Software Requirements Specification

for

Personal Wealth Management System

Version 1.0 approved

Prepared by Team: 404 brain not found

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12-09-2023

Table of Contents

Revision History

Name	Date	Reason For Changes	Version

1. Introduction

Purpose

This software requirements specification (SRS) document describes the features and functionality of the personal wealth management software that we are developing. The software will help people track their assets, liabilities, net worth, investments, returns on investment, mutual funds, and interest earnings. It will also allow them to create and track a budget, set financial goals, and generate reports.

Document Conventions

We will use the following conventions in this SRS document:

- Boldface text will be used for keywords and important terms.
- Italicized text will be used for emphasis.
- Bulleted lists will be used to present a list of items.
- Numbered lists will be used to present a list of items in a specific order.
- All requirements will be numbered sequentially.

Intended Audience and Reading Suggestions

This SRS document is intended for the following audiences:

- *Developers*: The SRS document serves as the main reference for those who are in charge of putting the software into practice. They will receive all of the specific specifications they require, including information on the user interface, data structures, algorithms, and the features and functioning of the software.
- *Managers of projects*: The SRS document will aid managers in organizing and supervising the software development process. It will notify them about the project's parameters, including its duration, budget, and hazards.
- *Marketing personnel*: The SRS document will assist marketing personnel in outlining the features and advantages of the programme to prospective clients. They can use it to produce marketing materials like brochures and website content.
- *Users*: This document will help you to understand how to use the software.
- *Testers:* The SRS document will help testers to test the software to ensure that it meets the requirements. It will provide them with information about the expected behavior of the software, as well as the test cases that they need to use.
- *Documentation writers:* The SRS document will help documentation writers to write the user documentation for the software. It will provide them with information about the features and

Product Scope

The personal wealth management software will track the following information:

- *Assets:* Cash, investments, real estate, and other belongings.
- *Liabilities:* Debt, mortgages, and other obligations.
- *Net worth:* The difference between assets and liabilities.
- *Budget:* A plan for how the user will spend their money.
- *Investments:* The user's investments, including their performance and returns.
- *Financial goals:* The user's financial goals, such as saving for retirement or buying a house.
- *Reports:* Reports that show the user's financial data in a clear and concise way.

The software will also allow the user to do the following:

- Create and track a budget.
- Set financial goals.
- Generate reports.
- Track their taxes and returns.

References

the references that I used to write the above:

1. *IEEE Recommended Practice for Software Requirements Specifications: https://ieeexplore.ieee.org/document/88286*
2. *How to Write a Software Requirements Specification (SRS) Document: https://relevant.software/blog/software-requirements-specification-srs-document/*
3. *Writing a Software Requirements Specification Document: https://enisinanaj.medium.com/writing-a-software-requirements-specification-document-97d622805aef*
4. *What is SRS document as per IEEE standard?: https://www.studocu.com/in/document/galgotias-university/software-engineering-testing-methodologies/define-ieee-standards-for-srs/53729665*

2. Overall Description

2.1 Product Perspective

Cashculate – key for financial success and security. This unique platform gives users unprecedented control over their funds. With advanced tools for calculating net wealth, budgeting, investment tracking, and goal setting, anyone can easily optimize their wealth approach. It effortlessly manages assets, future finances, and makes smart financial decisions. Cashculate's Personal Wealth Management System is secure, user-friendly, and personalized to individual needs, providing a route to financial prosperity. Figure 1 shows the context diagram for the Personal Wealth Management System.

2.2 Product Functions

Recommendation System*:* The recommendation system uses data and algorithms to personalize users wealth and provides investment advice, optimize portfolios, and manage risk for clients, helping them achieve their financial goals. It continuously monitors and adjusts recommendations, integrating machine learning and AI for accuracy, while also prioritizing security and compliance.

Positive Income*:* Positive income is referring to the money an individual earns through various sources of assets including employment, investments, business operations, or rental income.

Negative Income*:* The term negative income here, refers to the obligations that result from an individual's debt-related spending exceeding their available income. Financial stability may necessitate methods like debt consolidation or negotiating with creditors as a result of financial strain and impending loan default.

Get notification*:* In order to keep the user informed about their money, it alerts them to their present wealth status and also sends them recommendation notifications.

