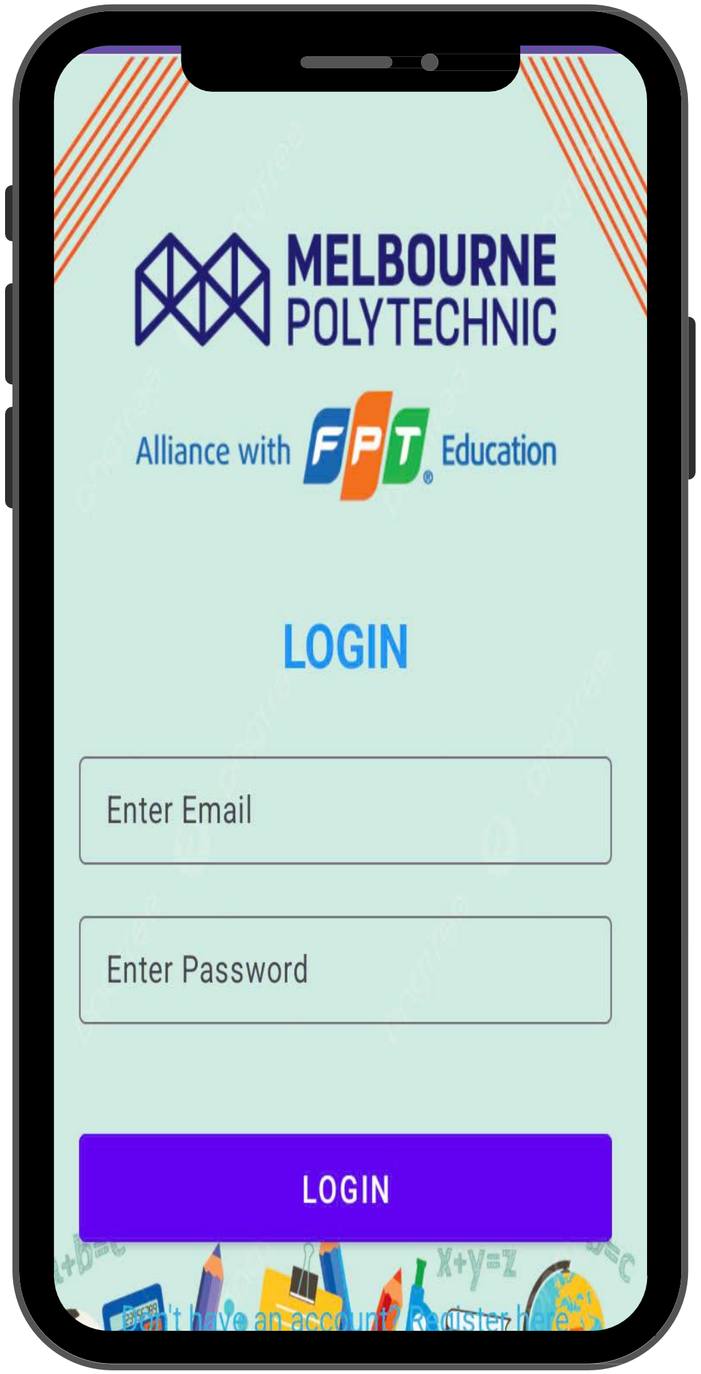
- Does not require a separate server or installation, simplifying deployment and maintenance
- Zero-configuration approach allows for seamless integration into the app.

