# Software Requirements Specification

**for**

# Personal Wealth Management System, Version 1.0.0.1

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# Revision History

| Name | Date | Reason For Changes | Version |
|---|---|---|---|
| Death March Crew | 15/09/2023 | First Draft | 1.0.0.1 draft |
| | | | |

# 1. Introduction

## 1.1 PURPOSE

This Software Requirements Specification (SRS) document outlines the software requirements for the Personal Wealth Management System, version 1.0. It defines the scope and functionality of the system, serving as a reference for the development team and stakeholders.

## 1.2 DOCUMENT CONVENTIONS

This document follows standard typographical conventions. Priority levels are assigned to requirements, where higher-level requirements' priorities are inherited by their detailed requirements. Priorities are indicated using the following labels:

- [M] for Must-Have (essential) requirements
- [S] for Should-Have (important but not critical) requirements
- [C] for Could-Have (nice to have but optional) requirements

## 1.3 INTENDED AUDIENCE AND READING SUGGESTIONS

This document is intended for a diverse set of readers, including but not limited to:

- **Developers:** To understand the technical specifications and requirements for system implementation.
- **Project Managers:** To align project planning, scheduling, and resource allocation with the defined requirements.
- **Marketing Staff:** To gain insights into the system's features and capabilities for promotional purposes.
- **Users:** To understand the functionalities and limitations of the Personal Wealth Management System.
- **Testers:** To create test cases and ensure that the system meets the specified requirements.
- **Documentation Writers:** To assist in creating user manuals and training materials.

Readers are recommended to start with the overview sections (Sections 1 and 2) to gain a high-level understanding of the project. Subsequently, readers can delve into specific sections based on their role and interest.

## 1.4 PRODUCT SCOPE

The Personal Wealth Management System is designed to assist users in managing their personal finances and investments. It provides the following benefits, objectives, and goals:

**Benefits:**

- Efficient tracking of income, expenses, assets, and liabilities.
- Investment portfolio management and performance analysis.
- Financial goal setting and progress tracking.
- Data security and privacy protection.

**Objectives:**

- Simplify financial management and planning.
- Enable informed investment decisions.
- Enhance financial well-being and security.

**Goals:**

- Provide a user-friendly interface.
- Ensure accurate financial data calculations.
- Support integration with financial institutions.
- Maintain data privacy and security.

This software aligns with corporate goals of promoting financial well-being and security for individuals.

## 1.5 REFERENCES

The following references are relevant to this SRS:

- [User Interface Style Guide, Version 2.0]
- [Project Contract, May 15, 2023]
- [System Requirements Specifications, Revision 3]
- [Vision and Scope Document, Version 1.2]

Please refer to these documents for additional context and detailed information.

# 2. Overall Description

## 2.1 PRODUCT PERSPECTIVE

The Personal Wealth Management System is a new, self-contained product aimed at providing users with a comprehensive tool for managing their personal finances and investments. It is not a follow-on member of any product family nor a replacement for existing systems. However, it may offer integration options with external financial institutions and services.

The system interfaces with external financial data providers and may utilize APIs to fetch real-time financial data, such as stock prices, currency exchange rates, and bank account information. A high-level diagram illustrating the system's major components and external interfaces is provided in Appendix A for reference.

## 2.2 PRODUCT FUNCTIONS

**PF1: User registration and authentication**

- Allows users to create an account and log in to the system.
- Ensures that only authorized users have access to the system and their financial data.

**PF2: Financial data input and categorization**

- Allows users to manually input their financial data, such as income, expenses, investments, and assets.
- Automatically categorizes financial transactions to make it easier for users to track their spending and saving habits.

**PF3: Income and expense tracking**

- Provides users with a real-time view of their income and expenses.
- Generates reports that help users to identify areas where they can reduce their spending or increase their savings.

**PF4: Investment portfolio management**

- Allows users to track their investment portfolios and performance.
- Provides users with tools to rebalance their portfolios and make investment decisions.

**PF5: Goal setting and tracking**

- Allows users to set financial goals, such as saving for retirement or buying a house.
- Tracks users' progress towards their goals and provides them with feedback.

**PF6: Data visualization and reporting**

- Visualizes financial data in charts and graphs to make it easier for users to understand their financial situation.
- Generates reports that provide users with insights into their spending, saving, and investment habits.

**PF7: Integration with external financial data sources**

- Allows users to connect their financial accounts to the system, so that their financial data is automatically updated.
- This can save users time and hassle, and ensure that their financial data is always up-to-date.

**PF8: Data security and access control**

- Implements security measures to protect users' financial data from unauthorized access.
- Allows users to control who has access to their financial data and what permissions they have.