2.3 User Classes and Characteristics

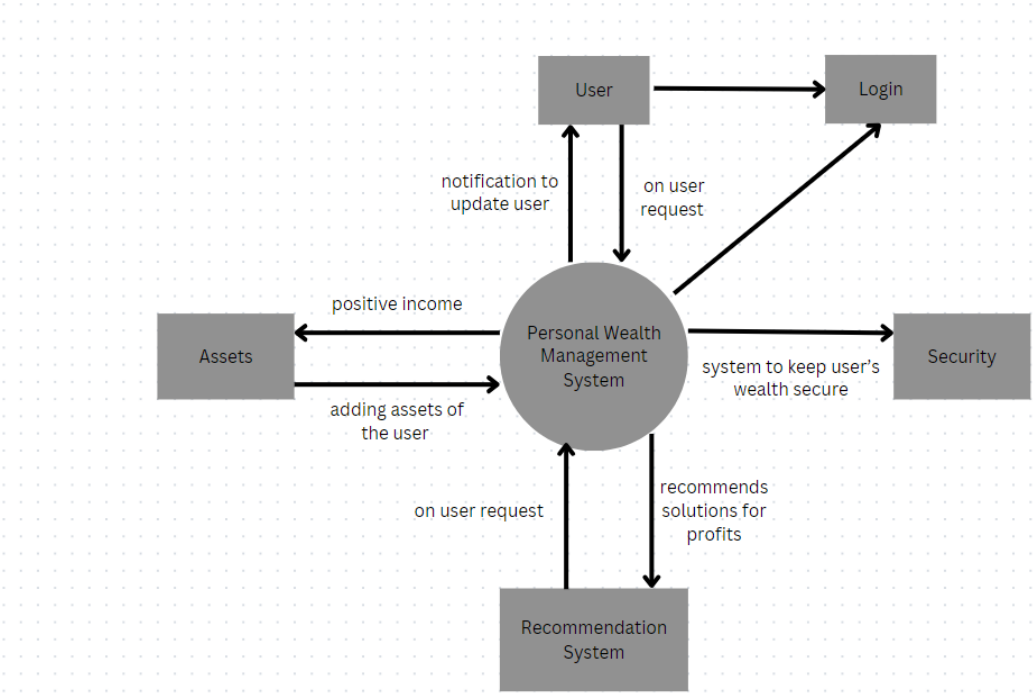

***Figure 1**: Context diagram from Personal Wealth Management System.*

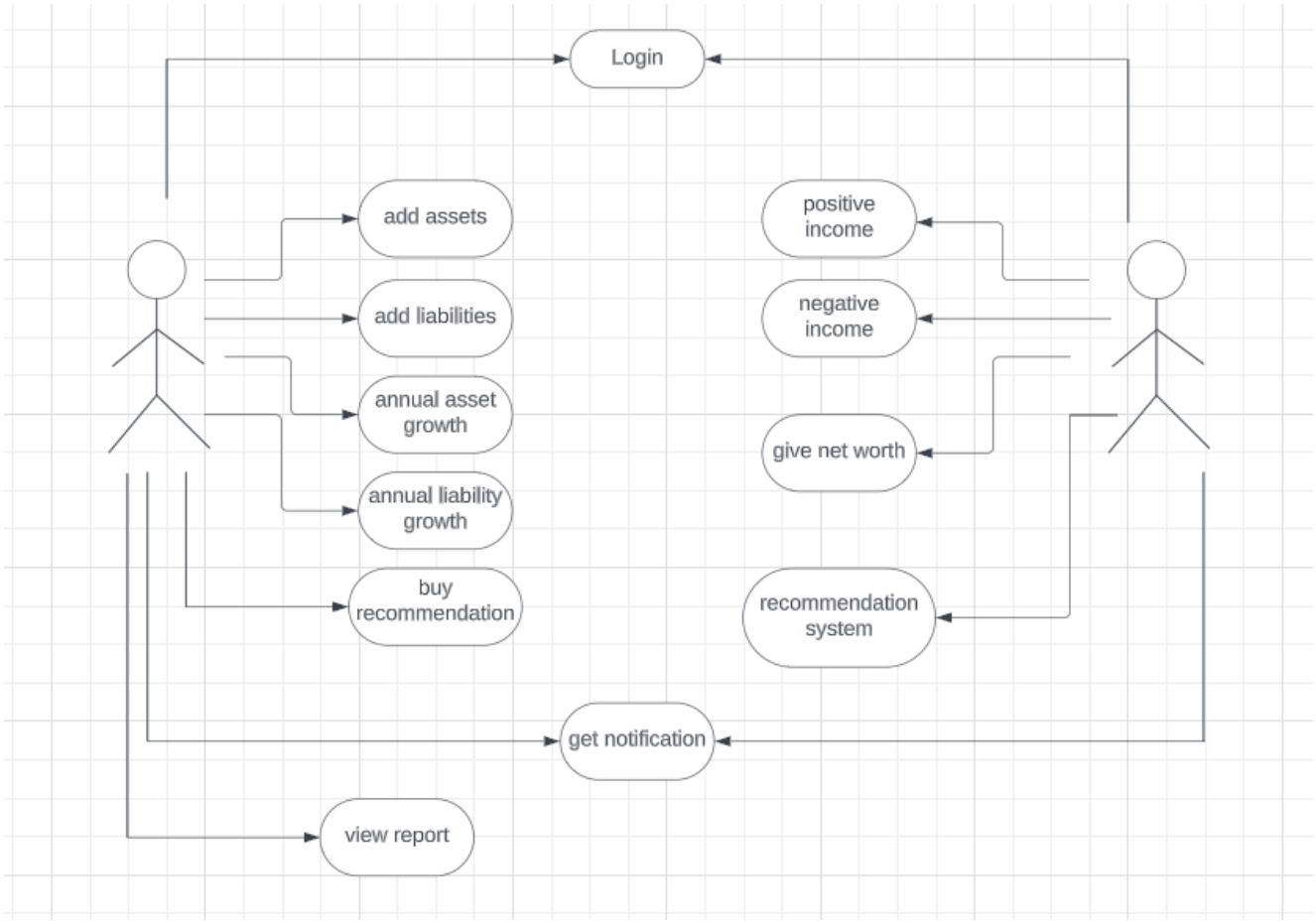

Figure 2**: Use case diagram for Personal Wealth Management System, **Cashculate

2.4 Operating Environment

***OE-1**:* The Personal Wealth Management System shall operate with the following Web browsers: Microsoft Internet Explorer versions 5.0 and 6.0.

***OE-2**:* The Personal Wealth Management System shall permit user access from the corporate Intranet and, if a user is authorized for outside access through the corporate firewall, from an Internet connection at the user's home.

2.5 Design and Implementation Constraints

***CO-1**:* The Process Impact Intranet Development Standard, Version 1.3 [2] must be followed in the design, coding, and maintenance documentation of the system.
***CO-2**:* Implement robust security measures and adhere to data privacy regulation.
***CO-3**:* All HTML code shall conform to the HTML 4.0 standard.
***CO-4**:* All scripts shall be written using HTML.

2.6 User Documentation

***UD-1**:*The system must have a recommendation mechanism to keep the user informed and aware of the best methods to use wealth to maximize profits.
***UD-2**:* The system shall provide an online tutorial for the user to become used to the system's operation the first time a new user enters the system and on user demand thereafter.

2.7 Assumptions and Dependencies

