

Software Requirements Specification

for
**Personal Finance Management
System
Version --
Prepared by Team No: 22
Syracuse University CSE 687
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1. Introduction

1.1. Purpose

This Personal Finance Management System (PFMS) Requirements Specification aims to outline the software requirements for the user's financial management needs. It serves as a blueprint for developers to implement essential features such as the Expense Tracker, enabling users to efficiently manage and monitor their expenditures. Additionally, it encompasses the Portfolio Analysis feature, facilitating users in tracking their investments and receiving personalized recommendations for optimal financial decisions.

1.2. Scope

This document outlines the requirements for the following capabilities:

1. **Expense Tracker:** A user-friendly dashboard to calculate and manage expenses efficiently. Functionality to categorize expenses, track spending patterns, and set budget limits. Ability to generate detailed reports and visualizations for expense analysis.
2. **Portfolio Analysis:**
Comprehensive tools to monitor and manage investments.
Features to track asset allocation, portfolio performance, and historical data.
Recommendation engine to suggest investment options based on user preferences and risk tolerance.

1.3. Definitions

BDD	Block Definition Diagram
SRS	Software Requirements Specification
UML	Unified Modeling Language
V&V	Verification and Validation

1.4. References

IEEE Std 830-1998 - IEEE Recommended Practice for Software Requirements Specifications - Revision of IEEE Std 830-1993. This document follows the recommended format specified in IEEE Std 830-1998 IEEE Recommended Practice for Software Specifications. For Section 3, the specific template A.5 for organizing information by feature is followed.

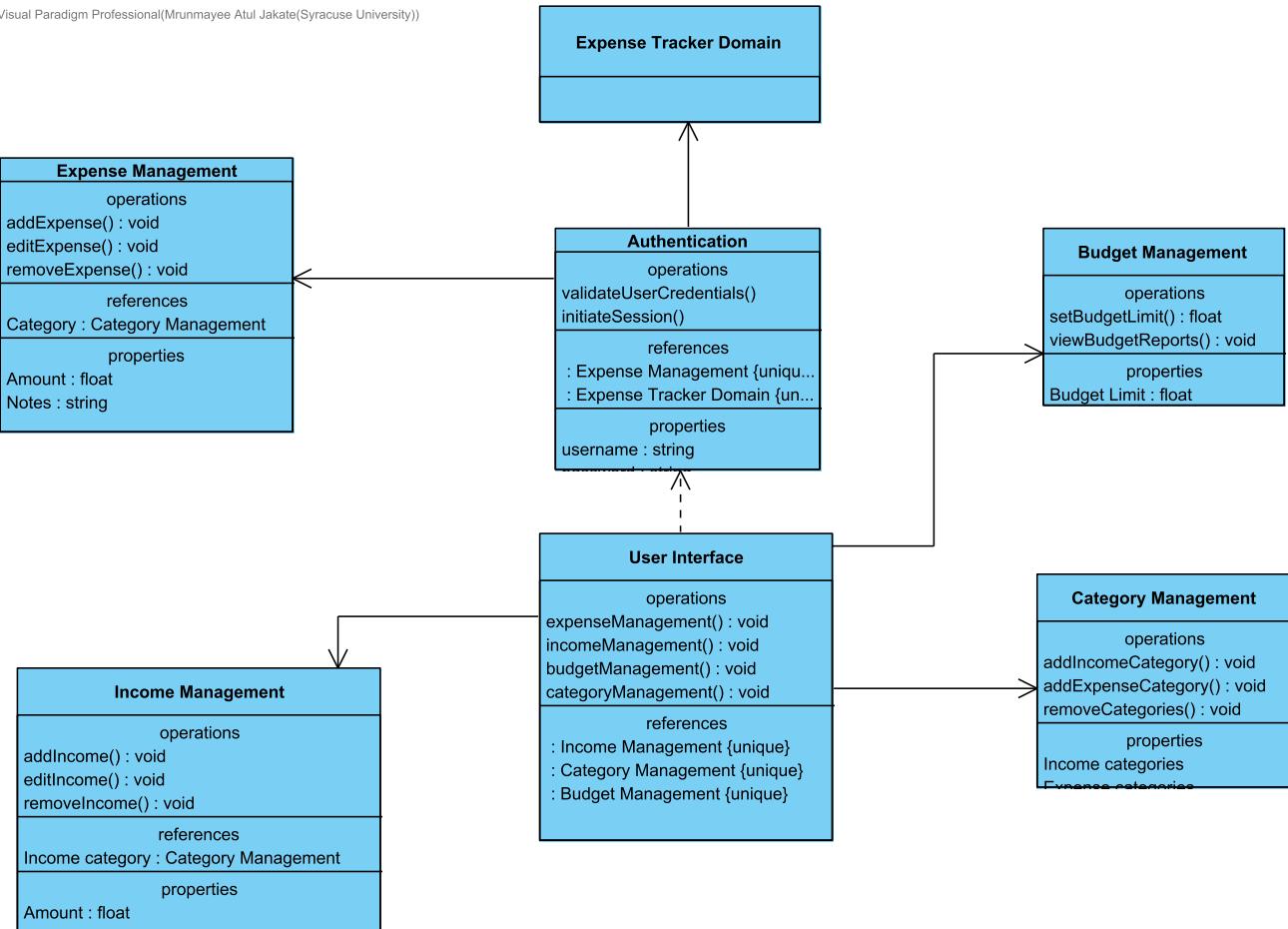
2. Overall Description

2.1. Product Perspective

The product perspective for this Software Requirements Specification (SRS) document underscores a comprehensive approach to personal finance management. It encompasses two primary features: an Expense Tracker, facilitating users in efficiently managing expenses through a user-friendly dashboard, and Portfolio Analysis, empowering users to monitor investments and receive personalized recommendations for optimal financial decisions. This perspective ensures a holistic view of the system, integrating essential functionalities to address diverse financial needs effectively. **Figure 1 System Block Diagram shows the system overview, using a Unified Modeling Language (UML) Block Definition Diagram (BDD)**

2.1.1. Expense Tracker Block Definition Diagram

Visual Paradigm Professional(Mrunmayee Atul Jakate(Syracuse University))



Budget Management

Micro-service which handles the creation, modification, and monitoring of budget allocations within the Personal Finance Management System, enabling users to set financial targets, track expenditures, and receive alerts when budget thresholds are reached, facilitating effective budgeting and financial planning

Authentication

Ensures secure access to the Personal Finance Management System by verifying user identities through authentication mechanisms such as passwords, or multi-factor authentication, safeguarding sensitive financial data and enhancing system security

Category Management

Allows user to add new Income categories, Facilitates the creation, modification, and organization of expense categories within the Personal Finance Management System, allowing users to categorize their expenses accurately and customize categories based on individual financial needs and preferences for efficient expense tracking and management.

Expense Management

Manages the storage, retrieval, and manipulation of expense data within the Personal Finance Management System, enabling functionalities such as recording, categorizing, and analyzing expenses for effective financial tracking and management

Income Management

Micro-service which manages the recording, updating, and analysis of income-related data within the Personal Finance Management System, facilitating users to track sources of income, monitor earnings over time, and analyze income patterns to support financial decision-making and planning

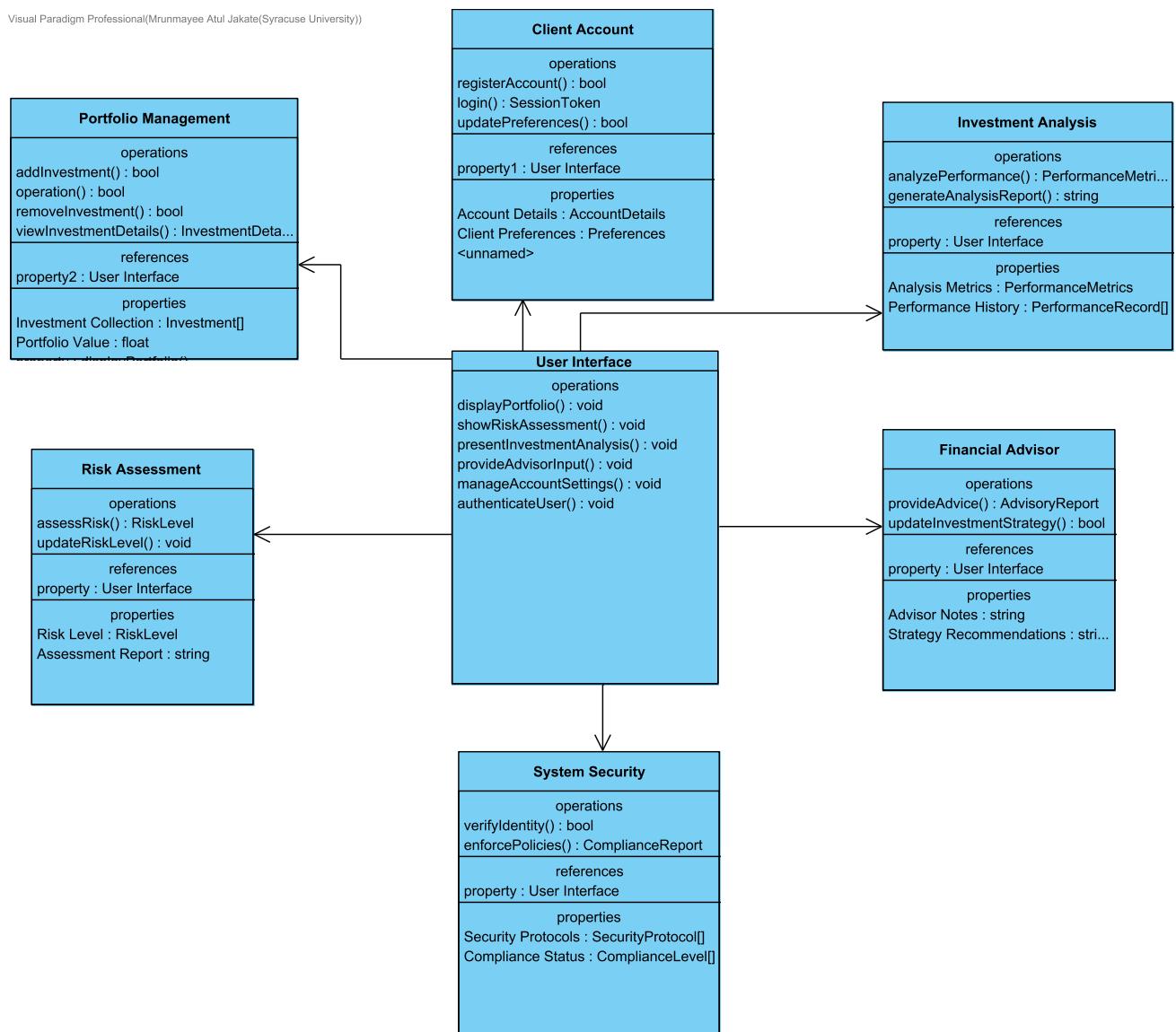
User Interface

Provides a user-friendly interface for interacting with the Personal Finance Management System, enabling users to access various features, input data, and visualize financial information efficiently, enhancing the overall user experience and usability of the system

2.1.2. Portfolio Analysis Block Definition Diagram

Portfolio Analysis Block Definition Diagram

Visual Paradigm Professional(Mrunmayee Atul Jakate(Syracuse University))



Client Account

Manages individual user accounts within the Personal Finance Management System, storing user profile information, preferences, and authentication credentials securely, enabling personalized access to financial data and features while ensuring data privacy and security compliance

Financial Advisor

Provides personalized financial guidance and recommendations within the Personal Finance Management System, leveraging user data and financial goals to offer tailored advice on budgeting, investments, and financial planning, empowering users to make informed decisions and achieve their financial objectives effectively

Investment Analysis

Conducts comprehensive analysis of investment data within the Personal Finance Management System, utilizing algorithms and statistical models to assess investment performance, identify trends, and provide insights to users for informed decision-making and optimization of investment strategies

Portfolio Management

Manages the aggregation, analysis, and visualization of investment portfolios within the Personal Finance Management System, enabling users to track asset allocation, monitor performance, and make informed investment decisions based on real-time data and analytics, enhancing overall financial portfolio management capabilities

Risk Assessment

Evaluates the potential risks associated with financial decisions and investments within the Personal Finance Management System, providing users with insights into risk exposure, mitigation strategies, and enhance overall financial security and stability

System Security

Implements robust security measures within the Personal Finance Management System, including encryption, access controls, and threat detection mechanisms, to safeguard sensitive financial data against unauthorized access, breaches, and cyber threats, ensuring data integrity and user trust.