In addition to these core features, personal wealth management software may also offer other features, such as:

- Financial planning tools
- Tax planning tools
- Estate planning tools
- Retirement planning tools
- Educational resources

## 2.3 USER CLASSES AND CHARACTERISTICS

The following user classes are anticipated:

**UC1: Basic Users:** Individuals with basic financial management needs, limited technical expertise, and no formal financial training.

**UC2: Advanced Users:** Financial enthusiasts with more complex financial portfolios, greater technical expertise, and a desire for in-depth analysis and customization.

**UC3: Administrators:** System administrators responsible for user management, system configuration, and ensuring data integrity.

User characteristics, such as technical proficiency, financial knowledge, and security requirements, will vary among these classes. Basic Users may have limited financial literacy, while Advanced Users might require advanced analytics features. Administrators will require elevated privileges for system management.

## 2.4 OPERATING ENVIRONMENT

The Personal Wealth Management System will operate in the following environment:

- **Hardware Platform:** Compatible with modern desktop and mobile devices.
- **Operating Systems:** Supported on Windows, macOS, iOS, Android, and web browsers (Chrome, Firefox, Safari).
- **Software Components:** Requires access to external financial data sources via APIs. Integration with third-party financial apps and services may be supported.

## 2.5 DESIGN AND IMPLEMENTATION CONSTRAINTS

Several constraints will impact the design and implementation of the system:

**DC1: Regulatory Compliance:** The system must adhere to financial regulations and data privacy laws, ensuring the security and confidentiality of user financial data.

**DC2: Hardware Limitations:** The system should be optimized for performance on devices with varying processing power and memory.

**DC3: Integration Interfaces:** Compatibility and data exchange with external financial institutions may depend on their APIs and data formats.

**DC4: Security:** Strong encryption and authentication mechanisms are necessary to protect user data.

**DC5: Design Conventions:** The software will adhere to design conventions and programming standards defined by the development team.

## 2.6 USER DOCUMENTATION

The following user documentation components will be delivered with the software:

- **User Manuals:** Comprehensive guides explaining system functionalities and usage.
- **On-line Help:** Context-sensitive help within the application for real-time assistance.
- **Tutorials:** Step-by-step tutorials to assist users in setting up accounts, tracking finances, and managing investments.

These documents will be provided in both digital and printable formats to accommodate user preferences. They will adhere to industry standards for user documentation delivery.

## 2.7 ASSUMPTIONS AND DEPENDENCIES

**Assumptions:**

**AS1:** **Third-Party Components:** We assume that third-party financial data providers' APIs (e.g., stock market data, currency exchange rates) will be available and accessible for integration. Any changes or restrictions to these APIs could impact the system's functionality.

**AS2:** **Development Environment:** It is assumed that the development environment will include modern programming languages and tools, allowing for the implementation of required features and security measures.

**AS3:** **Data Privacy Regulations:** We assume that the legal and regulatory environment regarding data privacy will remain consistent during the development and deployment of the system. Any changes in regulations may require adjustments to data handling practices.

**AS4:** **User Internet Connectivity:** Users are assumed to have a stable internet connection for accessing the system's online features. Lack of internet connectivity may limit certain functionalities.

## Dependencies:

- **D1: External Financial Data Providers:** The project depends on the availability and reliability of third-party financial data providers' APIs. Any changes or outages in these services may impact the system's ability to fetch real-time financial data.
- **D2: Security Libraries:** The system relies on security libraries for data encryption and user authentication. Dependencies on these libraries include timely updates and security patches.

# 3. External Interface Requirements

## 3.1 USER INTERFACES

The user interface of the Personal Wealth Management System will be designed for ease of use and consistency across platforms (web, desktop, and mobile). Specific design details, including sample screen images and layout, will be documented in a separate User Interface Specification.

## 3.2 HARDWARE INTERFACES

The system will be compatible with standard desktop and mobile hardware components. It is designed to operate on devices running Windows, macOS, iOS, Android, and web browsers. There are no specific hardware dependencies beyond these standard platforms.

## 3.3 SOFTWARE INTERFACES

The Personal Wealth Management System will interface with the following software components:

- **SI1: Database System:** The system will interact with a relational database management system (RDBMS) for data storage and retrieval. The RDBMS version and specifications will be detailed in the system architecture documentation.
- **SI2: Operating Systems:** The software will operate on multiple operating systems, including Windows, macOS, iOS, and Android. Compatibility and communication with specific versions will be ensured during development.
- **SI3: Third-Party APIs:** The system will connect to third-party financial data providers' APIs to fetch real-time financial information, such as stock prices and currency exchange rates. Specific API endpoints, data formats, and integration methods will be documented in the system architecture.

