WalletWise Team

**WalletWise
Vision Document**

Version 1.1

Revision History

Date	Version	Description	Author
11/Apr/24	1.0	First version of the Vision Document	WalletWise Team
03/May/24	1.1	Edit format of document and content of section 3.2, 3.4, and 4.	WalletWise Team

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Vision (Small Project)

1. Introduction

The purpose of this document is to collect, analyze, and define high-level needs and features of the WalletWise. It focuses on the capabilities needed by the stakeholders and the target users, and **why** these needs exist. The details of how the WalletWise fulfills these needs are detailed in the use-case and supplementary specifications.

2. Positioning

2.1 Problem Statement

The problem of	managing and monitoring expenses for each individual
affects	all individuals in need of expense management
the impact of which is	that users can control their expenses, allowing them to create reasonable spending plans for the future
a successful solution would be	that the user can manage their expenses effectively, thereby proposing the most reasonable and accurate spending plans.

2.2 Product Position Statement

For	people
Who	using money to live
The (product name)	is WalletWise
That	allows individuals to manage their personal expenses by storing daily expenditure information, and users receive advice on managing and spending wisely
Unlike	MoneyLover, MISA Money Keeper, Spendee, Mint, YNAB (You Need a Budget)
Our product	capability to simplify expenses tracking and provide spending suggestions to users based on specific criteria, leveraging past expenditure information, thereby allowing users to have more informed choices for upcoming expenditures in a rational manner.

3. User Descriptions

3.1 User Profiles

- **Avatar**: (Optional)
- **Name/User Type**: Primary users of WalletWise - Personal Expenses Management App

- **Perspective**: The primary users are individuals who have a need to manage their personal expenses intelligently and efficiently. They value convenience and flexibility when using expense management tools
- **Role/Task/Responsibility**:
  - o **Role**: They play the role of proactive managers of their own expenses.
  - o **Task**: Their main task is to track their income and expenses, set budgets, and make expenses decisions based on the insights provided by the app.
  - o **Responsibility**: They are responsible for ensuring the accuracy of the expenses data entered into the app and for adhering to the budgeting and expenses planning recommendations provided.
- **Skills**: They have basic smartphone and tablet skills. No need to be an expenses expert.
- **Computer Usage Experience**: Moderate to high. They regularly use computers and mobile applications in their daily lives.
- **App Usage Frequency**: They use the app on a daily basis or at least once a week to update and manage their expenses situation.
- **Age, Gender, Culture, Preferences**: Diverse, from teenagers to older adults, both men and women, have enough motivation and desire to manage their personal expenses.
- **Habits**: They regularly monitor their personal expenses situation and seek suggestions for improvement.
- **Expectations, Desires**: They expect a simple, easy-to-use personal finance management app that provides comprehensive information and features to help them manage their expenses intelligently.
- **Limits/Constraints**: They may face limitations in financial knowledge or technology usage skills.
- **Other attributes**: Evaluate high security and stability of the application. Expect more smart spend management suggestions.

STUDENT:

- **Avatar**: Optional
- **Name/User type**: Student
- **Perspective**: expenses management needs are limited due to low income.
- **Responsibility**: Have the responsibility of managing their own finances in accordance with income/allowance .
- **Skills**: Lack of financial knowledge.
- **Computer usage experience, professional experience, and environment**: Proficient in using smartphones and tablets for academic purposes such as research, assignments, and communication.
- **Frequency of app usage**: Regularly, about 30 minutes/day.
- **Age, gender, culture, interests**: 15-22, diverse in gender, cultural backgrounds, and interests.interested in education, social activities, and personal development.
- **Habits**: Often multitasking, using social media, reading books.
- **Expectations and desires**:
  - o Seeking an easy-to-use financial management solution suitable for student life (saving money for study supplies and meals with friends).
  - o Desire financial knowledge and independence.
- **Limitations/restrictions:**
  - o Limited finances due to dependence on subsidies, part-time jobs, or scholarships.
  - o Time constraints due to academic workload and extracurricular activities.
  - o Limited finances knowledge, lack of perseverance in managing any expenses resources.
- **Other relevant attributes suitable for the problem/issue to be addressed:**
  - o Need clear and concise guidance on budgeting and expense tracking.