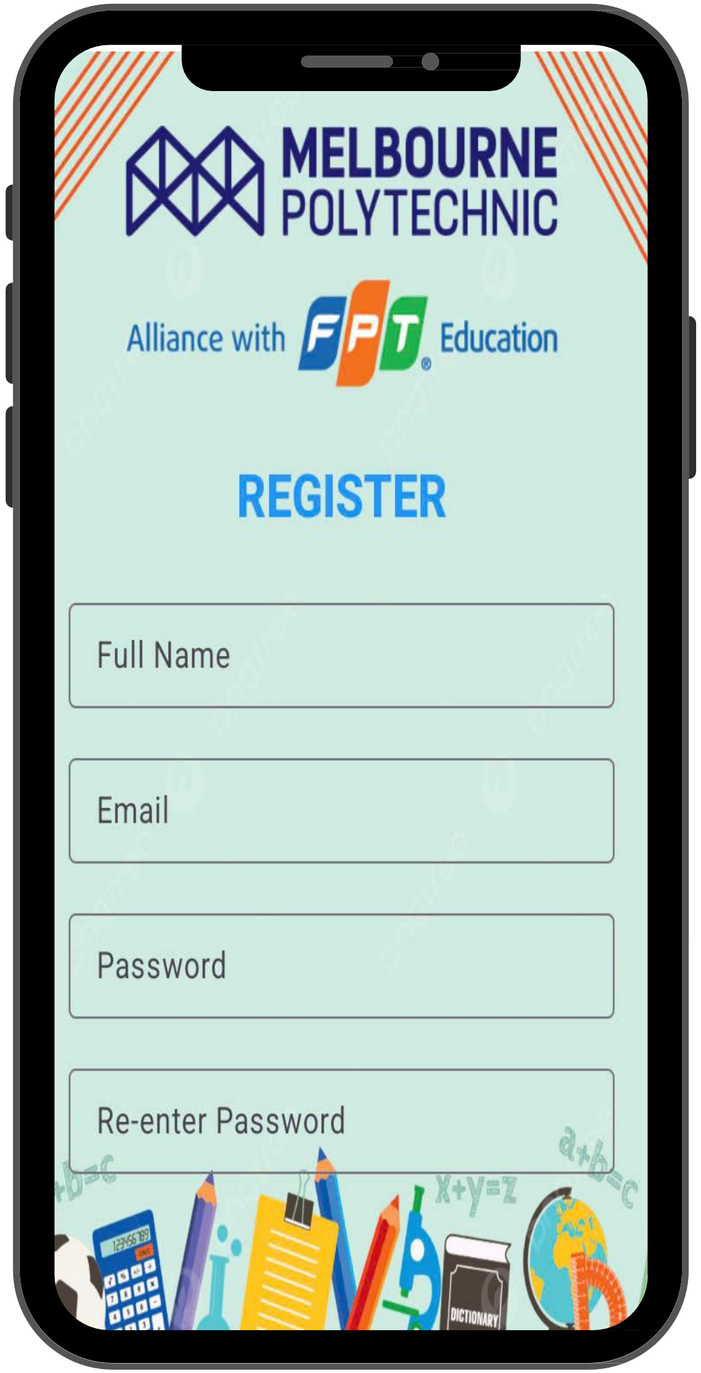
Cross-Platform Compatibility

- Compatible with various operating systems, ensuring broad applicability.
- Supports data synchronization with other systems and databases through custom implementations