***AS-1**:* Individuals use the personal wealth management system to make wise budgeting decisions and investment selections in order to enhance their economic security and accomplish their financial objectives.

***DE-1**: **Cashculate's** functionality depends on adjustments being made to the user's assets, which have an impact on the user's positive income.*

***DE-2**: The operation of **Cashculate** depends on corrections being made to their obligations/ liabilities in order to calculate the negative income for improvement and recommendations in order to sustain it*

3. External Interface Requirements

3.1 User Interfaces

The user interface should be designed to be easy to use and navigate. The following are some specific design considerations:

- The use of clear and concise language.
- The use of simple and intuitive navigation.
- The use of visual cues to help users understand the system.
- The use of error messages that are clear and helpful.

3.2 Hardware Interfaces

- ***Webcam****:* The webcam will be used to capture the user's face for biometric identification. The webcam should be a high-quality webcam with a resolution of at least 1080p. It should also be positioned in a way that provides a clear view of the user's face.
- ***Fingerprint sensor****:* The fingerprint sensor will be used to capture the user's fingerprint for biometric identification. The fingerprint sensor should be a high-quality fingerprint sensor with a high accuracy rate. It should also be positioned in a way that is convenient for the user to use.
- ***Hardware interface****:* The webcam and fingerprint sensor will be connected to the computer via a USB port or can be inbuilt in the system in use. The software will be responsible for capturing the user's biometric data and verifying it against the stored biometric data.