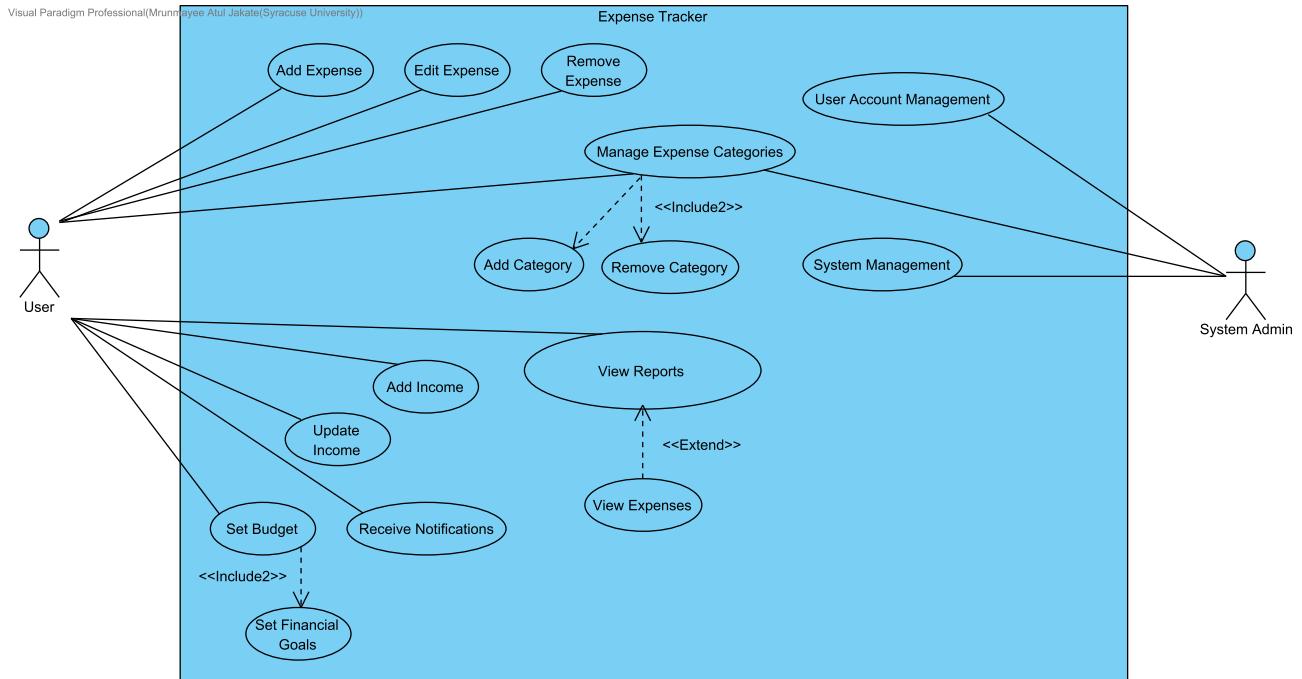
User Interface

Provides a user-friendly interface for interacting with the Personal Finance Management System, enabling users to access various features, input data, and visualize financial information efficiently, enhancing the overall user experience and usability of the system

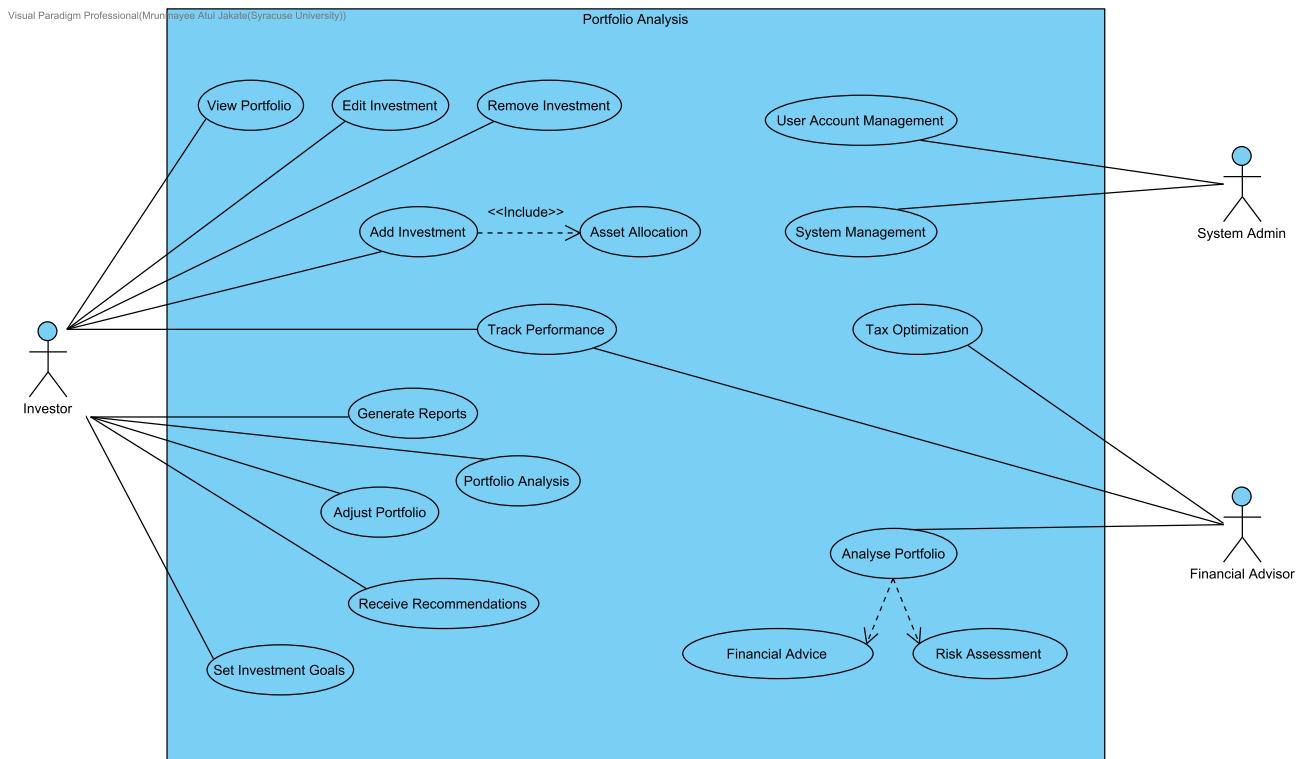
2.2. Product Functions

The following use case diagram depicts the users of the system, and the intended way in which they will interact with the system.

2.2.1. Expense Tracker Use Cases



2.2.2. Portfolio Analysis Use Cases



2.3. Use Case Descriptions

2.3.1. Use Cases of Expense Tracker

Add Category

ID: UC31

Details

Level	N/A
Complexity	N/A
Use Case Status	N/A
Implementation Status	N/A
Preconditions	<p>The user has appropriate permissions to add new expense categories within the system.</p> <p>The expense category management interface is accessible and functional.</p> <p>The user has logged into the system and authenticated their identity.</p>
Post-conditions	<p>Upon successful addition of the new expense category, the system updates its database to include the new category.</p> <p>The newly added expense category is displayed in the list of categories within the expense category management interface.</p> <p>The system provides confirmation to the user that the addition of the new category was successful.</p>
Author	N/A
Assumptions	N/A

Scenarios

Add Category - Sunny Day Scenario

1. This scenario begins when the user selects "Add Category" option from the UI
2. The user is then directed to the category creation form
3. The user can then add the details of the new expense category
4. The user can then save the new expense category by clicking on the save button
5. The new expense category record gets saved in the database
6. The user is notified of the successful save operation

Add Category - Rainy Day Scenario

1. This scenario begins when the user selects "Add Category" option from the UI
2. The user is then directed to the category creation form
3. The user can then add the details of the new expense category
4. The user can then save the new expense category by clicking on the save button

5. A server side exception prevents the save operation from executing
6. The new expense category record does not get saved in the database
7. The user is notified of the failure through appropriate error messages

Relationships

Relationship	From	To
↳ unnamed		

● Add Expense

ID: UC38

Primary Actors



User

Details

Level	N/A
Complexity	N/A
Use Case Status	N/A
Implementation Status	N/A
Preconditions	The user has access to the expense recording feature in the system. The user interface for adding expenses, including the single-line input field, is accessible and functional.
Post-conditions	Upon successful submission of the expense entry, the system stores the new expense record in the database. The expense entry is visible to the user and can be viewed or edited in the expense management interface.
Author	N/A
Assumptions	N/A

Scenarios

Add Expense - Sunny Day Scenario

1. This scenario begins when the user selects "Add Expense" option from the UI
2. The user is then required to select an expense category from a list of predefined expense categories
3. Based on their previous selection a new expense creation is displayed
4. The user can add expense details like amount, mode of payment etc
5. The user can then save the new expense by clicking on the save button
6. The new expense record gets saved in the database
7. The user is notified of the successful save operation

Add Expense - Rainy Day Scenario

1. This scenario begins when the user selects "Add Expense" option from the UI
2. The user is then required to select an expense category from a list of predefined expense categories
3. Based on their previous selection a new expense creation is displayed
4. The user can add expense details like amount, mode of payment etc

5. The user can then save the new expense by clicking on the save button
6. A server side exception prevents the creation of a new expense record in the database
7. The user is notified of the save operation failure through appropriate error messages

Requirements

Data Validation

ID: REQ043

The system shall validate all financial inputs against pre-defined business rules to maintain data integrity.

Financial Data Management

ID: REQ039

The system shall allow users to input, edit, and store financial data.

Real-time balance updates

ID: REQ040

The system shall provide real-time balance updates following income and expense transactions.

Transaction Categorization

ID: REQ041

The system shall allow users to categorize their financial transactions.

Relationships

Relationship	From	To
—unnamed	 User	 Add Expense

Add Income

ID: UC22

Primary Actors



User

Details

Level	N/A
Complexity	N/A
Use Case Status	N/A
Implementation Status	N/A
Preconditions	<p>The user has appropriate permissions to add income details within the system.</p> <p>The income management interface is accessible and functional, providing users with the necessary options and input fields to add income details.</p> <p>The user has logged into the system and authenticated their identity.</p>

Post-conditions	<p>Upon successful addition of income details, the system updates the user's income records in the database accordingly.</p> <p>The newly added income details are reflected in the income management interface, ensuring that users have up-to-date information.</p> <p>The system provides confirmation to the user that the income has been successfully added, ensuring transparency and accuracy in income management.</p>
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Author	N/A
Assumptions	N/A

Scenarios

Add Income - Sunny Day Scenario

1. This scenario begins when the user selects "Add Income" option from the UI
2. The user is then directed to a form where they can enter the income
3. The user can set spent limits based on income
4. The user can choose to be notified when their spending breaches the set budget limit
5. The user can save the income addition by clicking on the save button
6. The new income record gets saved in the database
7. The user is notified of the successful save operation

Add Income - Rainy Day Scenario

1. This scenario begins when the user selects "Add Income" option from the UI
2. The user is then directed to a form where they can enter the income
3. The user can set spent limits based on income
4. The user can choose to be notified when their spending breaches the set budget limit
5. The user can save the income addition by clicking on the save button
6. A server side exception prevents the save operation from executing
7. The user is notified of the failure through appropriate error messages

Requirements

Data Validation

ID: REQ043

The system shall validate all financial inputs against pre-defined business rules to maintain data integrity.

Financial Data Management

ID: REQ039

The system shall allow users to input, edit, and store financial data.

Real-time balance updates

ID: REQ040

The system shall provide real-time balance updates following income and expense transactions.

Relationships

Relationship	From	To
—unnamed	 User	 Add Income

Edit Expense

ID: UC20

Primary Actors



User

Details

Level	N/A
Complexity	N/A
Use Case Status	N/A
Implementation Status	N/A
Preconditions	<p>The user has appropriate permissions to access and edit expense entries within the system.</p> <p>The expense management interface is accessible and functional, displaying existing expense entries for the user to select and edit.</p>
Post-conditions	<p>Upon successful modification of the expense entry, the system updates the corresponding record in the database with the edited details.</p> <p>The modified expense entry is reflected in the expense management interface.</p> <p>The system provides confirmation to the user that the expense entry has been successfully edited, ensuring transparency and accuracy in the expense management process.</p>
Author	N/A
Assumptions	N/A

Scenarios

Edit Expense - Sunny Day Scenario

1. This scenario begins when the user selects "Edit Expense" option from the UI
2. The user is then required to select an expense which they wish to modify from a list of existing expenses
3. The selected expense is opened up in edit mode
4. The user can then modify the details and select on the save button
5. The expense modifications get saved in the database
6. The user is notified of the successful update operation

Edit Expense - Rainy Day Scenario

1. This scenario begins when the user selects "Edit Expense" option from the UI
2. The user is then required to select an expense which they wish to modify from a list of existing expenses
3. The selected expense is opened up in edit mode
4. The user can then modify the details and select on the save button
5. The expense modifications get saved in the database
6. A server side exception prevents the update operation from executing.
7. The original expense record remains unchanged
8. The user is notified of the update failure through appropriate error messages

Requirements

Data Validation

ID: REQ043

The system shall validate all financial inputs against pre-defined business rules to maintain data integrity.

Financial Data Management

ID: REQ039

The system shall allow users to input, edit, and store financial data.

Relationships

Relationship	From	To
— unnamed	 User	 Edit Expense

Manage Expense Categories

ID: UC26

Primary Actors



User

Supporting Actors



System Admin

Details

Level	N/A
Complexity	N/A
Use Case Status	N/A
Implementation Status	N/A
Preconditions	<p>The user has appropriate permissions to manage expense categories within the system.</p> <p>The expense categories management interface is accessible and functional, providing users with options to add, edit, or delete expense categories.</p> <p>The user has logged into the system and authenticated their identity.</p>
Post-conditions	<p>Upon successful addition, modification, or deletion of expense categories, the system updates the list of expense categories in the database accordingly.</p> <p>The changes made to the expense categories are reflected in the expense categories management interface, ensuring that users have up-to-date information.</p> <p>The system provides confirmation to the user that the expense category management operation (addition, modification, or deletion) has been completed successfully, ensuring transparency and accuracy in expense category management.</p>
Author	N/A
Assumptions	N/A

Scenarios

Scenario

1. View Expense Categories Scenario: The user accesses the expense categories management interface, where the system displays a list of existing expense categories, allowing them to view their names and details.
2. Add Expense Category Scenario: User adds new expense category, enters name and details, submits form, validates input, adds category to list, confirms successful addition, provides user feedback.
3. Edit Expense Category Scenario: User edits expense category, modifies details, submits changes, system validates, updates list, confirms, and provides feedback, ensuring successful modification and user satisfaction.
4. Delete Expense Category Scenario: User selects expense category to delete, system confirms, removes from list, confirms successful deletion, provides user feedback.

Requirements

Category Management

ID: REQ042

The system shall allow the creation, editing, and deletion of financial categories.

Transaction Categorization

ID: REQ041

The system shall allow users to categorize their financial transactions.