OFFICE WORKERS:

- **Avatar**: Optional
- **Name/User type**: Office Staff
- **Perspective**: financial management is an important part of daily life, but may not be prioritized highly due to the busy nature of office work.
- **Role/Responsibility**: Need to manage personal expenses to cater to individual and family needs, as well as to build savings for the future.
- **Skills**: Have basic finances knowledge but may need to improve finances management skills.
- **Computer usage experience, professional experience, and environment**: Good.
- **Frequency of app usage**: About 30 minutes/day
- **Age, gender, culture, interests**: Diverse, typically adults aged 25 to 45, may have families and personal responsibilities.
- **Habits**: Spend a large amount of time during the day in office work, often have leisure and relaxation needs after work.
- **Expectations and desires**:
  - Seeking a simple and effective financial management solution to save time.
  - Want to improve finances management skills and gain knowledge about investment and savings.
- **Limitations/restrictions**:
  - May be busy with work and family, limited time for personal activities.

HOMEMAKER:

- **Avatar:** Optional
- **Name/User type**: Homemaker
- **Perspective:** Finances management is an essential part of household management and daily expenses.
- **Role/Task/Responsibility:** Responsible for managing the family's expenses, including expense management, budgeting, and bill payments.
- **Skills:** May have basic knowledge of household finance but may need support in effectively managing expenses.
- **Computer usage experience, professional experience, and environment:** Uses computers and mobile phones for daily activities and information seeking.
- **Frequency of app usage:** About 2h/day
- **Age, gender, culture, interests:** Diverse, typically adult women (28-50 years old) who are particularly interested in managing household and personal expenses.
- **Habits:** Often engaged in household tasks such as cooking, cleaning, and caring for children.
- **Expectations and desires:**
  - Seeking an easy-to-use and effective expenses management solution to help them manage expenses and save better.
  - Want to gain more knowledge and skills in managing household expenses.
- **Limitations/restrictions:**
  - Often busy with family activities and household chores.
  - May need support to understand financial management tools and budgeting.

3.2 User Task and Environment

3.2.1 Log in

- **Objective**: To log into the application using valid credentials.
- **Executor**: User.
- **Location**: Anywhere the application is accessible.
- **Frequency**: Whenever the user wants to access the application.
- **Special Requirement:** The user must have set up and created a PIN.
- **Additional Information:** If the user forgets their PIN, they can use the "Forget PIN" feature to reset it.

3.2.2 Forget PIN

- **Objective**: Allow users who have forgotten their PIN to regain access to their WalletWise account.
- **Executor**: User.
- **Location**: WalletWise application on Android mobile devices.
- **Frequency**: Occurs when users are unable to recall their PIN and need to reset it.
- **Special Requirement**: Users must provide accurate information for verification purposes to ensure security.
- **Additional Information:** No information.

3.2.3 Set up profile

- **Objective**: Allow users to create their profile within the WalletWise application.
- **Executor**: User.
- **Location**: WalletWise application on Android mobile devices.
- **Frequency**: Occurs when users initially set up the WalletWise application.
- **Special Requirement**: Users must provide accurate and complete information to ensure their profile setup is successful.
- **Additional Information**: No information.

3.2.4 Create PIN

- **Objective**: Enable users to establish a personal identification number (PIN) for secure access to their WalletWise account.
- **Executor**: User.
- **Location**: WalletWise application on Android mobile devices.
- **Frequency**: Occurs when users initially set up their WalletWise account.
- **Special Requirement**: The user must select a PIN that meets the application's security criteria, typically involving a minimum length and complexity.
- **Additional Information**: No information.