Data sharing between software components will primarily occur through defined APIs, ensuring seamless communication.

## 3.4 COMMUNICATIONS INTERFACES

The following communication interfaces are required by the Personal Wealth Management System:

- **CI1: Internet Protocols:** The system will use standard internet protocols, such as HTTP/HTTPS, for data communication with external APIs and web services.
- **CI2: Email Notifications:** Users may receive email notifications for account-related activities. SMTP will be used for email communication.
- **CI3: Data Transfer Security:** Secure Sockets Layer (SSL) encryption will be implemented to ensure data security during transmission.
- **CI4: User Messaging:** In-app messaging may be utilized for user-to-user communication, and message formatting will follow standard conventions.

Communication security and encryption standards will be implemented to protect user data and ensure the confidentiality of sensitive information.

# 4. System Features

## 4.1 USER REGISTRATION AND AUTHENTICATION

### 4.1.1 Description and Priority

This feature enables users to create accounts, providing authentication to access their financial data securely. Priority**:** High**.**

### 4.1.2 Stimulus/Response Sequences

- User initiates the registration process by providing personal details.
- System verifies the provided information and sends a confirmation email.
- User clicks the confirmation link to activate the account.
- Upon activation, users can log in securely with their credentials.

### 4.1.3 Functional Requirements

**REQ-1:** Users must provide a valid email address and create a secure password during registration.

**REQ-2:** The system must verify email addresses and send confirmation emails.

**REQ-3:** User passwords must meet security criteria (e.g., minimum length, complexity).

**REQ-4:** Failed login attempts should trigger temporary account lockout.

**REQ-5:** Users should have the option to reset forgotten passwords securely.

## 4.2 FINANCIAL DATA INPUT AND CATEGORIZATION

### 4.2.1 Description and Priority

This feature allows users to input and categorize their financial transactions. Priority: High.

### 4.2.2 Stimulus/Response Sequences

- User adds income or expense transactions via the user interface.
- The system processes the transaction data and categorizes it automatically based on predefined rules.
- Users can manually adjust or add categories as needed.

### 4.2.3 Functional Requirements

**REQ-6:** Users can input transaction details, including date, amount, description, and category.

**REQ-7:** The system should provide auto-categorization based on transaction descriptions.

**REQ-8:** Users have the option to customize and create new transaction categories.

**REQ-9:** Transactions must be stored securely and associated with the user's account.

# 5. Other Nonfunctional Requirements

## 5.1 PERFORMANCE REQUIREMENTS

**PR1:** **Response Time:** The system should respond to user actions (e.g., transaction input, report generation) within 2 seconds under normal load conditions.

**PR2:** **Scalability:** The system must handle a minimum of 10,000 registered users simultaneously.

**PR3:** **Data Storage:** User data, including financial transactions, must be stored securely and should have a backup and recovery mechanism.

**PR4:** **Availability:** The system should have an uptime of 99.9% to ensure continuous access for users.

**PR5:** **Data Security:** User financial data must be encrypted both in transit and at rest, following industry standards.

These performance requirements are essential to ensure a responsive, scalable, and secure Personal Wealth Management System.

## 5.2 SAFETY REQUIREMENTS

The Personal Wealth Management System does not involve direct safety concerns, as it primarily deals with financial data management. However, it should adhere to standard security practices to safeguard user data and financial information.

## 5.3 SECURITY REQUIREMENTS

**SRQ1:** **User Authentication:** Users must authenticate their identity using secure login credentials (e.g., username and password).

**SRQ2:** **Data Encryption:** All data transmitted between the user's device and the server, as well as data stored on the server, must be encrypted using industry-standard encryption protocols.

**SRQ3:** **Access Control:** The system should implement role-based access control, ensuring that users can only access data and perform actions based on their assigned roles.

**SRQ4: Audit Trails:** The system should maintain audit trails to track and log user actions, especially those related to financial transactions.

**SRQ5: Data Backup and Recovery:** Regular data backups and a disaster recovery plan must be in place to prevent data loss.

**SRQ6: Third-Party API Security:** Any third-party APIs used for data retrieval should adhere to security best practices and be evaluated for potential vulnerabilities.

## 5.4 SOFTWARE QUALITY ATTRIBUTES

- **Usability:** The system should have a user-friendly interface with intuitive navigation and clear instructions.
- **Reliability:** The system should be highly reliable with an uptime of at least 95%.
- **Data Accuracy:** Financial data calculations must be accurate to ensure reliable financial planning.
- **Scalability:** The system should scale to accommodate increasing user loads.
- **Security:** Data security is a top priority, and the system should adhere to industry-standard security practices.