Relationships

Relationship	From	To
— unnamed	 Manage Expense Categories	 System Admin
— unnamed	 User	 Manage Expense Categories

Receive Notifications

ID: UC25

Primary Actors



Details

Level	N/A
Complexity	N/A
Use Case Status	N/A
Implementation Status	N/A
Preconditions	<p>The user has an active account and is logged into the system.</p> <p>The system is configured to generate and deliver notifications based on relevant events or actions.</p> <p>The user has set up their notification preferences or defaults to specify how they wish to receive notifications.</p>
Post-conditions	<p>Upon triggering a notification event, the system generates a notification message containing relevant information.</p> <p>The notification is delivered to the user through the preferred communication channel specified in their notification preferences.</p> <p>The user receives the notification and can take appropriate action based on the content of the notification.</p> <p>The system updates the notification status in the database to reflect the user's acknowledgment or response to the notification.</p>
Author	N/A
Assumptions	N/A

Scenarios

Receive Notifications - Sunny Day Scenario

1. This scenario begins when the user selects "Notification Preferences" option from the UI
2. The user is then directed to the notification preferences page
3. The user can opt to be notified whenever their spending breaches the set budget limit

4. The user can also choose to be notified of custom events like daily expense addition reminder, etc
5. The user can then save the notification preferences by clicking on the save button
6. The notification preferences get saved in the database
7. The user is notified of the successful save operation
- 8.
9. Basic Notification Service: The system detects an event or action, triggers a notification, generates a message, delivers it to the user via preferred communication channel, and alerts them to the event or action.
10. Notification Preferences Scenario: The user customizes their notification preferences, such as frequency and delivery method, saves the changes, and the system updates them in the database, confirming the update and providing feedback.
11. Acknowledge Notification Scenario: The system acknowledges a user's notification by taking appropriate action, registers it, and updates its status in the database. If necessary, the system may trigger additional actions.

Receive Notifications - Rainy Day Scenario

1. This scenario begins when the user selects "Notification Preferences" option from the UI
2. The user is then directed to the notification preferences page
3. The user can opt to be notified whenever their spending breaches the set budget limit
4. The user can also choose to be notified of custom events like daily expense addition reminder, etc
5. The user can then save the notification preferences by clicking on the save button
6. A server side exception prevents the save operation from executing
7. The notification preferences do not get saved in the database
8. The user is notified of the failure through appropriate error messages

Requirements

Customizable Alerts

ID: REQ045

The system shall provide customizable alerts to notify users of different financial activities and milestones.

Relationships

Relationship	From	To
— unnamed	 User	 Receive Notifications

Remove Category

ID: UC32

Details

Level	N/A
Complexity	N/A
Use Case Status	N/A
Implementation Status	N/A
Preconditions	<p>The user has appropriate permissions to remove expense categories within the system.</p> <p>The expense category management interface is accessible and functional.</p> <p>The user has logged into the system and authenticated their identity.</p>

	There exists at least one expense category that the user can remove.
Post-conditions	<p>Upon successful removal of the expense category, the system updates its database to reflect the removal of the category.</p> <p>The removed expense category is no longer displayed in the list of categories within the expense category management interface.</p> <p>The system provides confirmation to the user that the removal of the category was successful.</p>
Author	N/A
Assumptions	N/A

Scenarios

Remove Category - Sunny Day Scenario

1. This scenario begins when the user selects "Remove Category" option from the UI
2. The user is then required to select a category which they wish to remove from a list of existing expense categories
3. The selected category is opened up in edit mode
4. The user can then click on the delete button
5. The expense category record gets deleted from the database
6. The user is notified of the successful delete operation
- 7.
8. Base Case Scenario: The user navigates to the expense category management interface, chooses an expense category, confirms its deletion, the system validates the request, updates the list, and confirms the successful removal.
9. Error Handling Scenario: The user encounters an error message when attempting to remove a category that is not available or unavailable, allowing them to select a different category or exit the process.
10. Confirmation Scenario: The system sends a confirmation message to the user after successfully removing the selected category, which may include additional instructions or options.
- 11.

Remove Category - Rainy Day Scenario

1. This scenario begins when the user selects "Remove Category" option from the UI
2. The user is then required to select a category which they wish to remove from a list of existing expense categories
3. The selected category is opened up in edit mode
4. The user can then click on the delete button
5. A server side exception prevents the delete operation from executing
6. The expense category record does not get deleted from the database and remains unchanged
7. The user is notified of the failure through appropriate error messages

Relationships

Relationship	From	To
↳ Unnamed	 Manage Expense Categories	 Remove Category

[Remove Expense](#)

ID: UC39

Primary Actors

User

Details

Level	N/A
Complexity	N/A
Use Case Status	N/A
Implementation Status	N/A
Preconditions	The user has appropriate permissions to delete expense entries within the system. The expense management interface is accessible and functional, displaying existing expense entries for the user to select and remove.
Post-conditions	Upon successful removal of the expense entry, the system removes the corresponding record from the database. The deleted expense entry is no longer visible in the expense management interface, ensuring that it is effectively removed from the system. The system provides confirmation to the user that the expense entry has been successfully deleted, ensuring transparency and accuracy in the expense management process.
Author	N/A
Assumptions	N/A

Scenarios

Remove Expense - Sunny Day Scenario

1. This scenario begins when the user selects "Remove Expense" option from the UI
2. The user is then required to select an expense which they wish to remove from a list of existing expenses
3. The selected expense is opened up in edit mode
4. The user can then click on the delete button
5. The expense record gets deleted from the database
6. The user is notified of the successful delete operation

Remove Expense - Rainy Day Scenario

1. This scenario begins when the user selects "Remove Expense" option from the UI
2. The user is then required to select an expense which they wish to remove from a list of existing expenses
3. The selected expense is opened up in edit mode
4. The user can then click on the delete button
5. A server side exception prevents the delete operation from executing
6. The expense record does not get deleted from the database
7. The user is notified of the delete operation failure through appropriate error messages

Requirements

Financial Data Management

ID: REQ039

The system shall allow users to input, edit, and store financial data.

Real-time balance updates

ID: REQ040

The system shall provide real-time balance updates following income and expense transactions.

Role-based Access Control

ID: REQ038

The system shall ensure that users can only access features based on their roles.

Relationships

Relationship	From	To
— unnamed	 User	 Remove Expense

Set Budget

ID: UC24

Primary Actors



User

Details

Level	N/A
Complexity	N/A
Use Case Status	N/A
Implementation Status	N/A
Preconditions	<p>The user has appropriate permissions to set, edit, or delete budgets within the system.</p> <p>The budget management interface is accessible and functional, providing users with the necessary options and input fields to define budget details.</p>
Post-conditions	<p>Upon successful setting, editing, or deletion of the budget, the system updates the budget records in the database accordingly.</p> <p>The changes made to the budget (setting, editing, or deletion) are reflected in the budget management interface, ensuring that users have up-to-date information.</p> <p>The system provides confirmation to the user that the budget operation (setting, editing, or deletion) has been completed successfully, ensuring transparency and accuracy in budget management.</p>
Author	N/A
Assumptions	N/A

Scenarios

Set Budget - Sunny Day Scenario

1. This scenario begins when the user selects "Set Budget" option from the UI
2. The user is then directed to a budget creation form
3. The user can enter relevant information in the form fields
4. The user can opt to be notified whenever their spending breaches the set budget limit
5. The user can then save the budget by clicking on the save button
6. The budget modifications get saved in the database
7. The user is notified of the successful save operation

Set Budget - Rainy Day Scenario

1. This scenario begins when the user selects "Set Budget" option from the UI
2. The user is then directed to a budget creation form
3. The user can enter relevant information in the form fields
4. The user can opt to be notified whenever their spending breaches the set budget limit
5. The user can then save the budget by clicking on the save button
6. A server side exception prevents the save operation from executing
7. The budget modifications do not get saved in the database
8. The user is notified of the failure through appropriate error messages

Requirements

Customizable Alerts

ID: REQ045

The system shall provide customizable alerts to notify users of different financial activities and milestones.

Financial Goal Tracking

ID: REQ046

The system shall allow users to set financial goals and track their progress towards achieving them.

Relationships

Relationship	From	To
—unnamed	 User	 Set Budget

Set Financial Goals

ID: UC30

Details

Level	N/A
Complexity	N/A
Use Case Status	N/A
Implementation Status	N/A
Preconditions	<p>The user has appropriate permissions to set, edit, or delete financial goals within the system.</p> <p>The financial goals management interface is accessible and functional, providing users with the necessary options and input fields to define goal details.</p> <p>The user has logged into the system and authenticated their identity.</p>
Post-conditions	<p>Upon successful setting, editing, or deletion of financial goals, the system updates the user's list of financial goals in the database accordingly.</p> <p>The changes made to the financial goals (setting, editing, or deletion) are reflected in the financial goals management interface, ensuring that users have up-to-date information.</p> <p>The system provides confirmation to the user that the financial goals operation (setting, editing, or deletion) has been completed successfully, ensuring transparency and accuracy in financial goal management.</p>
Author	N/A
Assumptions	N/A

Scenarios

Set Financial Goals - Sunny Day Scenario

1. This scenario begins when the user selects "Set goalFinancial Goals" option from the UI
2. The user is then directed to a goal creation form
3. The user can enter relevant information in the form fields like description, target amount, priority etc
4. The user can opt to be notified whenever their spending breaches the set goals and daily motivation and reminders to stick to the plan
5. The user can then save the goal by clicking on the save button
6. The goal gets saved in the database
7. The user is notified of the successful save operation

Set Financial Goals - Rainy Day Scenario

1. This scenario begins when the user selects "Set goalFinancial Goals" option from the UI
2. The user is then directed to a goal creation form
3. The user can enter relevant information in the form fields like description, target amount, priority etc
4. The user can opt to be notified whenever their spending breaches the set goals and daily motivation and reminders to stick to the plan
5. The user can then save the goal by clicking on the save button
6. A server side exception prevents the save operation from executing
7. The goal does not get saved in the database
8. The user is notified of the failure through appropriate error messages

Requirements

Financial Goal Tracking

ID: REQ046

The system shall allow users to set financial goals and track their progress towards achieving them.

Relationships

Relationship	From	To
 unnamed	 Set Budget	 Set Financial Goals

System Management

ID: UC29

Primary Actors

 [System Admin](#)

Details

Level	N/A
Complexity	N/A
Use Case Status	N/A

Implementation Status	N/A
Preconditions	<p>The user has appropriate permissions or administrative privileges to access and manage system settings and resources.</p> <p>The system management interface is accessible and functional.</p> <p>The user has logged into the system and authenticated their identity as an administrator or privileged user.</p>
Post-conditions	<p>Upon successful completion of system management actions, the system updates its configurations and settings as necessary to reflect the changes made.</p> <p>Any modifications or updates to system parameters or configurations are applied consistently across the system.</p> <p>The system provides confirmation to the administrator or privileged user that the system management operation was successful, along with any relevant notifications or alerts.</p>
Author	N/A
Assumptions	N/A

Scenarios

System Management - Sunny Day Scenario

1. This scenario begins when the system admin selects "System Management". This is not a feature on the client side and can be operated from the backend by the system admin
2. The system admin can modify/override the system whenever the need arises
3. The system admin can modify/override the users expense details whenever the need arises
4. The system admin can modify/override the system settings whenever the need arises
5. The system notifies the admin regarding the success of each operation performed

System Management Rainy Day Scenario

1. This scenario begins when the system admin selects "System Management". This is not a feature on the client side and can be operated from the backend by the system admin
2. The system admin can modify/override the system whenever the need arises
3. The system admin can modify/override the users expense details whenever the need arises
4. The system admin can modify/override the system settings whenever the need arises
5. The system notifies the admin regarding the failure of each operation performed

Requirements

System Maintenance Tools

ID: REQ048

The system shall provide tools for system configuration and maintenance to be used by administrators.

User Account Management

ID: REQ047

The system shall allow administrators to manage user accounts, including creation, modification, and deletion.

Relationships

Relationship	From	To
—unnamed	 System Admin	 System Management

Update Income

ID: UC27

Primary Actors



Details

Level	N/A
Complexity	N/A
Use Case Status	N/A
Implementation Status	N/A
Preconditions	<p>The user has appropriate permissions to update their income details within the system.</p> <p>The income management interface is accessible and functional, providing users with the necessary options and input fields to modify income details.</p> <p>The user has logged into the system and authenticated their identity.</p>
Post-conditions	<p>Upon successful updating, adding, or removing income details, the system updates the user's income records in the database accordingly.</p> <p>The changes made to the income details are reflected in the income management interface, ensuring that users have up-to-date information.</p> <p>The system provides confirmation to the user that the income operation (updating, adding, or removing) has been completed successfully, ensuring transparency and accuracy in income management.</p>
Author	N/A
Assumptions	N/A

Scenarios

Update Income - Sunny Day Scenario

1. This scenario begins when the user selects "Update Income" option from the UI
2. The user is then required to select an income record which they wish to modify from a list of existing income records
3. The selected income record is opened up in edit mode
4. The user can then modify the details and select on the save button
5. The income modifications get saved in the database
6. The user is notified of the successful update operation
- 7.
8. Base Case Scenario: The user accesses the income management interface, updates their income details, and the system retrieves and displays the updated information. The system validates the changes, confirms the update, and provides feedback.
9. Error Handling Scenario: The system alerts users of errors preventing income source updates, providing instructions and guidance to resolve the issue, ensuring successful income management operations.

Update Income - Rainy Day Scenario

1. This scenario begins when the user selects "Update Income" option from the UI
2. The user is then required to select an income record which they wish to modify from a list of existing income records
3. The selected income record is opened up in edit mode
4. The user can then modify the details and select on the save button
5. A server side exception prevents the update operation from executing

6. The income record does not get saved in the database and remains unchanged
7. The user is notified of the failure through appropriate error messages

Requirements

Data Validation

ID: REQ043

The system shall validate all financial inputs against pre-defined business rules to maintain data integrity.

Financial Data Management

ID: REQ039

The system shall allow users to input, edit, and store financial data.

Real-time balance updates

ID: REQ040

The system shall provide real-time balance updates following income and expense transactions.