3.2.5 Set preferences

- **Objective**: To configure application preferences.
- **Executor**: User.
- **Location**: WalletWise application on Android mobile devices.
- **Frequency**: Whenever the user wants to customize their preferences.
- **Special Requirement**: The user must have logged into the application with a valid PIN.
- **Additional Information**: If the user chooses not to configure anything, they can cancel the process.

3.2.6 View expenses

- **Objective**: To view the list of expenses and detailed expense information.
- **Executor**: User.
- **Location**: WalletWise application on Android mobile devices.

- **Frequency**: Whenever the user wants to view their expenses.
- **Special Requirement**: The user must have logged in and accessed the application homepage.
- **Additional Information**: If no expenses are recorded, the system displays a message, and the user can choose to go back.

3.2.7 Edit expenses

- **Objective**: To edit/delete expenses within the application.
- **Executor**: User.
- **Location**: WalletWise application on Android mobile devices.
- **Frequency**: Whenever the user wants to edit or delete expense information.
- **Special Requirement**: The user must have logged in and accessed the application homepage.
- **Additional Information**: The user can choose to cancel expenses editing/delete process.

3.2.8 Add new expenses

- **Objective**: To add new expenses information to the application.
- **Executor**: User.
- **Location**: WalletWise application on Android mobile devices.
- **Frequency**: Whenever the user wants to add new expenses information into the application.
- **Special Requirement**: The user must have logged in and accessed the application homepage.
- **Additional Information**: None.

3.2.9 Enter expense manually

- **Objective**: To enter new expenses information into the application.
- **Executor**: User.
- **Location**: WalletWise application on Android mobile devices.
- **Frequency**: Whenever the user wants to enter new expenses information into the application.
- **Special Requirement**: The user must have logged in and accessed the 'Add New Expenses' page.
- **Additional Information**: The user can choose to cancel the expense adding process.

3.2.10 Scan with OCR

- **Objective**: To scan a receipt into the application with OCR.
- **Executor**: User.
- **Location**: WalletWise application on Android mobile devices.
- **Frequency**: Whenever the user wants to automatically extract information from the receipt.
- **Special Requirement**: The user must have logged in and accessed the 'Add New Expenses' page.
- **Additional Information**:Users can review the extracted information and optionally edit it.

3.2.11 Enter with text

- **Objective**: To enter new expenses into the application by entering text.
- **Executor**: User.
- **Location**: WalletWise application on Android mobile devices.
- **Frequency**: Whenever the user wants to enter new expenses into the application by entering text.
- **Special Requirement**: The user must have logged in and accessed the 'Add New Expenses' page.
- **Additional Information**: Users can review the extracted information and optionally edit it.

3.2.12 Receive alert based on spending patterns

- **Objective**: To receive alerts from the system when the projected expenditure exceeds the allowed threshold.

- **Executor**: User.
- **Location**: WalletWise application on Android mobile devices.
- **Frequency**: Whenever the projected expenditure exceeds the allowed threshold.
- **Special Requirement**: The user must access application.
- **Additional Information**: User can enable or disable features in setting preferences.

3.2.13 Manage categories and budgets

- **Objective:** To monitor user expenses against set monthly budgets.
- **Executor**: User.
- **Location**: WalletWise application on Android mobile devices.
- **Frequency**: As needed, typically to manage and track budgets regularly.
- **Special Requirement**: The user must have logged in and accessed the application homepage.
- **Additional Information**: Users can add, edit, or delete categories and their budgets, with the system updating accordingly.

3.2.14 Track budgets

- **Objective**: To monitor user expenses against set monthly budgets.
- **Executor**: User.
- **Location**: WalletWise application on Android mobile devices.
- **Frequency**: Continuous during budget management.
- **Special Requirement**: The user must have opted to track expenses and set monthly budgets for at least one category.
- **Additional Information**: The system alerts the user when expenses exceed predefined budget limits.