Application Development Process

Login and SignUp Form

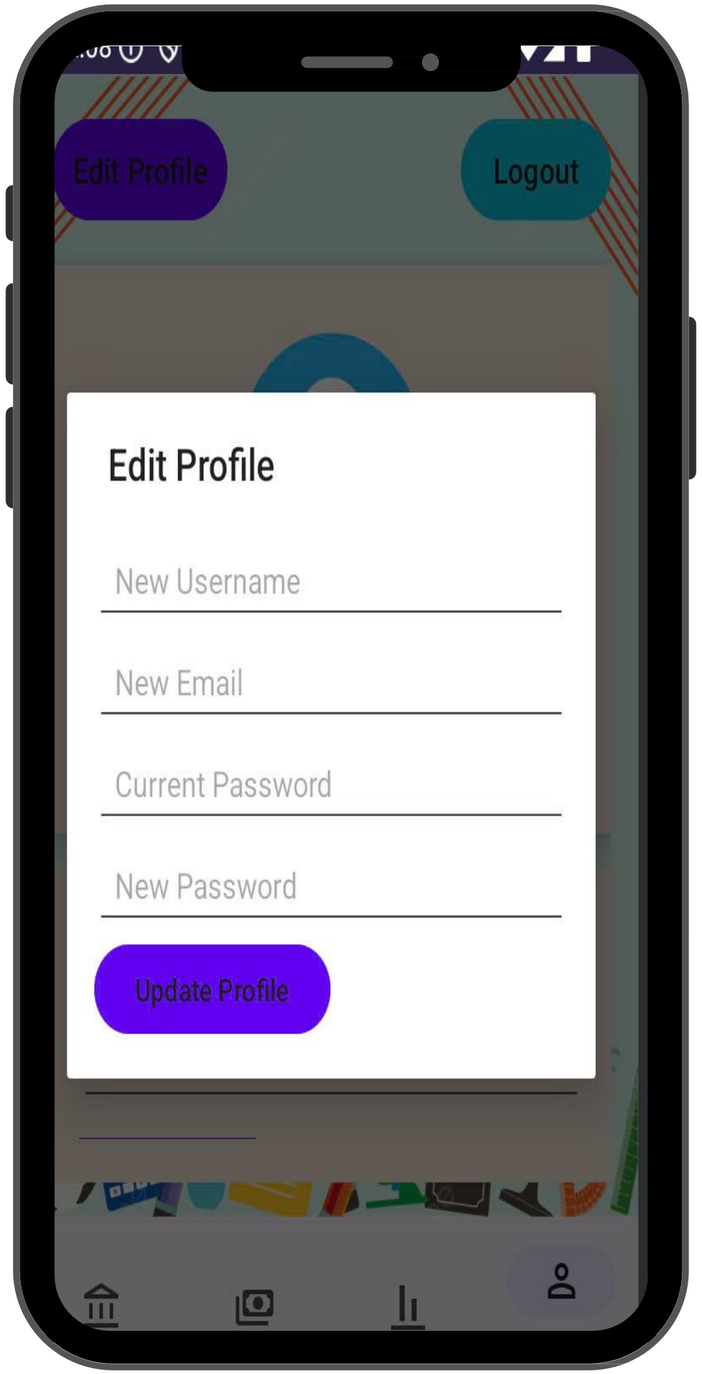




Application Development Process

Login

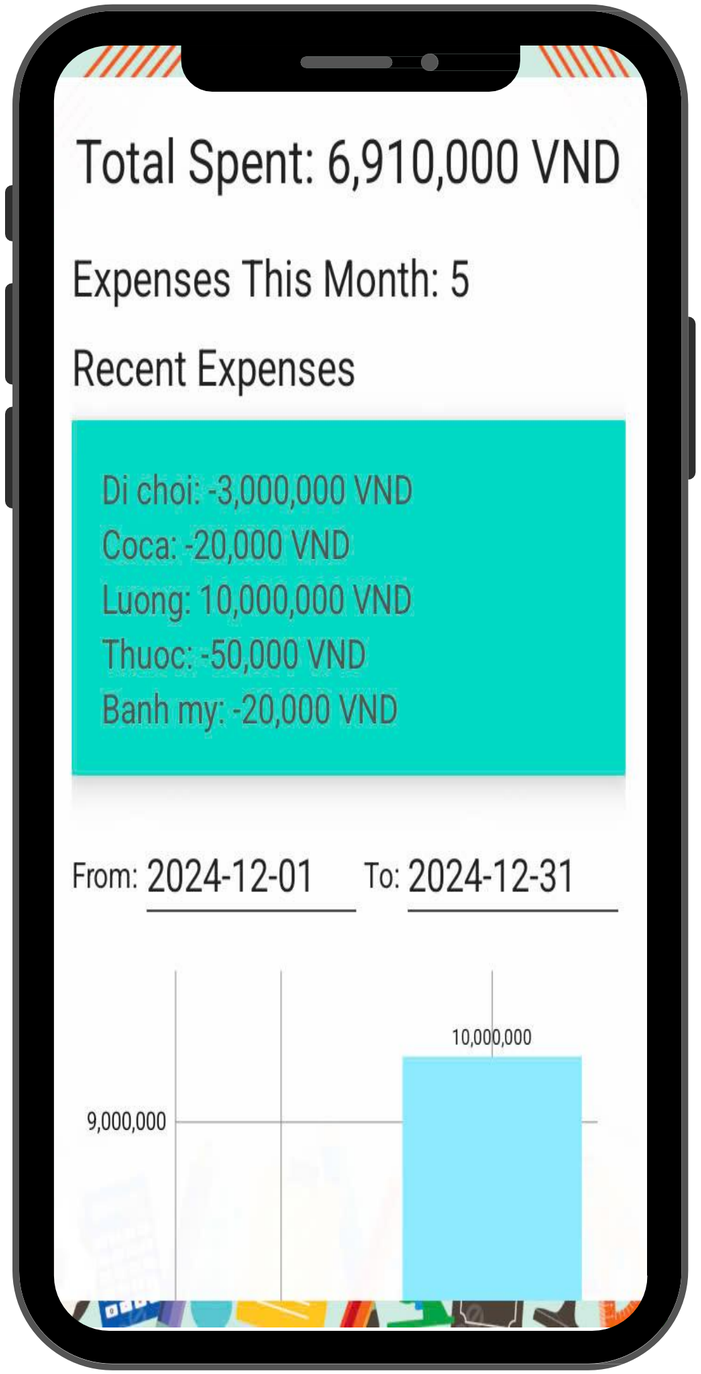
When you forgot password

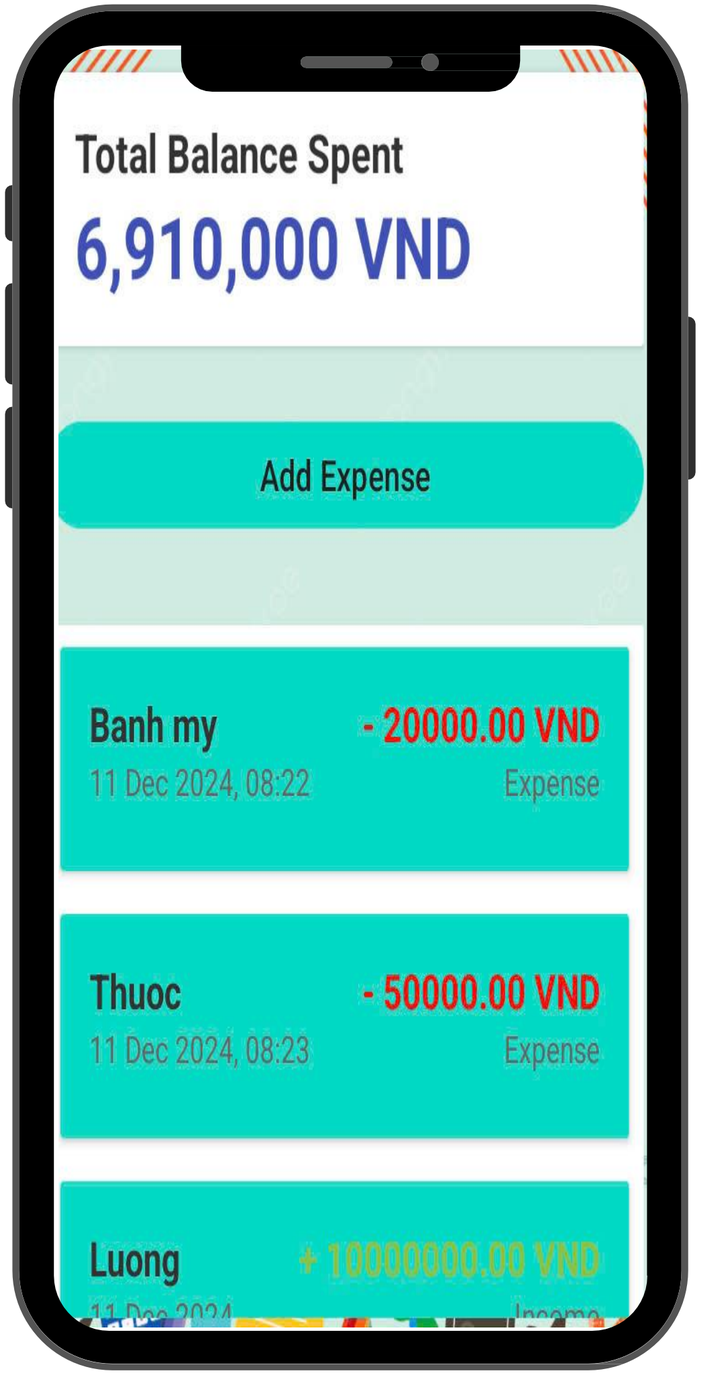


Application Development Process

Categories

Track monthly expenses

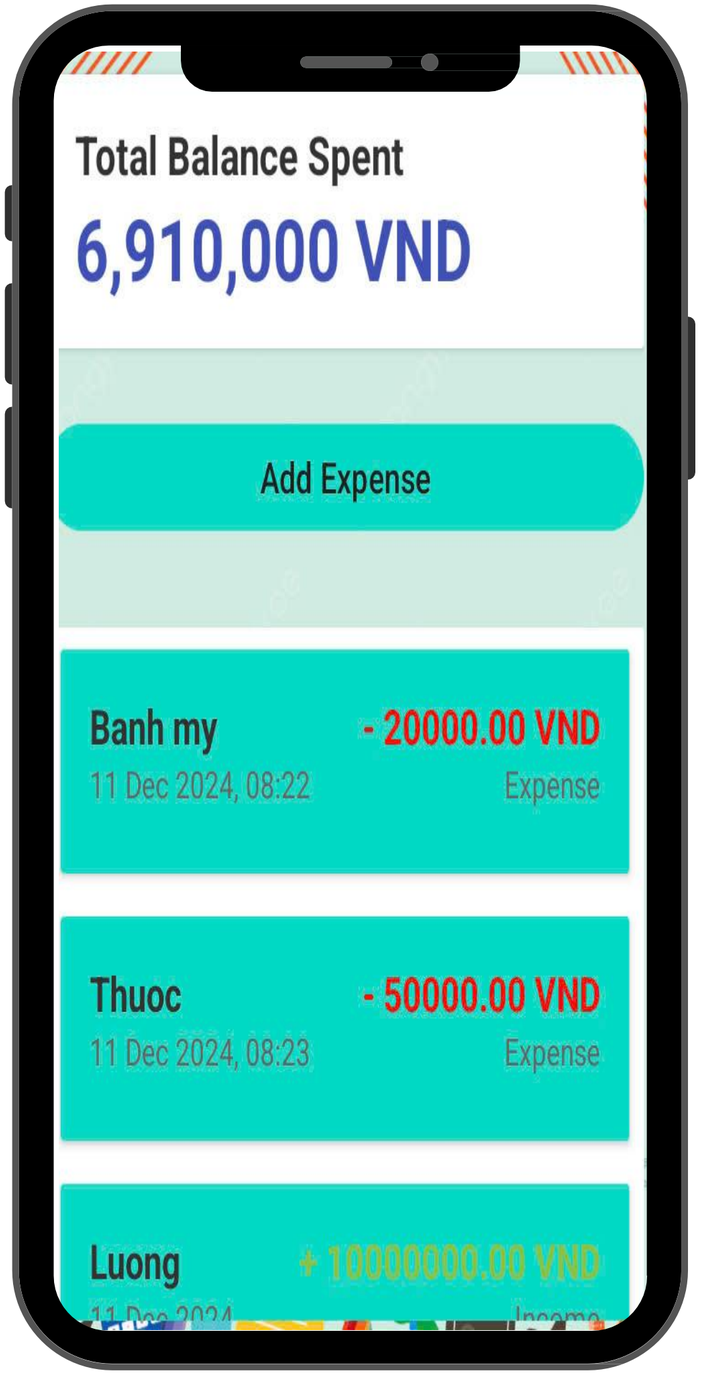


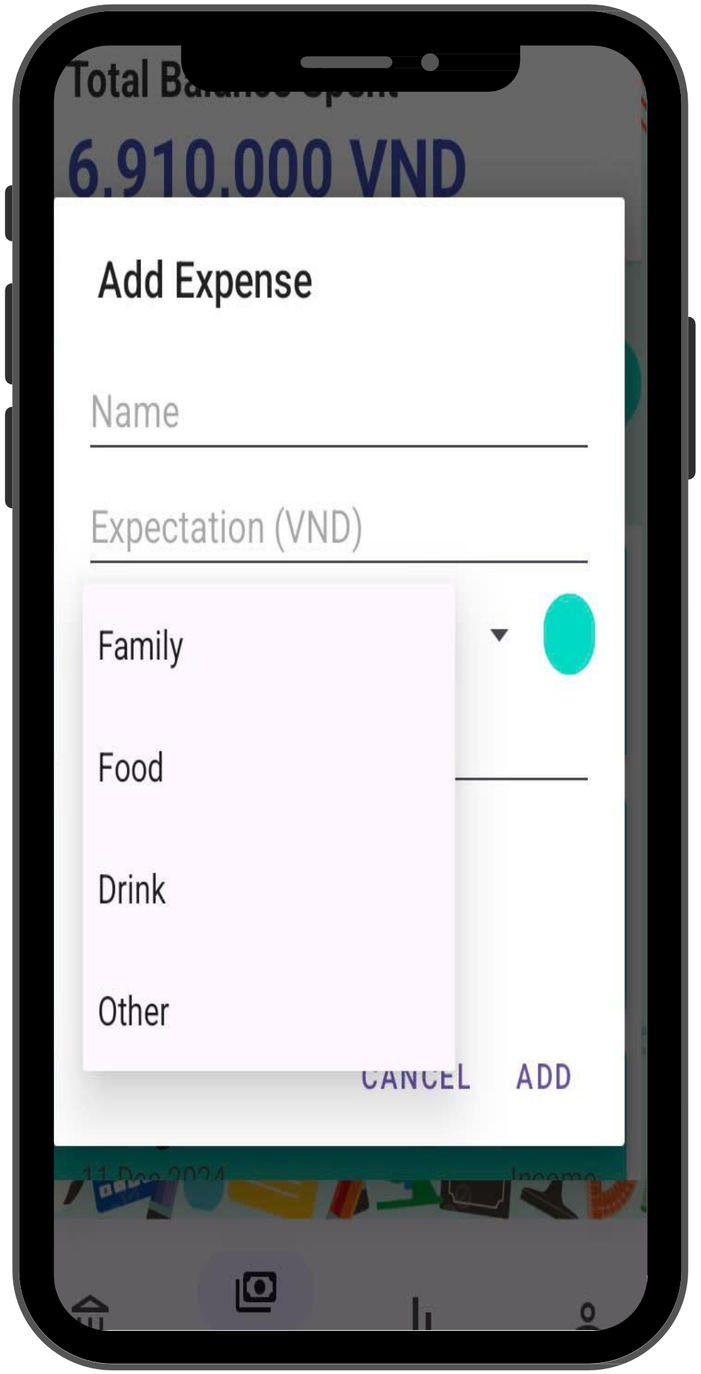


Application Development Process

Add expense

Add expense by category

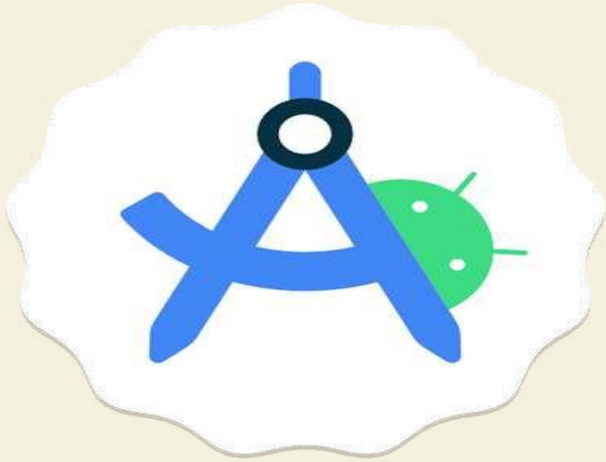




Project development process.

What tools did the development team use during the development process?

- Android Studio
- SQLite
- Microsoft Project for project management



Is this app easy to use for beginners?

- With information logging operations as well as the interface, we have designed it appropriately to help users easily operate and use it, even if they are new.

Who is this application for?