Relationships

Relationship	From	To
— unnamed	 User	 Update Income

User Account Management

ID: UC28

Primary Actors

 [System Admin](#)

Details

Level	N/A
Complexity	N/A
Use Case Status	N/A
Implementation Status	N/A
Preconditions	<p>The user has appropriate permissions to manage user accounts within the system.</p> <p>The account management interface is accessible and functional.</p> <p>The user has logged into the system and authenticated their identity.</p>
Post-conditions	<p>Upon successful completion of account management actions (e.g., creation, update, deletion), the system updates its database to reflect the changes made to the user accounts.</p> <p>Any updates or modifications made to user account information are accurately reflected in the system's records.</p> <p>The system provides confirmation to the user that the account management operation was successful, along with any relevant instructions or notifications.</p>
Author	N/A
Assumptions	N/A

Scenarios

User Account Management - Sunny Day Scenario

1. This scenario begins when the system admin selects "Manage User Account". This is not a feature on the client side and can be operated from the backend by the system admin
2. The system admin can modify/override the users account details whenever the need arises
3. The system admin can modify/override the users expense details whenever the need arises
4. The system notifies the admin regarding the success of each operation performed

User Account Management - Rainy Day Scenario

1. This scenario begins when the system admin selects "Manage User Account". This is not a feature on the client side and can be operated from the backend by the system admin
2. The system admin can modify/override the users account details whenever the need arises
3. The system admin can modify/override the users expense details whenever the need arises
4. The system notifies the admin regarding the failure of each operation performed

Requirements

Role-based Access Control

ID: REQ038

The system shall ensure that users can only access features based on their roles.

User Account Management

ID: REQ047

The system shall allow administrators to manage user accounts, including creation, modification, and deletion.

User Authentication

ID: REQ037

The system shall provide secure user authentication.

Relationships

Relationship	From	To
—unnamed	 System Admin	 User Account Management

View Expenses

ID: UC21

Supporting Actors

User

Details

Level	N/A
Complexity	N/A
Use Case Status	N/A
Implementation Status	N/A
Preconditions	<p>The user has appropriate permissions to view expense records within the system.</p> <p>The expense viewing interface is accessible and functional.</p> <p>The user has logged into the system and authenticated their identity.</p>

Post-conditions	Upon viewing expense records, the system displays the relevant expense data accurately and comprehensively. The expense records are presented in a user-friendly format, facilitating easy understanding and analysis by the user. The system provides options for filtering, sorting, or exporting expense data as needed to enhance user flexibility and usability.
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Author	N/A
Assumptions	N/A

Scenarios

View Expenses - Sunny Day Scenario

1. This scenario begins when the user selects "View Expenses" option from the UI
2. The user is then required to select a date range for which the expense list will be retrieved
3. Based on date range selected the user is presented with list of expenses
4. The user can generate different types of customized expense lists based on their needs by using the filter options
5. The filters allows users to filter and view expenses by category, amount, date etc

View Expenses - Rainy Day Scenario

1. This scenario begins when the user selects "View Expenses" option from the UI
2. The user is then required to select a date range for which the expense list will be retrieved
3. Based on date range selected the user is presented with list of expenses
4. The user can generate different types of customized expense lists based on their needs by using the filter options
5. The filters allows users to filter and view expenses by category, amount, date etc
6. When a server side exception prevents the rendering of the expenses list, the user is notified of the failure through appropriate error messages

Requirements

Financial Data Management

ID: REQ039

The system shall allow users to input, edit, and store financial data.

Relationships

Relationship	From	To
 unnamed	 View Reports	 View Expenses

[View Reports](#)

ID: UC23

Primary Actors

[User](#)

Details

Level	N/A
Complexity	N/A
Use Case Status	N/A

Implementation Status	N/A
Preconditions	The user has appropriate permissions to view financial reports within the system. The reporting interface is accessible and functional. The user has logged into the system and authenticated their identity.
Post-conditions	Upon viewing financial reports, the system presents the relevant financial data accurately and comprehensively. The reports are displayed in a user-friendly format, with clear visualizations and insights to facilitate understanding and analysis by the user. The system provides options for customizing report parameters, filtering data, and exporting reports as needed to meet user requirements.
Author	N/A
Assumptions	N/A

Scenarios

View Reports - Sunny Day Scenario

1. This scenario begins when the user selects "View Reports" option from the UI
2. The user is then required to select a date range for which the report will be generated
3. Based on date range selected the user is presented with reports that provide detailed analysis of their spending habits, budget goals etc
4. The user can generate different types of customized reports based on their needs

View Reports - Rainy Day Scenario

1. This scenario begins when the user selects "View Reports" option from the UI
2. The user is then required to select a date range for which the report will be generated
3. Based on date range selected the user is presented with reports that provide detailed analysis of their spending habits, budget goals etc
4. The user can generate different types of customized reports based on their needs
5. When a server side exception prevents the generation or rendering of the report, the user is notified of the failure through appropriate error messages

Requirements

Financial Data Management

ID: REQ039

The system shall allow users to input, edit, and store financial data.

Financial Reporting

ID: REQ044

The system shall allow users to view financial reports generated based on their transaction history.

Relationships

Relationship	From	To
— unnamed	 User	 View Reports

System Admin

ID: AC04

Responsible for managing user accounts, categories and overseeing the system's operation

Properties

Abstract	false
Leaf	false
Root	false

Relationships

Relationship	From	To
— unnamed	 System Admin	 User Account Management
— unnamed	 System Admin	 System Management
— unnamed	 Manage Expense Categories	 System Admin



ID: AC06

The primary actor in the system who interacts with the system to track expenses, incomes and generate reports

Properties

Abstract	false
Leaf	false
Root	false

Relationships

Relationship	From	To
— unnamed	 User	 Add Expense
— unnamed	 User	 Remove Expense
— unnamed	 User	 Edit Expense
— unnamed	 User	 Add Income
— unnamed	 User	 View Reports
— unnamed	 User	 Set Budget
— unnamed	 User	 Receive Notifications
— unnamed	 User	 Manage Expense Categories
— unnamed	 User	 Update Income

2.3.2. Use Cases of Portfolio Analysis



ID: UC01

Primary Actors



Details

Level	N/A
Complexity	N/A
Use Case Status	N/A
Implementation Status	N/A
Preconditions	The investor must be logged into the portfolio management system using valid credentials and should have a financial portfolio information saved on the system.
Post-conditions	Sunny Day: The investment has been successfully added into the portfolio record of the investor on system using the Add Investment use case. Rainy Day: The investment record could not be added on the system.
Author	N/A
Assumptions	N/A

Scenarios

Add Investment - Sunny Day Scenario

1. This scenario begins when the display shows "Add Investment" options, and the investor decides on a particular investment type of their choice
2. The investor clicks on the "Add Investment" button
3. The investor opens a drop-down menu, that displays the list of supported investment types
4. The investor selects an investment type
5. The investor fills in other relevant details required on the form
6. The investor clicks on the save button
7. New investment type gets added to portfolio

Add Investment - Rainy Day Scenario

1. This scenario begins when the display shows "Add Investment" options, and the investor decides on a particular investment type of their choice
2. The investor clicks on the "Add Investment" button
3. The investor opens a drop-down menu, that displays the list of supported investment types
4. The investor selects an investment type
5. The investor fills in other relevant details required on the form
6. The investor clicks on the save button
7. A server side exception prevents the saving of new investment record in the database
8. The user is notified of the create failure through appropriate error messages

Requirements

Add New Investments

ID: REQ005

The system shall enable investors to add new investments to their portfolio.

Asset Allocation Feature

ID: REQ013

The system shall include an asset allocation feature that suggests how to distribute investments across different asset classes.

Relationships

Relationship	From	To
— unnamed	 Investor	 Add Investment

Adjust Portfolio

ID: UC13

Primary Actors

 Investor

Details

Level	N/A
Complexity	N/A
Use Case Status	N/A
Implementation Status	N/A
Preconditions	The Investor must be logged into the portfolio management system and their financial portfolio must be updated and stored in the system database.
Post-conditions	Sunny Day: The Investor is able to successfully make the adjustments in his portfolio and they are reflected in the system using the  Adjust Portfolio use case. Rainy Day: The Investor encounters error and is not able to make adjustment in their portfolio. Once the system is restored the Investor can make the changes.
Author	N/A
Assumptions	N/A

Scenarios

Adjust Portfolio Sunny Day

1. This scenario begins with the Investor navigating to the Portfolio Section on the dashboard and selects the Adjust option.
2. The system displays the Investor's current investment portfolio, including details such as asset allocation, individual holdings, and current market values.
3. The Investor selects the option to adjust their portfolio, typically presented as "Add" or "Remove" investments.
4. If the Investor chooses to add investments, they specify the type of investment they want to add (e.g., stocks, bonds, mutual funds) and the details regarding it.
5. If the Investor chooses to remove investments, they select the investments they want to sell or liquidate from their current portfolio.
6. The system presents a summary of the proposed changes to the user's portfolio, including any additions or removals.
7. The Investor reviews the proposed changes and confirms their decision to proceed with the adjustments.
8. The system updates the Investor's portfolio to reflect the changes made, adjusting asset allocation and holdings accordingly.
9. The Investor reviews their updated portfolio to ensure that the adjustments have been accurately reflected.

Adjust Portfolio Rainy Day 1

1. This scenario begins with the Investor navigating to the Adjust Portfolio section and adjusting his portfolio.
2. The Investor tries to add a investment in his portfolio but encounters a error message due to insufficient balance/assets/downtime of the system.
3. The Investor acknowledges the inconvenience caused by the technical difficulties and understands that system maintenance or troubleshooting is necessary to restore functionality.
4. The system may suggest alternative options for adjusting the portfolio during the technical outage, such as making notes of desired changes offline or using external tools temporarily.
5. If necessary, the user may choose to reach out to customer support for further assistance or clarification on the status of the technical issue and potential solutions.
6. Once the technical issue is resolved and the portfolio management feature becomes available again, the Investor can log back into the system and proceed with adjusting their portfolio as intended.

Adjust Portfolio Rainy Day 2

1. This scenario begins with the Investor navigating to the Adjust Portfolio section and adjusting his portfolio.
2. The Investor tries to delete a investment in his portfolio but encounters a error message due to downtime of the system.
3. The Investor acknowledges the inconvenience caused by the technical difficulties and understands that system maintenance or troubleshooting is necessary to restore functionality.
4. The system may suggest alternative options for adjusting the portfolio during the technical outage, such as making notes of desired changes offline or using external tools temporarily.
5. If necessary, the user may choose to reach out to customer support for further assistance or clarification on the status of the technical issue and potential solutions.
6. Once the technical issue is resolved and the portfolio management feature becomes available again, the Investor can log back into the system and proceed with adjusting their portfolio as intended.

Requirements

Portfolio Adjustment

ID: REQ016

The system shall allow investors to adjust their portfolio based on performance metrics, risk assessment, and financial goals.

Relationships

Relationship	From	To
—unnamed	 Investor	 Adjust Portfolio

Analyse Portfolio

ID: UC11

Primary Actors

 Financial Advisor

Details

Level	N/A
Complexity	N/A
Use Case Status	N/A

Implementation Status	N/A
Preconditions	The Financial advisor logs into the system using valid credentials and has access to the Investor's financial portfolio system.
Post-conditions	Sunny Day: The financial advisor studies the Investors financial portfolio and gives recommendations to the Investor using the  Analyse Portfolio use case. Rainy Day: Due to some unavoidable error the financial advisor fails to provide recommendations to the Investor. The advisor tries to connect with the client through email or system.
Author	N/A
Assumptions	N/A

Scenarios

Analyse Portfolio Sunny Day

1. This scenario begins with the financial advisor selecting the client for whom they want to analyze the financial portfolio.
2. The system retrieves and displays the client's financial portfolio data, including asset allocation, holdings, performance metrics, and historical transactions.
3. The financial advisor reviews the client's profile information, including investment goals, risk tolerance, time horizon, and any other relevant factors.
4. Based on the portfolio analysis, the financial advisor formulates recommendations to optimize the client's portfolio, which may include adjustments to asset allocation, diversification strategies, investment selections, or risk management techniques.
5. The financial advisor presents the analysis findings and recommendations to the client in a clear and understandable manner.
6. The financial advisor engages in a discussion with the client to review the analysis findings, address any questions or concerns, and collaborate on implementing the recommended portfolio adjustments.
7. The financial advisor continues to monitor the client's portfolio performance, tracking the impact of the implemented changes over time, and conducting periodic reviews to ensure that the portfolio remains aligned with the client's goals and objectives.

Analyse Portfolio Rainy Day

1. This scenario begins with the financial advisor selecting the client whose financial portfolio is to be analyzed.
2. Due to insufficient financial data/system downtime the financial advisor is unable to document the analysis of the Investors/Clients portfolio.
3. The financial advisor sends a formal communication to the Investor through the system to indicate the cause of error.

Requirements

Portfolio Risk Assessments

ID: REQ019

The system shall perform risk assessments on the investor's portfolio and suggest adjustments.

Track Investment Performance

ID: REQ014

The system shall provide a feature to track the performance of individual investments and the overall portfolio.

Relationships

Relationship	From	To
— unnamed	 Financial Advisor	 Analyse Portfolio

Asset Allocation

ID: UC16

Details

Level	N/A
Complexity	N/A
Use Case Status	N/A
Implementation Status	N/A
Preconditions	The investor must be logged into the portfolio management system with valid credentials and should have his financial portfolio information updated on the system.
Post-conditions	Sunny Day: The investor can successfully add the asset in the portfolio and this information is updated using the  Asset Allocation use case. Rainy Day: The investor is not able to add the asset in the portfolio system.
Author	N/A
Assumptions	N/A

Scenarios

Asset Allocation - Sunny Day Scenario

1. This scenario begins when the display shows "Asset Allocation" option, and the investor decides on allocation assets for their investments
2. The investor clicks on the "Asset Allocation" button
3. The investor is then presented with a list of all possible asset categories such as stocks, bonds, real estate
4. The investor can select a particular asset category and add more details
5. The investor is presented with a form requiring multiple details like setting of investment goals, risk tolerance, fund distribution etc
6. The investor can then save their changes
7. The updated asset allocation gets saved in the database
8. The user is notified of the successful asset allocation through appropriate error messages

Requirements

Asset Allocation Feature

ID: REQ013

The system shall include an asset allocation feature that suggests how to distribute investments across different asset classes.