## 5.5 BUSINESS RULES

- **User Roles:** Only registered users can access the system. Administrators have access to all functionalities, while Basic and Advanced Users have access to features according to their roles.
- **Transaction Authorization:** Users can only view and modify their own financial data.
- **Password Policies:** Users must adhere to password complexity requirements for account security.
- **Data Privacy:** The system must comply with data privacy laws and regulations, and user data must not be shared without user consent.

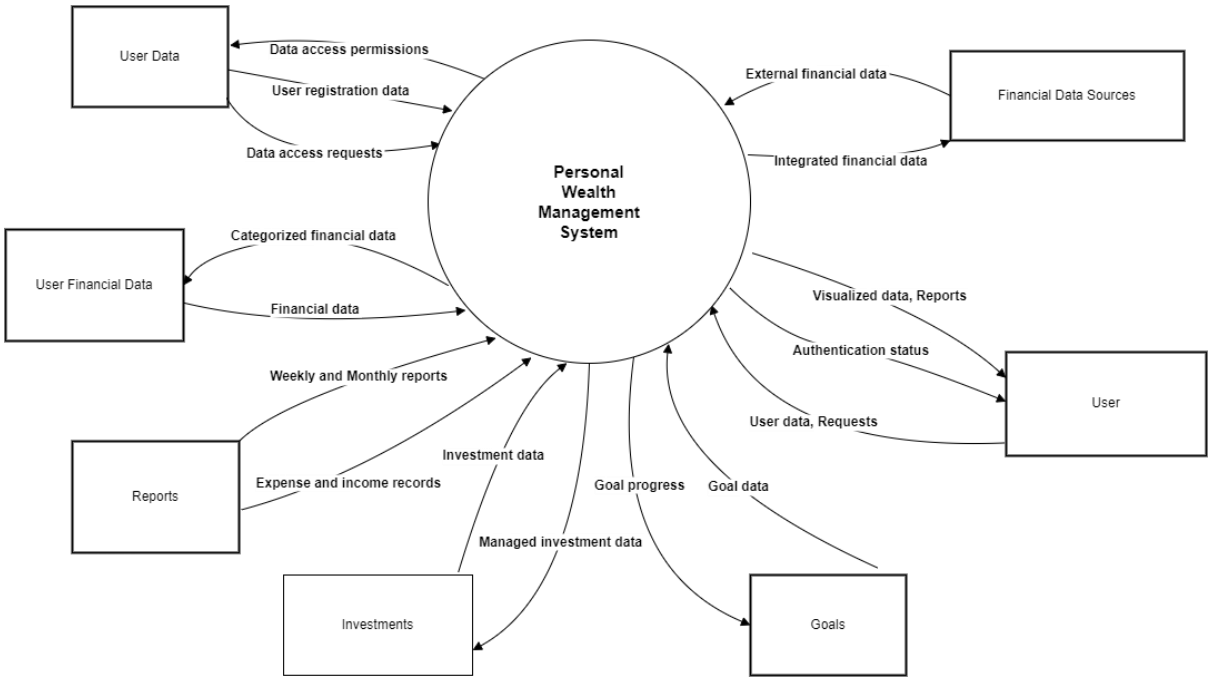
# 6. Other Requirements

- **Database Requirements:** The system will use a relational database for data storage. Details of database schema and design will be documented separately.
- **Internationalization Requirements:** The system will support multiple languages and currency formats to cater to an international user base.
- **Legal Requirements:** The system will adhere to all relevant legal and regulatory requirements pertaining to financial data management.
- **Reuse Objectives:** Code reuse objectives will be documented in the project's coding standards and best practices guidelines.

## APPENDIX A: GLOSSARY

- API: Application Programming Interface
- RDBMS: Relational Database Management System
- SMTP: Simple Mail Transfer Protocol
- SSL: Secure Sockets Layer

## APPENDIX B: ANALYSIS MODELS




Entity-relationship diagrams, will be developed during the system design phase and documented in separate design documents.

## APPENDIX C: TO BE DETERMINED LIST

This section contains a list of references that are marked as "TBD" (to be determined) in the SRS. These references require further information or clarification and will be updated as the project progresses.

**TBD1:** Details of the disaster recovery plan for data backup and recovery.

**TBD2:** Specific API endpoints and integration methods for third-party financial data providers.

**TBD3:** Password complexity requirements (e.g., minimum length, character types).

**TBD4:** Detailed database schema and design for data storage.

**TBD5:** Reuse objectives for code components in the project.

As the project evolves, these TBD references will be addressed and replaced with specific information to ensure the SRS is complete and accurate.