- This application will be suitable for students in school who want to manage their personal finances effectively and completely automatically.

What goals has your team achieved during development?

- This application will be suitable for students in school who want to manage their personal finances effectively and completely automatically.

During the development process, what difficulties did the development team encounter?

- Resource Constraints: With a limited budget and a team of junior developers, resource management was crucial.

- Data Privacy and Security Compliance: Adhering to data privacy regulations and ensuring the security of user data added complexity to the development process.

- Mobile App Development Experience: As a team with limited experience in mobile app development, the developers faced a steep learning curve in understanding best practices, tools, and frameworks for both Android and iOS platforms.

How did the development team solve those difficulties?

- The team invested in training sessions and online courses to build the necessary skills. They also sought advice from more experienced mobile app developers through forums and professional networks.

- The team prioritized core functionalities for the initial release, deferring less critical features to future updates. They also leveraged open-source libraries and tools to minimize costs.

- The team implemented robust encryption methods for data storage and transmission. They also conducted thorough reviews to ensure compliance with regulations such as GDPR and CCPA.

Application Overview

- User Registration and Authentication Requirement
- Expense Tracking Requirement:
- Budget Setting Requirement
- Expense Overview Requirement
- Recurring Expenses Requirement
- Expense Reports Requirement
- Expense Notifications Requirement

User Registration and Authentication Requirement