3.3 Software Interfaces

Some of the software interfaces that are considered in our personal wealth management software:

- ***Web-based interface****: A web-based interface would allow users to access the software from any device with an internet connection. This would be the most convenient option for users, but it would also be the most expensive to develop and maintain.*
- ***Desktop application****: A desktop application would be installed on the user's computer. This would be less convenient than a web-based interface, but it would also be more secure and reliable.*
- ***Mobile application****: A mobile application would be available for smartphones and tablets. This would be a convenient option for users who are on the go, but it would also be the most difficult to develop and maintain.*

The best software interface for a personal wealth management software will depend on our target audience and our budget. If we are targeting a large audience, then a web-based interface would be the best option. If we are targeting a small audience, then a desktop application or a mobile application could be a better option.

Here are some of the specific features that are considered for the software interface:

- **Login**: The software should require users to login with a username and password. This will help to protect the user's financial data from unauthorized access.
- **Dashboard**: The dashboard should provide users with a summary of their financial data, such as their net worth, investment performance, and financial goals.
- **Transactions**: The software should allow users to track their transactions, such as deposits, withdrawals, and investments.
- **Reports**: The software should allow users to generate reports on their financial data.
- **Goal setting**: The software should allow users to set financial goals and track their progress towards those goals.
- **Budgeting**: The software should allow users to create and track a budget.
- **Investment advice**: The software could provide investment advice, such as suggesting investments that are appropriate for the user's risk tolerance and financial goals.
- **Tax planning**: The software could help users with tax planning, such as calculating their tax liability and suggesting strategies to minimize their taxes.

The specific features that are included in the software interface will depend on our target audience and the features that they need.

3.4 Communications Interfaces

The communication interface should be designed to be easy to use and secure. The following are some specific design considerations:

- *The use of clear and concise language.*
- *The use of simple and intuitive navigation.*
- *The use of visual cues to help users understand the system.*
- *The use of error messages that are clear and helpful.*

Examples:

The following are some examples of how the communication interface could be implemented:

- The GUI could use buttons, menus, and dialog boxes to allow the user to interact with the system.
- The CLI could use commands and parameters to allow the user to interact with the system.
- The REST API could use HTTP requests and responses to allow the user to interact with the system.

4. System Features

4.1 Calculate current net worth

4.1.1 Description and Priority:

based on your assets and liabilities, software that quickly assesses your own wealth. It's your go-to tool for getting a clear and up-to-date picture of your financial situation because it integrates real-time data, offers interactive visualizations, and tracks goals.

4.1.2 Stimulus/Response Sequences:

Stimulus: User inputs his/her asset values (property,investment,cash)

Response: System calculates positive income of the user

Stimulus: User inputs his/her liabilities (mortgage ,loan and debt)

Response: System calculates negative income of the user

Stimulus: User requests to view his current net worth.

Response: System calculates the current based on the assets and liabilities.

4.1.3 Functional Requirements:

worth.Input: The system shall let a User who is logged into the software input their asset and liability details.

worth.Input.Confirm: The system shall confirm the users inputs.

worth.Input.Confirm.Yes: if the user confirms his input , the software will calculate his/her net worth

4.2 Calculate future personal wealth

4.2.1 *Description and Priority:*

It accounts for annual asset growth, annual liabilities growth, and investment returns. Gaining a forward-looking view on your financial status with WealthVisionary gives you the ability to manage your wealth effectively and meet your financial goals.

4.2.1 Stimulus/Response Sequences:

Stimulus: User inputs his/her annual asset growth (AAG)

Response: System predicts his net positive income based on the AAG

Stimulus: User inputs his/her annual liability growth (ALG)

Response: System predicts his net negative income based on the ALG

Stimulus: The user selects an investment risk profile from the list below.

Response: Based on the risk profile and the selected time period, the system forecasts his/her profits.

Stimulus: The user views his projected net worth for a given time period.

Response: Based on the risk profile and the selected time period, the system forecasts his/her profits.

4.2.2 Functional Requirements:

Future_worth.Input: When a user is registered in to the software, the system will allow them to enter information about their asset growth and liability growth.

worth.Input.Confirm: The system shall confirm the users inputs.

worth.Input.Confirm.Yes: If the user verifies his entry, the programme will estimate his or her future net worth based on the risk profile selected and the length of time they intend to keep using the same investing strategy.

5. Other Nonfunctional Requirements

5.1 Performance Requirements

1) **Response Time for User Interactions** : The system responds to user interactions (e.g., queries, account updates) within 1 second to provide a seamless and responsive user experience.