Relationships

Relationship	From	To
 unnamed	 Add Investment	 Asset Allocation

Edit Investment

ID: UC02

Primary Actors



Details

Level	N/A
Complexity	N/A
Use Case Status	N/A
Implementation Status	N/A
Preconditions	The investor must be logged into the portfolio management system using valid credentials and should have existing investments to edit.
Post-conditions	Sunny Day: The investor is able to edit the existing investments in his portfolio and the changes are also reflected in the system using the  Edit Investment use case. Rainy Day: The investor is not able to make any changes in the investment portfolio.
Author	N/A
Assumptions	N/A

Scenarios

Edit Investment - Sunny Day Scenario

1. This scenario begins when the display shows "Edit Investment" options, and the investor decides on a particular investment type to modify
2. The investor clicks on the "Edit Investment" button
3. The investor opens a drop-down menu, that displays the list of existing investments
4. The investor selects a particular investment to modify
5. The investor modifies the details of their investment on the edit form
6. The investor clicks on the save button
7. Investment gets updated and saved

Edit Investment - Rainy Day Scenario

1. This scenario begins when the display shows "Edit Investment" options, and the investor decides on a particular investment type to modify
2. The investor clicks on the "Edit Investment" button
3. The investor opens a drop-down menu, that displays the list of existing investments
4. The investor selects a particular investment to modify
5. The investor modifies the details of their investment on the edit form
6. The investor clicks on the save button
7. A server side exception prevents the modification of investment records in the database
8. The original investment record remains unchanged, despite update failures
9. The user is notified of the update failure through appropriate error messages

Requirements

Edit Existing Investments

ID: REQ006

The system shall enable investors to edit details of existing investments.

Relationships

Relationship	From	To
— unnamed	 Investor	 Edit Investment

Financial Advice

ID: UC06

Primary Actors

 Financial Advisor

Details

Level	N/A
Complexity	N/A
Use Case Status	N/A
Implementation Status	N/A
Preconditions	The financial advisor logs into the system using his credentials and has access to the clients/Investors portfolio.
Post-conditions	Sunny Day: The financial advisor successfully analyzes the Investors portfolio and provides financial advice to the Investor to improve their portfolio using the  Financial Advice use case. Rainy Day: Due to lack of data/system downtime the financial advisor is not able to draft the financial guidelines for the client.
Author	N/A
Assumptions	N/A

Scenarios

Financial Advice Sunny Day

1. This scenario begins with the Financial Advisor logging into the system and selecting a client whose financial portfolio is to be analyzed.
2. The system retrieves and displays the client's financial portfolio data, including asset allocation, holdings, performance metrics, and historical transactions.
3. The financial advisor reviews the client's profile information, including investment goals, risk tolerance, time horizon, and any other relevant factors.
4. Based on the portfolio analysis, the financial advisor identifies opportunities to improve the client's portfolio, such as optimizing asset allocation, re-balancing holdings, or selecting more suitable investment options.
5. Based on the client's financial goals and risk tolerance, the financial advisor provides specific investment recommendations tailored to their needs, preferences, and circumstances.
6. The financial advisor presents the financial advice to the client in a clear and understandable manner, explaining the rationale behind each recommendation and how it aligns with the client's objectives.
7. The financial advisor continues to monitor the client's portfolio performance.

Financial Advice Rainy Day

1. This scenario begins with the financial advisor selecting the client whose financial portfolio is to be analyzed.
2. Due to insufficient financial data/system downtime the financial advisor is unable to document the finance recommendations of the Investors/Clients portfolio.
3. The financial advisor sends a formal communication to the Investor through the system to indicate the cause of error and they try to connect through other mediums.

Requirements

Financial Advice and Recommendations

ID: REQ017

The system shall provide financial advice and recommendations based on the investor's profile and market conditions.

Relationships

Relationship	From	To
—unnamed		

Financial Advisor

ID: AC03

Offers investment advice and recommendations to investors. May also have the ability to manage portfolios on behalf of customers.

Properties

Abstract	false
Leaf	false
Root	false

Relationships

Relationship	From	To
—unnamed	 Financial Advisor	 Track Performance
—unnamed	 Financial Advisor	 Tax Optimization
—unnamed	 Financial Advisor	 Analyse Portfolio

Generate Reports

ID: UC08

Primary Actors

[Investor](#)

Details

Level	N/A
Complexity	N/A
Use Case Status	N/A

Implementation Status	N/A
Preconditions	The Investor must be logged in into the personal portfolio management system by validating the Investor's credentials, and their financial portfolio should be updated.
Post-conditions	Sunny Day: The Investor is successfully able to view their financial report and can download their report locally using  Generate Reports use case. Rainy Day: The Investor is unable to view the financial report due to system failure/maintenance.
Author	N/A
Assumptions	N/A

Scenarios

[Generate Reports Sunny day](#)

1. This scenario begins with the Investor navigating to the Reports section on the dashboard and select the Generate Reports option.
2. The Investor is prompted to choose the date range for the report, specifying the start and end dates for the financial data they want to include(can be monthly/yearly)
3. The Investor selects the accounts they want to include in the report. This could include stocks, bonds, mutual funds, etc.
4. Once all preferences are set, the Investor clicks on the "Generate Report" button.
5. The system generates the report based on the Investor's selections and preferences. The report displays a comprehensive overview of the Investors's financial performance during the specified period, including details of investments, gains/losses , asset allocation, and any other relevant metrics.
6. Optionally, the Investor can export the report in various formats (such as PDF or docs) or save it within the system for future reference.
7. After reviewing the report, the Investor can navigate back to the dashboard to continue managing their portfolio or performing other tasks within the system.

[Generate Reports Rainy day](#)

1. This scenario begins with the Investor navigating to the Reports section and attempting to Generate Reports of his portfolio.
2. The Investor receives the notification indicating that the system is undergoing maintenance and that certain features including report generation, may be temporarily unavailable.
3. The notification provides information about the expected duration of the maintenance period and advises the Investor to check back later for updates or to contact customer support for assistance.
4. Despite the maintenance notification, the Investor tries to access the "Generate Report" section to generate a financial report.
5. Instead of being able to access the report generation feature, the Investor receives an error message indicating that the functionality is currently disabled due to system maintenance.
6. The system suggests alternative options for accessing financial data during the maintenance period, such as viewing recent transactions, checking account balances.
7. The Investor decides to check back later once the maintenance period is over to generate the desired financial report.
8. If necessary, the Investor may choose to reach out to customer support for further information or assistance regarding the maintenance status or any other queries.

Requirements

[Generate Detailed Reports](#)

ID: REQ015

The system shall generate detailed reports on investment performance, including but not limited to, return on investment, risk analysis, and tax implications.

[View Financial Reports](#)

ID: REQ008

The system shall allow users to view financial reports based on their transaction history.

Relationships

Relationship	From	To
— unnamed	 Investor	 Generate Reports

[Investor](#)

ID: AC01

The primary user of the system, who manages and tracks their investment portfolio

Properties

Abstract	false
Leaf	false
Root	false

Relationships

Relationship	From	To
— unnamed	 Investor	 Set Investment Goals
— unnamed	 Investor	 Generate Reports
— unnamed	 Investor	 Track Performance
— unnamed	 Investor	 Adjust Portfolio
— unnamed	 Investor	 Add Investment
— unnamed	 Investor	 Portfolio Analysis
— unnamed	 Investor	 Receive Recommendations
— unnamed	 Investor	 View Portfolio
— unnamed	 Investor	 Edit Investment
— unnamed	 Investor	 Remove Investment

[Portfolio Analysis](#)

ID: UC18

Primary Actors

[Investor](#)

Details

Level	N/A
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Complexity	N/A
Use Case Status	N/A
Implementation Status	N/A
Preconditions	The Investor must have valid login credentials for accessing the personal portfolio management system.
Post-conditions	Sunny Day: The Investor has successfully viewed their financial portfolio, has received a short analysis of their portfolio performance, highlighting key metrics, trends, gains, and losses using the  Portfolio Analysis use case Rainy Day: The Investor is unable to view his/her portfolio on the system due to some technical issue or downtime of the system.
Author	N/A
Assumptions	N/A

Scenarios

Portfolio Analysis Sunny Day

1. This scenario begins with the Investor navigating to the Analysis section within the dashboard and selecting Portfolio Analysis option to get a overview of their portfolio.
2. The system generates a summary of the Investor's financial portfolio, displaying key metrics such as total portfolio value, asset allocation, and performance over the selected time period.
3. The Investor can view a breakdown of their investments, including individual stocks, bonds, mutual funds, and other assets held within the portfolio.
4. Alongside the portfolio overview, the system provides a brief analysis of the portfolio performance, highlighting notable trends, gains, losses, and any significant changes in asset allocation.
5. The analysis may include interactive charts and graphs to visually represent the portfolio's performance, allowing the user to easily identify strengths and areas for improvement.
6. After reviewing the portfolio analysis, the Investor can navigate back to the dashboard to continue managing their portfolio or performing other tasks within the system.

Portfolio Analysis Rainy Day

1. This scenario begins with the Investor encountering a error while accessing the Portfolio Analysis feature on the system.
2. The Investor can see a error message popping up on the UI indicating that there is an issue with accessing portfolio data and analysis functionality.
3. The error message provides details about the technical issue, such as server maintenance, database errors, or connectivity issues, causing the portfolio analysis feature to be temporarily unavailable.
4. The Investor acknowledges the inconvenience caused by the technical difficulties and understands that system maintenance or troubleshooting is necessary to restore functionality.
5. The system may suggest alternative options for accessing limited portfolio data during the technical outage, such as viewing basic account balances or recent transactions.
6. If necessary, the Investor may choose to reach out to customer support for further assistance or clarification on the status of the technical issue and potential solutions.
7. Once the technical issue is resolved and the portfolio analysis feature becomes available again, the Investor can log back into the system and proceed with viewing their financial portfolio and analysis as intended.

Relationships

Relationship	From	To
— unnamed	 Investor	 Portfolio Analysis

[Receive Recommendations](#)

ID: UC19

Primary Actors

 [Investor](#)

Details

Level	N/A
Complexity	N/A
Use Case Status	N/A
Implementation Status	N/A
Preconditions	The Investor must be logged into the portfolio management system and should have a basic portfolio ready like data required should be input by the Investor and stored in the system.
Post-conditions	Sunny Day: The Investor is able to view all the recommendations to improve their financial portfolio on the interface using the  Receive Recommendations use case Rainy Day: The Investor encounters a error message stating that the system is down and is unable to view the recommendations.
Author	N/A
Assumptions	N/A

Scenarios

[Receive Recommendations Sunny Day](#)

1. This scenario begins with the Investor navigating to the "Recommendations" section within the dashboard or clicks on a dedicated button to access personalized recommendations.
2. The system prompts the Investor to review their profile information, including investment goals, risk tolerance, time horizon, and any other relevant factors.
3. Based on the Investor's profile and current portfolio data, the system generates tailored recommendations aimed at improving the Investor's financial portfolio.
4. The system presents the recommendations to the Investor in a clear and understandable format, possibly accompanied by explanations or rationales for each recommendation.
5. The Investor carefully reviews the recommendations provided by the system, considering their relevance, feasibility, and potential impact on their investment objectives.
6. The Investor may have the option to interact with the recommendations, exploring different scenarios or adjusting parameters to understand how the recommendations align with their preferences and goals.
7. The Investor continues to monitor their financial portfolio over time, periodically reviewing recommendations and adjusting their investment strategy as needed to stay aligned with their goals and preferences.

[Receive Recommendation Rainy Day](#)

1. This scenario begins with the Investor navigating to the Receive Recommendations section and encountering a message indicating that there is an issue with accessing the recommendation feature due to technical difficulties.
2. The error message provides details about the technical issue, such as server downtime, database errors, or connectivity problems, preventing the generation of recommendations.
3. Despite the error notification, the Investor tries to access the "Recommendations" section to receive guidance on improving their financial portfolio.

4. The Investor continues to receive error messages indicating that the functionality is currently disabled due to technical issues.
5. The Investor acknowledges the inconvenience caused by the technical difficulties and understands that system maintenance or troubleshooting is necessary to restore functionality.
6. The system may suggest alternative options for receiving financial advice during the technical outage, such as contacting customer support for assistance, or seeking advice from a financial advisor.
7. The Investor decides to wait for the technical issue to be resolved and plans to return to the system once the recommendation feature is restored.
8. The Investor can log back into the system and proceed with receiving guidance on improving their financial portfolio once the technical issue is resolved and the system is up and running.

Requirements

Financial Advice and Recommendations

ID: REQ017

The system shall provide financial advice and recommendations based on the investor's profile and market conditions.

Relationships

Relationship	From	To
— unnamed	 Investor	 Receive Recommendations

Remove Investment

ID: UC04

Primary Actors

 [Investor](#)

Details

Level	N/A
Complexity	N/A
Use Case Status	N/A
Implementation Status	N/A
Preconditions	The investor should be logged into the portfolio management system with valid credentials and should have some existing investments on his portfolio to remove.
Post-conditions	Sunny Day: The investor is able to remove the particular investment record and changes are reflected on the system using  Remove Investment use case. Rainy Day: The investor will not be able to remove the investment record from the portfolio due to system error.
Author	N/A
Assumptions	N/A

Scenarios

Remove Investment - Sunny Day Scenario

1. This scenario begins when the display shows "Remove Investment" options, and the investor decides on a particular investment type to delete

2. The investor clicks on the "Remove Investment" button
3. The investor opens a drop-down menu, that displays the list of existing investments
4. The investor selects a particular investment to remove
5. The investor is shown a warning dialog, to reconfirm their decision
6. The investor clicks on the ok button to acknowledge the delete operation
7. The investment record is removed from the database
8. The investor is notified of the successful delete operation

Remove Investment - Rainy Day Scenario

1. This scenario begins when the display shows "Remove Investment" options, and the investor decides on a particular investment type to delete
2. The investor clicks on the "Remove Investment" button
3. The investor opens a drop-down menu, that displays the list of existing investments
4. The investor selects a particular investment to remove
5. The investor is shown a warning dialog, to reconfirm their decision
6. The investor clicks on the ok button to acknowledge the delete operation
7. A server side exception prevents the deletion of investment records in the database
8. The original investment record remains unchanged, despite delete operation failures
9. The user is notified of the delete failure through appropriate error messages

Requirements

Remove Investments

ID: REQ010

The system shall allow investors to remove investments from their portfolio.