3.2.15 Retrieve expenses information

- **Objective:** Reduce manual expense entry and avoid forgetting to track expenses..
- **Executor:** User.
- **Location:** WalletWise application on mobile devices.
- **Frequency:** Automatic (triggered by new bank/wallet transaction notification).
- **Special Requirement**: Supported bank/wallet applications required. Transaction notifications for both bank/wallet app and WalletWise must be enabled.
- **Additional Information**: The user can review and confirm information or ignore the suggestion.

3.2.16 Get reminder and create recurring

- **Objective:** Create, edit and delete a reminder for recurring expenses and get a reminder from the system.
- **Executor:** User.
- **Location:** WalletWise application on mobile devices.
- **Frequency:** Whenever the user wants to create, edit or delete a reminder for recurring expenses.
- **Special Requirement**: The user must have logged in and accessed the application homepage.
- **Additional Information**: The user can get a reminder from the system.

3.2.17 View statistics and analysis

- **Objective**: To view monthly and yearly financial charts and reports, along with detailed expense analysis.
- **Executor**: User.
- **Location**: WalletWise application on Android mobile devices.
- **Frequency**: Whenever the user wants to review financial data.
- **Special Requirement**: The user must have recorded at least one expense and accessed the homepage.
- **Additional Information**: If there's no expense data available, the system notifies the user to record expenses for analysis.

3.2.18 Chat with the financial AI assistant

- **Objective:** Get personalized financial guidance and insights.
- **Executor:** User.
- **Location:** WalletWise application on mobile devices.
- **Frequency:** As needed by the user.
- **Special Requirement**: The user has access to the "FinAI chatbot" feature and has an internet connection.
- **Additional Information:** Provides financial analysis, budgeting plans, and helpful suggestions. Allows follow-up questions within the chat session.

3.3 Alternatives and Competition

No.	Alternatives and Competition	Strengths	Weakness
1	Money Lover	- User-friendly interface. - Offers a variety of expense and income management features. - Rich features including expense tracking, budget management, and bank account tracking.	- Delays in data updates. - Some advanced features require a premium plan to unlock.
2	MISA Money Keeper	- Suitable for Vietnamese users with support for various banks and currencies. - Offers basic but effective financial management features.	- Lacks features compared to international financial management apps. - Limited diversity in synchronization and integration with other services.
3	Spendee	- Provides detailed expense analysis through charts and reports. - Integrates note-taking and image attachment for transactions.	-Some advanced features require subscription or payment. - Limited diversity in synchronization and integration with other services.
4	YNAB (You Need a Budget)	- Clear and effective budget management approach. - Supports planning savings and managing monthly cash flow. - Provides a large user community and comprehensive instructional materials.	- Complex interface for some new users. - Requires a learning curve and adaptation period.

4. Product Features → functional user requirements

No.	Name	Description	Priority
1	Setup	Users provide personal information to setup profile, create PIN to create WalletWise account.	Medium
2	Log in	Users enter PIN to access the application.	Medium
3	Forget PIN	Users can choose "Forget PIN", which leads to a page where they can reset their PIN in case they forget their PIN.	Low