2) **Real-time Data Processing** : The model is capable of processing real-time financial data streams, ensuring that any updates or changes in the market are reflected in the user's portfolio with a latency of no more than 5 seconds.

3) **Scalability:** The system is able to handle a scalable number of users, accounts, and transactions without compromising performance. It supports at least 10,000 concurrent users.

4) **Security Measures Latency**: Authentication and authorization processes are performed within 500 milliseconds to ensure secure access to the user's financial information.

5) **Notification delivery time:** Notifications (e.g., alerts, updates) should be delivered to users in real-time or near-real-time, within 5 seconds of the triggering event.

6) **Data retrieval time**: Fetching historical market data or financial information from external sources should be accomplished in less than 3 seconds to avoid delays in processing user requests.

7) Concurrent Transaction Handling: The system is capable of handling a minimum of 100 concurrent financial transactions (e.g., buying/selling securities) without affecting the responsiveness of the platform.

8) Automated Monitoring and Alerting: Monitoring systems are set up to track key performance indicators (KPIs) in real-time and trigger alerts in case of performance degradation or breaches of predefined thresholds.

9) **Support for Mobile Devices:** The system should be optimized for mobile devices, with response times tailored to provide a smooth user experience on various screen sizes and device types.

10) Reporting and Transparency: Provides regular and transparent reporting to clients, including portfolio performance, asset allocation, and any changes in the investment strategy. It ensures compliance with reporting regulations and standards.

5.2 Safety Requirements

Data Security:

- Requirement: Protects client data from unauthorized access, breaches, or cyberattacks.
- Safeguards: Implemented robust encryption, access controls, and intrusion detection systems.
- Actions to Prevent: Regularly updating security protocols and conducting security audits.
- External Policies/Regulations: Complying with data protection regulations (e.g., GDPR, CCPA) and industry standards (e.g., ISO 27001).
- Safety Certifications: ISO 27001 certification is required.

Client Privacy:

- Requirement: Ensures the confidentiality of client information.
- Safeguards: Maintains strict confidentiality agreements and access controls.
- Actions to Prevent: Educating employees on privacy policies and enforcing strict data access protocols.
- External Policies/Regulations: Adhere to privacy laws and regulations (e.g., HIPAA for healthcare clients).
- Safety Certifications: HIPAA compliance certification if applicable.

Fraud Prevention:

- Requirement: Detects and prevents fraudulent activities within client accounts.
- Safeguards: Utilizes fraud detection algorithms, transaction monitoring, and client authentication mechanisms.
- Actions to Prevent: Regularly updating fraud detection algorithms to adapt to new threats.
- External Policies/Regulations: Follows industry-specific anti-fraud regulations.
- Safety Certifications: Compliance with relevant anti-fraud standards.

Compliance with Investment Regulations:

- Requirement: Adhere to investment regulations to protect clients from improper or risky investments.
- Safeguards: Implementing compliance monitoring systems and conducting regular audits.
- Actions to Prevent: Training staff on compliance and regularly updating compliance procedures.
- External Policies/Regulations: Complying with securities and financial regulations specific to the region of operation.
- Safety Certifications: Compliance with relevant financial industry certifications.

5.3 Security Requirements

Data Encryption:

- Requirement: All client data, financial transactions, and communication is encrypted to protect against unauthorized access.
- User Identity Authentication: Implementing multi-factor authentication (MFA) for client access.
- External Policies/Regulations: Complying with data protection regulations (e.g., GDPR, HIPAA) and financial industry security standards.
- Security Certifications: ISO 27001 for information security management.

Access Control:

- Requirement: Ensures that only authorized personnel have access to sensitive client information.
- User Identity Authentication: Implement role-based access control (RBAC) and enforce strict

password policies.
- External Policies/Regulations: Adhere to financial industry regulations (e.g., SEC) and client privacy laws.
- Security Certifications: SOC 2 certification for security controls.

Intrusion Detection and Prevention:
- Requirement: Implements intrusion detection and prevention systems to identify and thwart unauthorized access attempts.
- User Identity Authentication: Monitor and analyze user login patterns for suspicious activities.
- External Policies/Regulations: Comply with industry-specific cybersecurity regulations.
- Security Certifications: Certified Information Systems Security Professional (CISSP) for security professionals.