Relationships

Relationship	From	To
— unnamed	 Investor	 Remove Investment

Risk Assessment

ID: UC17

Primary Actors

 Financial Advisor

Details

Level	N/A
Complexity	N/A
Use Case Status	N/A
Implementation Status	N/A
Preconditions	The financial advisor logs into the system using his credentials and has access to the clients/Investors portfolio.

Post-conditions	Sunny Day: The financial advisor successfully analyzes the Investors portfolio and provides risk assessment advice to the Investor to improve their portfolio using the  Risk Assessment use case. Rainy Day: Due to lack of data/system downtime the financial advisor is not able to draft the risk guidelines for the client.
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Author	N/A
Assumptions	N/A

Scenarios

Risk Assessment Sunny Day

1. This scenario begins with the financial advisor logging into the system and selecting the client for whom they want to analyze the financial portfolio.
2. The system retrieves and displays the client's financial portfolio data, including asset allocation, holdings, performance metrics, and historical transactions.
3. The financial advisor reviews the client's profile information, including investment goals, risk tolerance, time horizon, and any other relevant factors.
4. The financial advisor conducts a comprehensive assessment of the client's risk profile, considering factors such as their age, investment objectives, time horizon, income level, and risk tolerance.
5. Based on the risk assessment and portfolio analysis, the financial advisor suggests strategies to mitigate risks and improve the client's portfolio resilience, such as diversifying across asset classes, re-balancing allocations, or selecting lower-risk investments.
6. The financial advisor presents the analysis findings and recommendations to the client in a clear and understandable manner.
7. The financial advisor engages in a discussion with the client to review the risk assessments and recommendations, address any questions or concerns, and collaborate on implementing the suggested changes to the portfolio.

Risk Assessment Rainy Day

1. This scenario begins with the financial advisor selecting the client whose financial portfolio is to be analyzed.
2. Due to insufficient financial data/system downtime the financial advisor is unable to document the finance recommendations of the Investors/Clients portfolio.
3. The financial advisor sends a formal communication to the Investor through the system to indicate the cause of error and they try to connect through other mediums.

Requirements

[Portfolio Risk Assessments](#)

ID: REQ019

The system shall perform risk assessments on the investor's portfolio and suggest adjustments.

Relationships

Relationship	From	To
 Unnamed		

[Set Investment Goals](#)

ID: UC07

Primary Actors



Investor

Details

Level	N/A
Complexity	N/A
Use Case Status	N/A
Implementation Status	N/A
Preconditions	The Investor must be logged into the portfolio management system and the Investor's financial portfolio data must be up-to-date and available within the system.
Post-conditions	Sunny Day: The Investor has successfully set their investment goals for the year within the personal portfolio management system using the Set Investment Goals use case. Rainy Day: The Investor is notified of the system maintenance and can make notes of goals offline/ use any other tool temporarily until the system retrieves back.
Author	N/A
Assumptions	N/A

Scenarios

Set Investment Goals Sunny Day

1. This scenario begins with the Investor navigating to the Set Investment Goals section on the dashboard of the site specifically designed for setting and managing investment objectives.
2. The Investor selects the option to create a new investment goal for the year.
3. The system prompts the Investor to enter details for their new investment goal, including: title or description of the goal (e.g., "Retirement savings," "Emergency fund," "Education fund"), target amount to be achieved by the end of the year, timeframe for achieving the goal (e.g., one year) and the risk tolerance and investment preferences related to the goal.
4. After entering the necessary details, the Investor saves the new investment goal.
5. The system confirms the successful creation of the investment goal and provides a summary of the goal details for the Investor to review.
6. The Investor has the option to review or edit the investment goal details before finalizing.
7. Depending on the goal, the Investor may allocate existing investments or specify new contributions to be directed towards achieving the goal.
8. Once the investment goal is set, the system starts tracking the user's progress towards achieving it, providing updates on the dashboard or via notifications.
9. At the end of the year, if the Investor successfully achieves the investment goal, the system congratulates the Investor and may suggest setting new goals for the upcoming year.
10. The Investor continues to manage their investment portfolio, setting new goals, making adjustments, and monitoring progress within the personal portfolio management system.

Set Investment Goals Rainy Day

1. This scenario begins with the Investor navigating to the Set Investment Goal option and getting a error message indicating that there is an issue with accessing the investment goal-setting feature due to technical difficulties.
2. The error message provides details about the technical issue, such as server downtime, database errors, or connectivity problems, preventing the user from setting investment goals.
3. The system may suggest alternative options for setting investment goals during the technical outage, such as making notes of goals offline or using external tools temporarily.

4. If necessary, the Investor may choose to reach out to customer support for further assistance or clarification on the status of the technical issue and potential solutions.
5. The Investor decides to wait for the technical issue to be resolved and plans to return to the system once the goal-setting feature is restored.
6. Once the goal-setting feature becomes available again, the Investor can log back into the system and proceed with setting their investment goals for the year as intended.

Requirements

Set and Track Investment Goals

ID: REQ018

The system shall enable investors to set and track investment goals.

Relationships

Relationship	From	To
— unnamed	 Investor	 Set Investment Goals

System Admin

ID: AC02

Responsible for maintenance of the system, including user account management and ensuring data privacy

Properties

Abstract	false
Leaf	false
Root	false

Relationships

Relationship	From	To
— unnamed	 System Admin	 System Management
— unnamed	 System Admin	 User Account Management

System Management

ID: UC10

Primary Actors

System Admin

Details

Level	N/A
Complexity	N/A
Use Case Status	N/A
Implementation Status	N/A
Preconditions	The system admin should be logged into the system with valid credentials and should have the required access.

Post-conditions	Sunny Day: The system admin is able to make the system/user account changes successfully. Rainy Day: The system admin fails to make any changes in the system.
Author	N/A
Assumptions	N/A

Scenarios

System Management Sunny Day

1. This scenario begins when the system admin selects "System Management". This is not a feature on the client side and can be operated from the backend by the system admin
2. The system admin can modify/override the system whenever the need arises
3. The system admin can modify/override the users expense details whenever the need arises
4. The system admin can modify/override the system settings whenever the need arises
5. The system notifies the admin regarding the success of each operation performed

System Management Rainy Day

1. This scenario begins when the system admin selects "System Management". This is not a feature on the client side and can be operated from the backend by the system admin
2. The system admin can modify/override the system whenever the need arises
3. The system admin can modify/override the users expense details whenever the need arises
4. The system admin can modify/override the system settings whenever the need arises
5. The system notifies the admin regarding the failure of each operation performed

Requirements

System Configuration and Maintenance Tools

ID: REQ012

The system shall provide tools for system configuration and maintenance for administrators.

Relationships

Relationship	From	To
—unnamed	 System Admin	 System Management

Tax Optimization

ID: UC15

Primary Actors

 [Financial Advisor](#)

Details

Level	N/A
Complexity	N/A
Use Case Status	N/A
Implementation Status	N/A

Preconditions	The Financial advisor has logged into the system using the credentials and has access to the Investors financial portfolio
Post-conditions	Sunny Day: The financial advisor is successfully able to give tax optimization recommendation to the Investor using the  Tax Optimization use case Rainy Day: The financial advisor is unable to give advise to the Investor due to some error encountered.
Author	N/A
Assumptions	N/A

Scenarios

Tax Optimization Sunny Day

1. This scenario begins with the Financial Advisor logging into the portfolio management system using their credentials.
2. The financial advisor selects the client for whom they want to provide tax optimization recommendations.
3. The system displays the client's investment portfolio, including asset allocation, holdings, and historical performance data.
4. The financial advisor reviews the client's tax profile, considering factors such as income level, tax filing status, investment goals, and risk tolerance.
5. The financial advisor generates and presents the tax optimization recommendations to the client in a clear and understandable format, explaining the rationale behind each recommendation and potential tax benefits.
6. The financial advisor engages in a discussion with the client to ensure they understand the proposed tax optimization strategies, addressing any questions or concerns raised by the client.
7. The financial advisor continues to monitor the client's portfolio for ongoing tax optimization opportunities and conducts periodic reviews to ensure the effectiveness of the implemented strategies in optimizing taxes over time.
8. The system maintains detailed records of the tax optimization recommendations.

Tax Optimization Rainy Day

1. This scenario begins with the financial advisor facing error in accessing the client/Investor's financial portfolio due to system downtime/incomplete data/no active investments of the investor's financial portfolio.
2. The financial advisor may consider alternative options for providing tax optimization recommendations to the investor during the technical outage, such as communicating recommendations through email, phone calls, or in-person meetings.

Requirements

Tax Optimization Strategies

ID: REQ020

The system shall offer tax optimization strategies for the investor's portfolio.

Relationships

Relationship	From	To
— unnamed	 Financial Advisor	 Tax Optimization

Track Performance

ID: UC05

Primary Actors

 [Financial Advisor](#),  [Investor](#)

Details

Level	N/A
Complexity	N/A
Use Case Status	N/A
Implementation Status	N/A
Preconditions	The financial advisor and investor should be logged into the portfolio management system using the valid credentials and their profile should be updated.
Post-conditions	Sunny Day: The investor and financial advisor are able to track the progress of the financial portfolio of the investor using the  Track Performance use case. Rainy Day: Neither the investor nor the financial advisor are able to track the performance of the Investor's financial portfolio.
Author	N/A
Assumptions	N/A

Scenarios

Track Performance Sunny Day

1. This scenario begins with the financial advisor navigating to the "Portfolio" or "My Investments" section within the dashboard to view an overview of the investor's financial portfolio.
2. The system displays performance metrics for the portfolio, including overall return, individual asset performance, volatility, and benchmark comparisons.
3. The system presents performance data in graphical charts or visualizations, making it easier for both the financial advisor and investor to interpret and analyze.
4. They track progress towards investment goals or targets set by the investor, monitoring whether the portfolio is on track to meet predefined objectives.
5. They continue to monitor portfolio performance on an ongoing basis, conducting regular reviews and adjustments as needed to ensure that the portfolio remains aligned with the investor's objectives and market conditions.

Track Performance Rainy Day

1. This scenario begins with the financial advisor/investor navigating to the selecting the client/investor whose financial progress is to be analyzed.
2. Due to insufficient financial data of the investor/system downtime the financial advisor is unable to track the progress. The investor will also not be able to view the tracking if the financial portfolio has not been updated on the system.
3. The financial advisor and investor can communicate with each other through the system.

Requirements

Track Investment Performance

ID: REQ014

The system shall provide a feature to track the performance of individual investments and the overall portfolio.

Relationships

Relationship	From	To
—unnamed	 Investor	 Track Performance
—unnamed	 Financial Advisor	 Track Performance

User Account Management

ID: UC09

Primary Actors



Details

Level	N/A
Complexity	N/A
Use Case Status	N/A
Implementation Status	N/A
Preconditions	The system admin must be logged into the portfolio management system using valid credentials and have access to users accounts.
Post-conditions	Sunny Day: The system admin is able to update/manage the users account details using the  User Account Management use case. Rainy Day: The system admin is unable to access the user accounts or make any updatations in them.
Author	N/A
Assumptions	N/A

Scenarios

User Account Management Sunny Day

1. This feature will not be part of the client interface. This is an administrator privilege and can be operated from the system's backend.
2. This scenario begins when the the system admin wants to update/manage some account or system level information
3. The system admin can override operations like update user's account details
4. The system admin can override the user's investment details, in case the user is unable to
5. The system will notify the admin of operation success or failure events

User Account Management Rainy Day

1. This feature will not be part of the client interface. This is an administrator privilege and can be operated from the system's backend.
2. This scenario begins when the the system admin wants to update/manage some account or system level information
3. The system admin can override operations like update user's account details
4. The system admin can override the user's investment details, in case the user is unable to
5. Whenever an operation fails, the admin will be notified of the events,
6. On failure notification the admin can take necessary steps to rectify the situation

Requirements

Role-Based Access Control

ID: REQ002

The system shall ensure that users can only access features based on their roles.

Secure User Authentication

ID: REQ001

The system shall provide secure user authentication.

User Account Management

ID: REQ011

The system shall allow administrators to manage user accounts.

Relationships

Relationship	From	To
— unnamed	 System Admin	 User Account Management

View Portfolio

ID: UC03

Primary Actors

 Investor

Details

Level	N/A
Complexity	N/A
Use Case Status	N/A
Implementation Status	N/A
Preconditions	The investor must be logged into the portfolio management system using valid credentials
Post-conditions	Sunny Day: The investor will be able to see their financial portfolio successfully. Rainy Day: The investor is not able to see the financial portfolio due to system error.
Author	N/A
Assumptions	N/A

Scenarios

View Portfolio - Sunny Day Scenario

1. This scenario begins when the display shows "View Portfolio" option, and the investor decides on viewing their investment data
2. The investor clicks on the "View Portfolio" button
3. The investor is then presented with a list of all active investments along with charts denoting each investment avenue's performance
4. The investor opens a drop-down menu, that displays the list of existing investments
5. The investor can select a particular investment and view more details
6. The investor is presented with multiple filters to help them filter through vast data efficiently
7. The investor can also prefer to view their portfolio information as charts, graphs or as tables

View Portfolio - Rainy Day Scenario (List malfunction)

1. This scenario begins when the display shows "View Portfolio" option, and the investor decides on viewing their investment data
2. The investor clicks on the "View Portfolio" button

3. The investor is then presented with a list of all active investments along with charts denoting each investment avenue's performance
4. The investor can select a particular investment and view more details
5. A server side exception prevents the rendering of individual investment details.
6. The user is notified of the failure through appropriate error messages
- 7.
8. The investor is presented with multiple filters to help them filter through vast data efficiently
9. The investor can also prefer to view their portfolio information as charts, graphs or as tables

View Portfolio - Rainy Day Scenario (Detailed view malfunction)

1. This scenario begins when the display shows "View Portfolio" option, and the investor decides on viewing their investment data
2. The investor clicks on the "View Portfolio" button
3. The user is notified of the failure through appropriate error messages
4. The investor is then presented with a list of all active investments along with charts denoting each investment avenue's performance
5. The investor can select a particular investment and view more details
6. The investor is presented with multiple filters to help them filter through vast data efficiently
7. The investor can also prefer to view their portfolio information as charts, graphs or as tables

View Portfolio - Rainy Day Scenario (Filter malfunction)

1. This scenario begins when the display shows "View Portfolio" option, and the investor decides on viewing their investment data
2. The investor clicks on the "View Portfolio" button
3. The investor is then presented with a list of all active investments along with charts denoting each investment avenue's performance
4. The investor can select a particular investment and view more details
5. The investor is presented with multiple filters to help them filter through vast data efficiently
6. The investor can also prefer to view their portfolio information as charts, graphs or as tables
7. A server side exception while filtering the data or during rendering graphs
8. The user is notified of the failure through appropriate error messages

Requirements

View Entire Investment Portfolio

ID: REQ004

The system shall allow investors to view their entire investment portfolio.