4	Set preferences	Allows users to customize their profiles by adding personal information, setting preferences.	Low
5	Add expense	This feature allows users to keep track of their financial transactions by entering them manually or scanning receipts with their device's camera. Manual input involves entering details such as expense type, amount, and transaction time directly into the app. Receipt scanning utilizes Optical Character Recognition (OCR) technology to extract expense information from receipts automatically, simplifying the process of logging expenses.	High
6	View expense	This feature allows user to track all recorded expenses.	High
7	Expense Information Retrieval	The app retrieves expense information from messages, notifications, or smart notes, enabling users to easily input expenses into their financial records.	Medium
8	Monthly Budget Creation	Users create monthly budgets by specifying expenditure categories and setting budget limits for each category.	Medium
9	Budget Tracking and Alerts	The app tracks users' expenses against their set monthly budgets and provides alerts when expenses exceed the predefined budget limits.	Medium
10	Reminders and Scheduling	This feature allows you to schedule automatic reminders and recurring payments for bills like utilities, subscriptions, and loan installments. This ensures timely payments and helps maintain a good credit score.	Medium
11	Statistics and Analysis	Displays monthly and yearly expense charts and reports to give users an overview of their expense's situation. Provides detailed analysis reports on expense items and expenses trends.	Medium
12	Identifying Spending Patterns and Cost-Saving	• Analyzing past expenditures and subsequently using the SARIMA (Seasonal Autoregressive Integrated Moving Average) model to forecast future spending helps users anticipate expenses and provides early warnings about financial situations. • Data: Historical transaction data from the user's recorded expenses in WalletWise application, categorized and time series formatted (date, amount). • Expected accuracy: SARIMA forecast accuracy depends on spending pattern complexity and historical data availability. It can achieve accuracy within 10-20% for short-term financial forecasting.	High
13	Financial Chatbot Integration	• Expected Model: using Gemini API (accessing capabilities of the Gemini large language model). Users can interact with the chatbot integrated into the app to get answers to their personal finance questions, such as saving money, financial planning, or smart investment strategies. • Data: User queries, historical transaction data • Expected Accuracy: The chatbot should strive to understand user queries correctly and provide financially relevant and accurate responses.	Medium

5. Non-Functional Requirements → non-functional user requirements

- **Applicable Standards, Hardware, or Platform Requirements:**
  - The application must be compatible with Android operating systems version 9.0 and above.
  - It should support various screen sizes and resolutions to ensure usability across different Android devices.
- **Performance Requirements:**
  - The application should have fast response times for navigating between different screens and

performing actions such as adding expenses or generating reports.
- o Loading times for retrieving financial data should be minimal, ensuring a smooth user experience.
- o The application should consume minimal system resources (CPU, memory, battery) to prevent draining the device's battery or causing performance issues.
- **Environmental Requirements:**
  - o The application should be resilient to fluctuations in network connectivity, ensuring functionality even in areas with poor or intermittent internet access.
- **Quality Ranges for Performance, Robustness, Fault Tolerance, and Usability:**
  - o Performance: Response time for common tasks should typically be under 2 seconds.
  - o Robustness: The application should handle errors gracefully, providing informative error messages and maintaining data integrity in case of unexpected events.
  - o Fault Tolerance: The app should have mechanisms in place to recover from failures, such as data backup and recovery options.
  - o Usability: The user interface should be intuitive and easy to navigate, with clear instructions and minimal cognitive load for users.
- **Design Constraints, External Constraints, or Dependencies:**
  - o The application may rely on third-party APIs or services for features such as currency conversion or data synchronization, AI model.
  - o Compliance with data privacy regulations, ensuring that user financial data is securely stored and protected.
- **Documentation Requirements:**
  - o User manuals should be provided within the application, offering guidance on how to use its features effectively.
  - o Online help resources should be available, including FAQs or tutorials accessible from within the app.
  - o Installation instructions should be provided to guide users through the setup process.
- **Priority of Other Product Requirements:**
  - o Stability: High priority to ensure the application functions reliably without frequent crashes or errors.
  - o Benefit: High priority to deliver value to users by effectively managing their personal expenses.
  - o Effort: Medium priority to ensure that development efforts are feasible within reasonable timeframes and resources.
  - o Risk: Low priority, with measures in place to mitigate potential risks such as data breaches or technical issues.
- **Spend pattern prediction model**:
  - o Performance: The model training and forecasting should be efficient using optimized algorithms and hardware to avoid long wait times for users.
  - o Easy to Use: WalletWise should automate data collection and model training. Users should be able to access forecasts and insights easily through visualizations and clear explanations.
  - o Accuracy: The system should strive for the highest possible accuracy.
- **Chatbot using AI API:**
  - o Performance: The chatbot should respond to user queries quickly and efficiently.
  - o Easy to Use: The chatbot interface should be user-friendly and intuitive, allowing users to ask questions in natural language.
  - o Accuracy: The chatbot should provide accurate and up-to-date financial information and recommendations using Gemini's knowledge and reasoning capabilities