- Users can create accounts with a username and password. Authentication should be secure and allow users to log in and access their expense data.

Expense Tracking Requirement:

- Users can add, edit, and categorize expenses (e.g., rent, groceries, transportation). Each expense entry includes a description, date, amount, and category.

Budget Setting Requirement

- Users can set monthly budgets for various expense categories (e.g., food, entertainment, education). The app should allow users to adjust budget amounts as needed.

Expense Overview Requirement

- The app provides a summary of monthly expenses, including total spending, remaining budget, and a breakdown by category. Users can view expense trends over time.

Recurring Expenses Requirement

- Users can add recurring expenses (e.g., monthly rent) with start and end dates. The app should automatically add these expenses to the user's monthly budget.

Expense Reports Requirement

- Users can generate detailed expense reports for specific time periods (e.g., monthly, annually). Reports include a breakdown of expenses by category.

Expense Notifications Requirement

- The app should send reminders or notifications when users approach or exceed their budget limits for specific categories.

Quality assessment

- Performance: The app provides a smooth and responsive user experience, even with large amounts of data spend.

- Friendly Interface: Intuitive user interface, with clear labels and easy navigation to track spending with ease.

- Data Security: User data, including spending and budget information, is stored securely and protected with encryption. Security and privacy practices are followed to ensure user information is kept confidential.

- Feedback and Support: There is an in-app feedback form for users to report issues or make suggestions. The BudgetWise Solutions team actively monitors user feedback and resolves issues promptly.

Thanks
for
watching