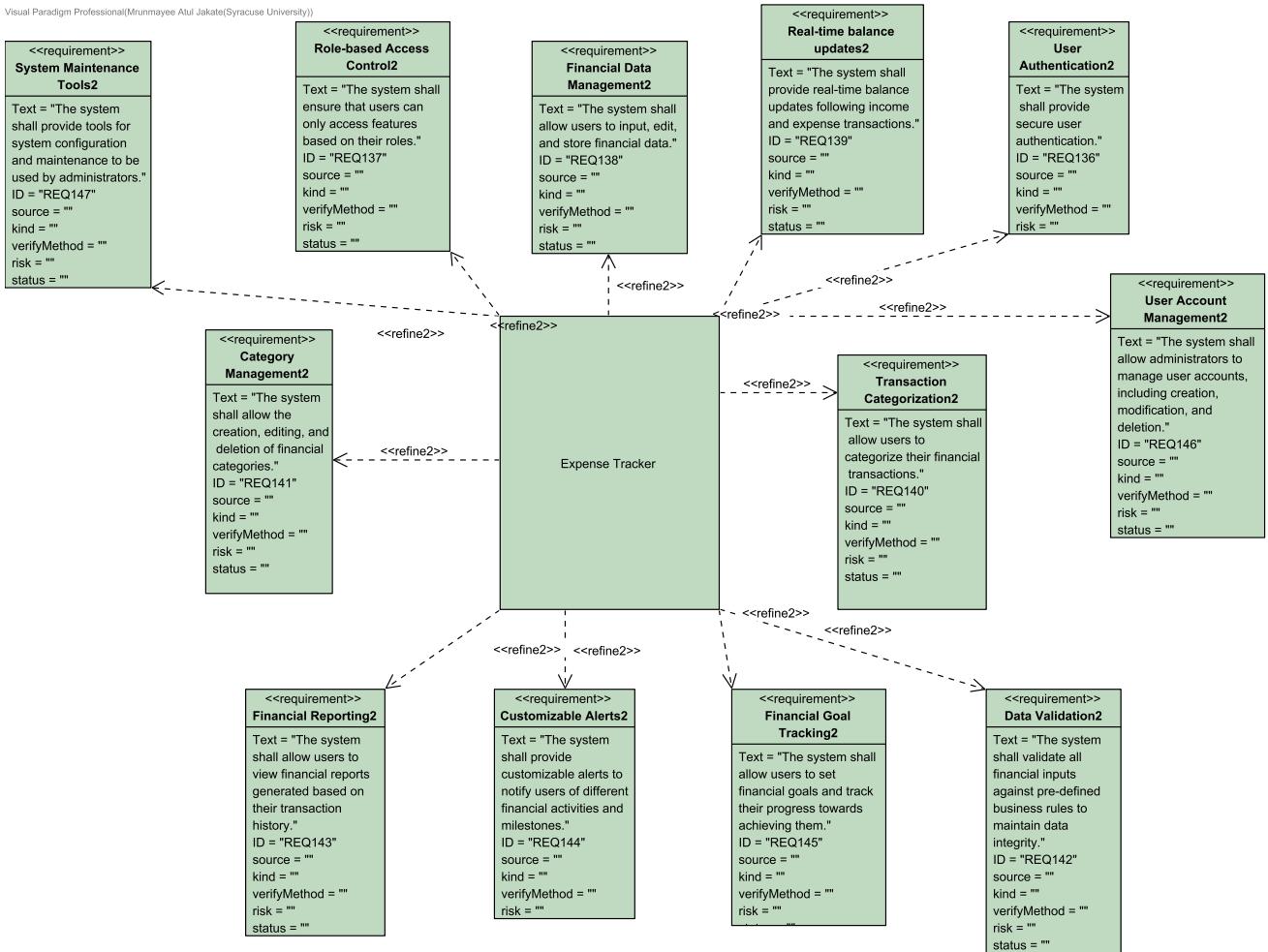
Relationships

Relationship	From	To
— unnamed	 Investor	 View Portfolio

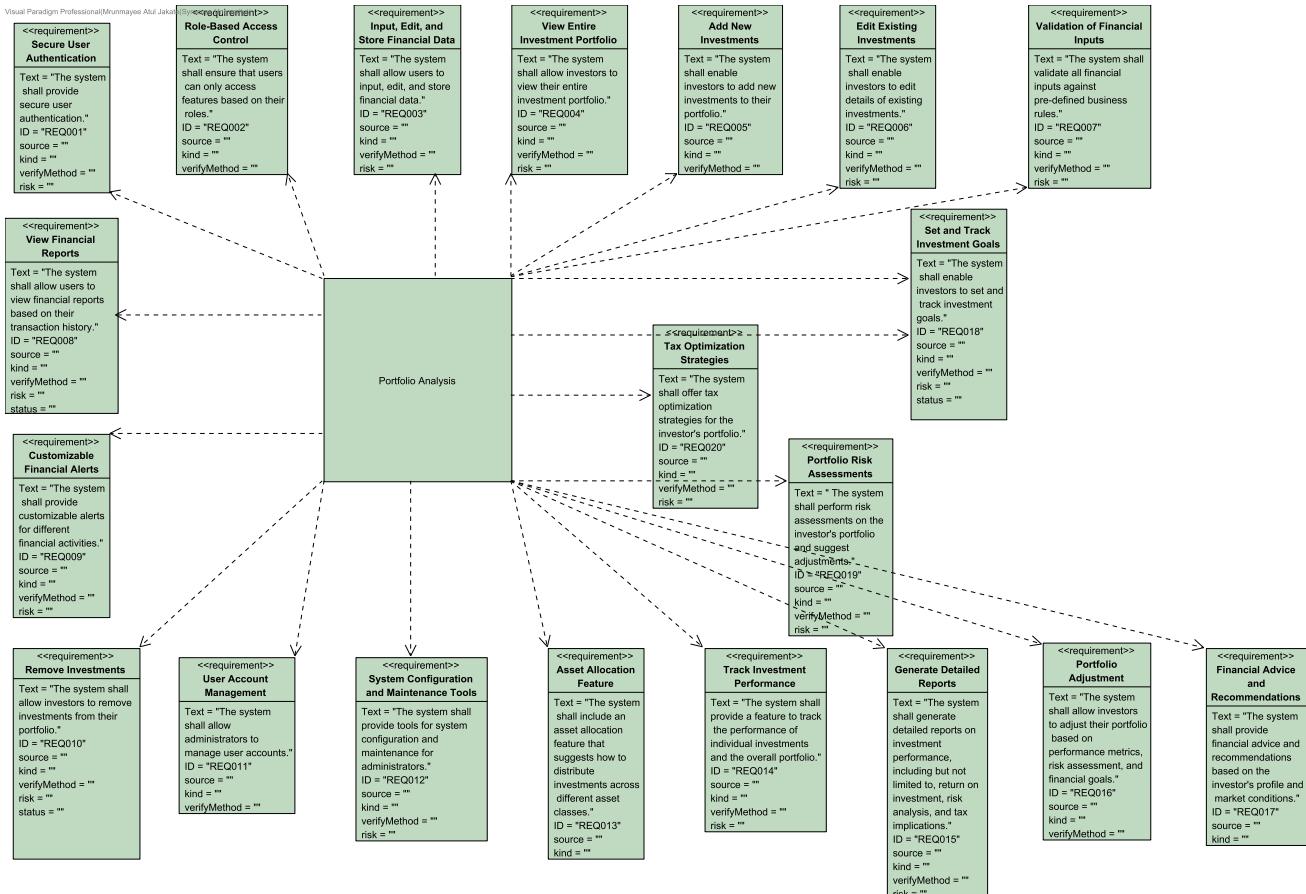
2.3.3. Reference Diagrams

Expense Tracker User Requirements diagram

Visual Paradigm Professional(Mrunmayee Atul Jakate(Syracuse University))



Portfolio Analysis User Requirements Diagram



2.4. User Characteristics

Refer to Use Case Diagram above and the descriptions of the Actors.

2.5. Constraints

These are defined specifically in Section 3

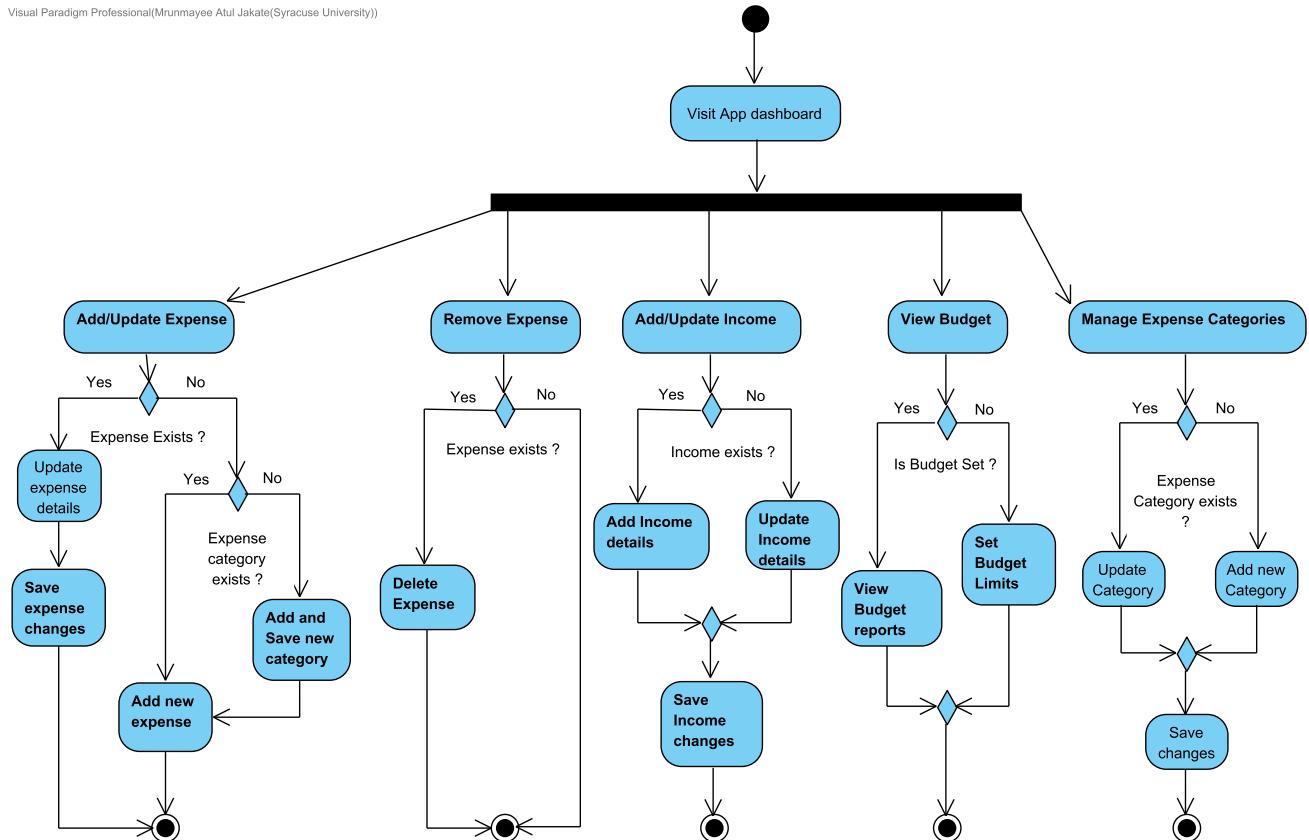
3. Specific Requirements

3.1. Overview

This section delineates the detailed features and associated requirements of a personal finance management system, featuring an Expense Tracker equipped with a user-friendly dashboard for efficient expense calculation and management.