Data Backup and Recovery:
- Requirement: Regularly backup client data and implement a disaster recovery plan to minimize data loss.
- User Identity Authentication: Secures backups with access controls and encryption.
- External Policies/Regulations: Follows industry best practices for data backup and recovery.
- Security Certifications: ISO 22301 for business continuity management.

5.4 Software Quality Attributes

Security:
- Requirement: Ensures the system is highly secure to protect sensitive financial data and client information.
- Verifiable: Regularly conduct penetration testing, and maintain compliance with ISO 27001 or equivalent standards.
- Relative Preference: Security is of paramount importance.

Reliability:
- Requirement: The system is reliable and available to clients 24/7 with minimal downtime.
- Verifiable: Monitors uptime and track system availability; aims for at least 99.9% uptime.
- Relative Preference: High reliability is critical to maintain client trust.

Maintainability:
- Requirement: The software is easily maintainable to quickly address issues and implement updates.
- Verifiable: Measures time to resolve issues and track the frequency of software updates.
- Relative Preference: Ease of maintenance is important to ensure swift responses to changing needs.

Usability:
- Requirement: The system is user-friendly and intuitive for both clients and wealth managers.
- Verifiable: Conduct user satisfaction surveys and usability testing; aim for high user satisfaction scores.
- Relative Preference: Usability should be balanced with robust functionality.

Interoperability:

- Requirement: Ensures compatibility with various financial data sources, third-party tools, and APIs.
- Verifiable: Verifies successful data exchange with external systems and services.
- Relative Preference: High interoperability is crucial for seamless integration with external financial tools.

Flexibility:

- Requirement: The system is flexible to adapt to changing financial regulations and client needs.
- Verifiable: Measures the time and effort required to implement regulatory changes or new features.
- Relative Preference: Flexibility is essential to stay compliant and meet evolving client demands.

Scalability:

- Requirement: The system is scalable to accommodate growing numbers of clients and assets under management.
- Verifiable: Monitor system performance as client numbers and assets increase; ensure smooth scaling.
- Relative Preference: Scalability is important for business growth.

Portability:

- Requirement: The system is portable across different platforms and environments.
- Verifiable: Test the system's functionality and performance on various operating systems and browsers.
- Relative Preference: Portability enhances accessibility for clients.

Availability:

- Requirement: Ensure high availability, with minimal planned downtime for maintenance.
- Verifiable: Monitor uptime and track scheduled maintenance activities.
- Relative Preference: High availability is crucial to meet client needs without disruptions.

5.5 Business Rules

1) User Authentication and Authorization:
- Only registered and authenticated users can access their wealth management accounts.
- Administrators have the authority to grant specific permissions or roles to users, such as read-only access, trading privileges, or administrative rights.

2) Risk Tolerance Assessment:
- Before making investment recommendations or executing transactions, the system assesses the user's risk tolerance based on their profile, preferences, and financial situation.

3) Compliance with Regulatory Standards:
- All investment strategies and transactions must comply with applicable legal and regulatory requirements, including tax laws, securities regulations, and financial industry standards.

4) Client Confidentiality:
- User data, including financial information and personal details, is kept confidential and secure. Access to sensitive information is limited to authorized personnel only.

5) Anti-Money Laundering (AML) Compliance:
- The system incorporates AML checks and procedures to detect and report suspicious transactions in accordance with relevant laws and regulations.

6) Reporting and Disclosure Requirements:
- The system generates regular reports detailing account performance, holdings, transactions, and other relevant information. These reports are made available to clients.

7) Diversification Requirements:
- The system enforces diversification rules to ensure that investment portfolios are adequately spread across different asset classes and industries, reducing risk.

8) Notification of Significant Events:
- Clients are promptly notified of significant events affecting their investments, such as major market movements, portfolio rebalancing, or changes in investment strategies.

6. Other Requirements

<Define any other requirements not covered elsewhere in the SRS. This might include database requirements, internationalization requirements, legal requirements, reuse objectives for the project, and so on. Add any new sections that are pertinent to the project.>

Appendix A: Glossary

<Define all the terms necessary to properly interpret the SRS, including acronyms and abbreviations. You may wish to build a separate glossary that spans multiple projects or the entire organization, and just include terms specific to a single project in each SRS.>

Appendix B: Analysis Models

<Optionally, include any pertinent analysis models, such as data flow diagrams, class diagrams, state-transition diagrams, or entity-relationship diagrams

Appendix C: To Be Determined List

<Collect a numbered list of the TBD (to be determined) references that remain in the SRS so they can be tracked to closure.>