3.1.1. Expense Tracker Activity Diagram

Visual Paradigm Professional(Mrunmayee Atul Jakate(Syracuse University))

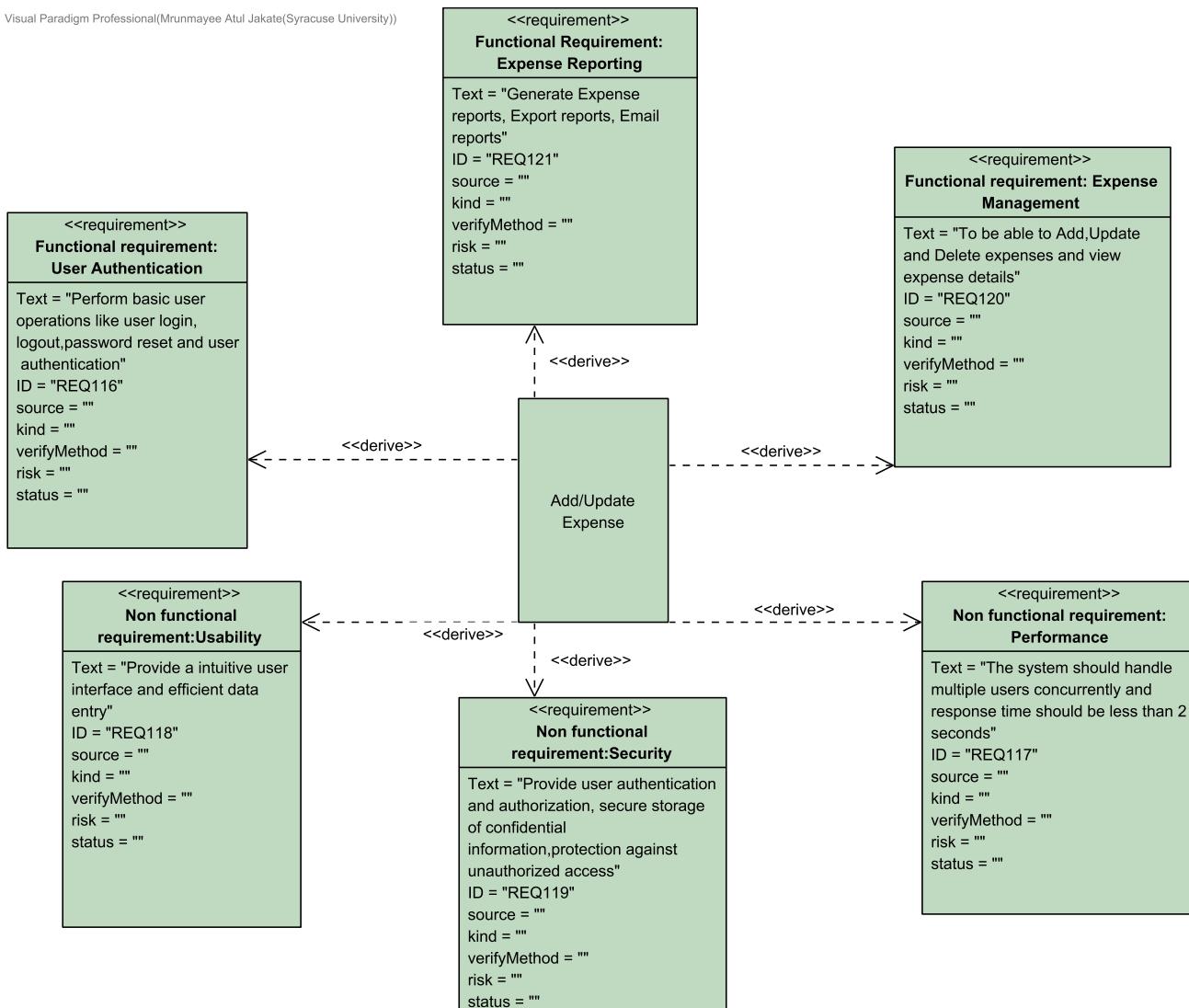


Add/Update Expense

This activity specifies the functionality of the user to add/update expense on the front-end of the application

Add/Update Expense System Requirements

Visual Paradigm Professional(Mrunmayee Atul Jakate(Syracuse University))



Functional Requirement: Expense Reporting

ID: REQ121

Generate Expense reports, Export reports, Email reports

Functional requirement: Expense Management

ID: REQ120

To be able to Add,Update and Delete expenses and view expense details

Functional requirement: User Authentication

ID: REQ116

Perform basic user operations like user login, logout,password reset and user authentication

 ***Non functional requirement: Performance***

ID: REQ117

The system should handle multiple users concurrently and response time should be less than 2 seconds

 ***Non functional requirement:Security***

ID: REQ119

Provide user authentication and authorization, secure storage of confidential information, protection against unauthorized access

 ***Non functional requirement:Usability***

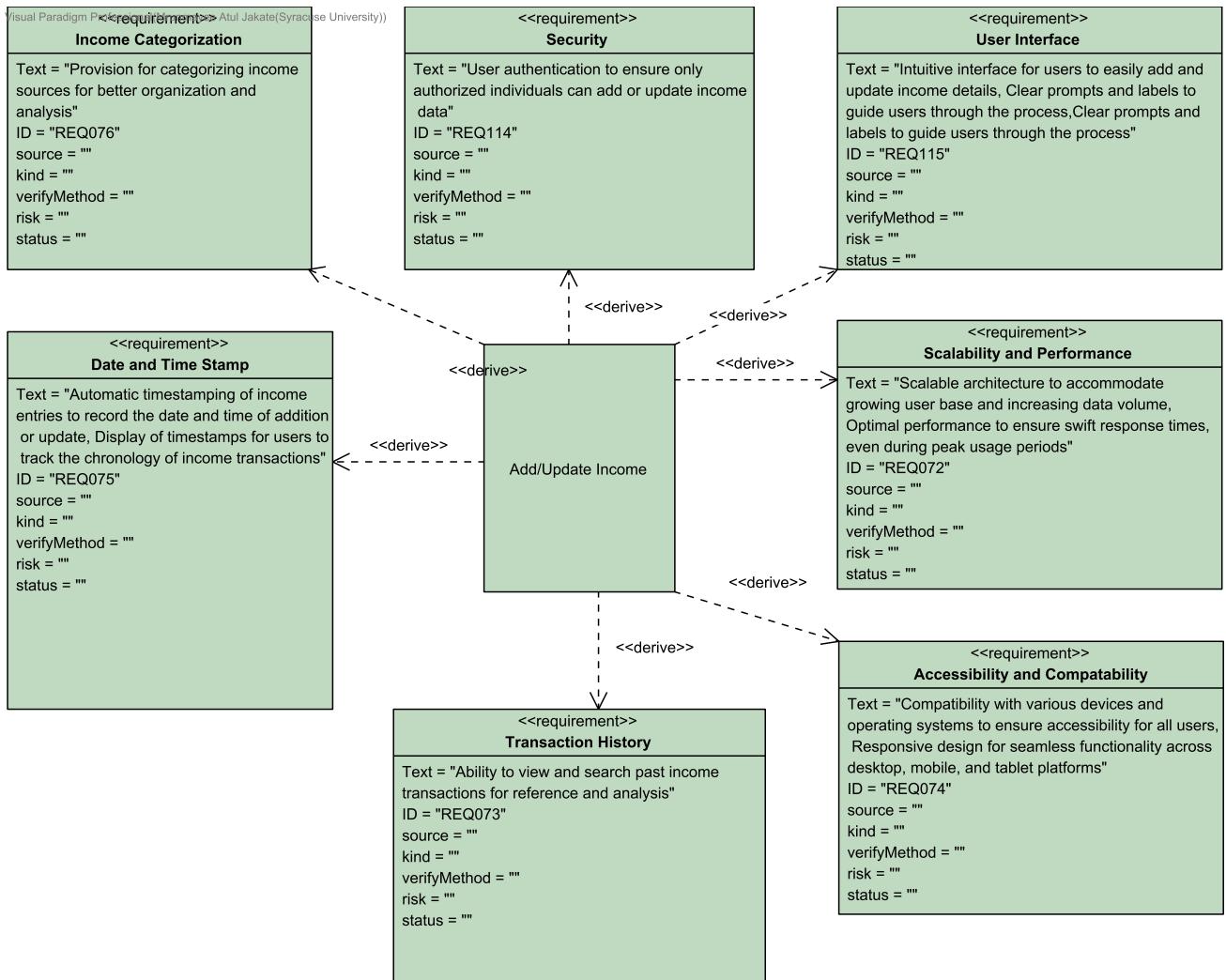
ID: REQ118

Provide a intuitive user interface and efficient data entry

 ***Add/Update Income***

Illustrates the process of entering new income details or updating existing income records within the personal finance management system, facilitating seamless management and tracking of financial inflows

Add/Update Income System Requirements



Add Income details

Represents the user's activity of inputting and saving income-related information into the system, facilitating comprehensive financial tracking and analysis.

Accessibility and Compatibility

ID: REQ074

Compatibility with various devices and operating systems to ensure accessibility for all users, Responsive design for seamless functionality across desktop, mobile, and tablet platforms

Date and Time Stamp

ID: REQ075

Automatic timestamping of income entries to record the date and time of addition or update, Display of timestamps for users to track the chronology of income transactions

Income Categorization

ID: REQ076

Provision for categorizing income sources for better organization and analysis

Scalability and Performance

ID: REQ072

Scalable architecture to accommodate growing user base and increasing data volume,
Optimal performance to ensure swift response times, even during peak usage periods

Security

ID: REQ114

User authentication to ensure only authorized individuals can add or update income data

Transaction History

ID: REQ073

Ability to view and search past income transactions for reference and analysis

User Interface

ID: REQ115

Intuitive interface for users to easily add and update income details, Clear prompts and labels to guide users through the process,Clear prompts and labels to guide users through the process

Add and Save new category

Denotes the user's activity of creating a new expense category and saving it within the system, enhancing organization and specificity in expense tracking.

Add new Category

Denotes the user's activity of creating and incorporating a new expense category into the system, facilitating enhanced organization and categorization of financial transactions.

Add new expense

User-initiated process of entering and saving new expense details into the personal finance management system, enabling comprehensive tracking and management of financial transactions.

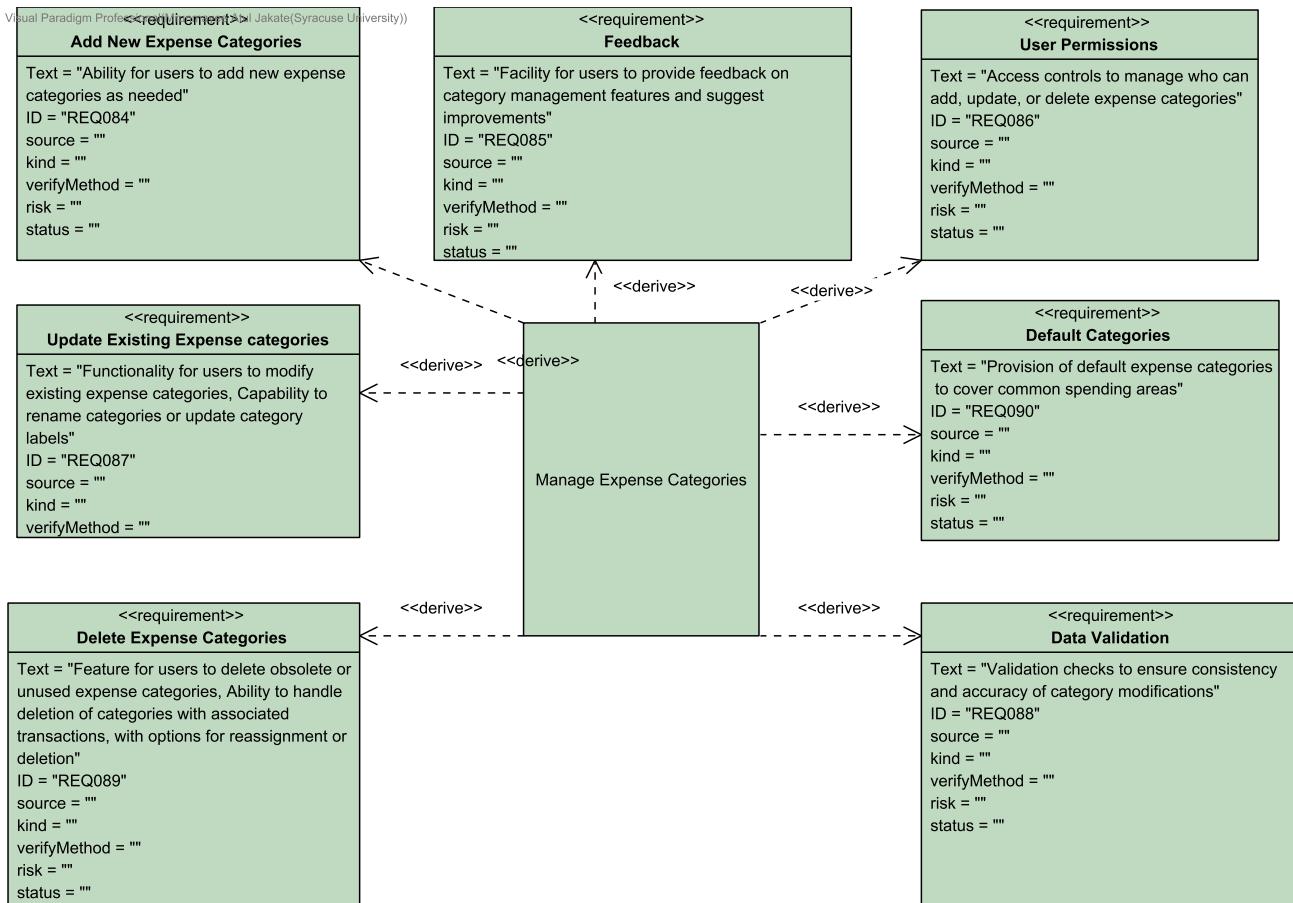
Delete Expense

Signifies the user-initiated process of removing a specific expense entry from the system, facilitating efficient management and decluttering of expense records.

Manage Expense Categories

Represents the process of adding, editing, or deleting expense categories within the personal finance management system, providing users with control over how they categorize and organize their expenses for better financial management

Manage Expense Categories System Requirements



Add New Expense Categories

ID: REQ084

Ability for users to add new expense categories as needed

Data Validation

ID: REQ088

Validation checks to ensure consistency and accuracy of category modifications

Default Categories

ID: REQ090

Provision of default expense categories to cover common spending areas

Delete Expense Categories

ID: REQ089

Feature for users to delete obsolete or unused expense categories, Ability to handle deletion of categories with associated transactions, with options for reassignment or deletion

Feedback

ID: REQ085

Facility for users to provide feedback on category management features and suggest improvements

Update Existing Expense categories

ID: REQ087

Functionality for users to modify existing expense categories, Capability to rename categories or update category labels

User Permissions

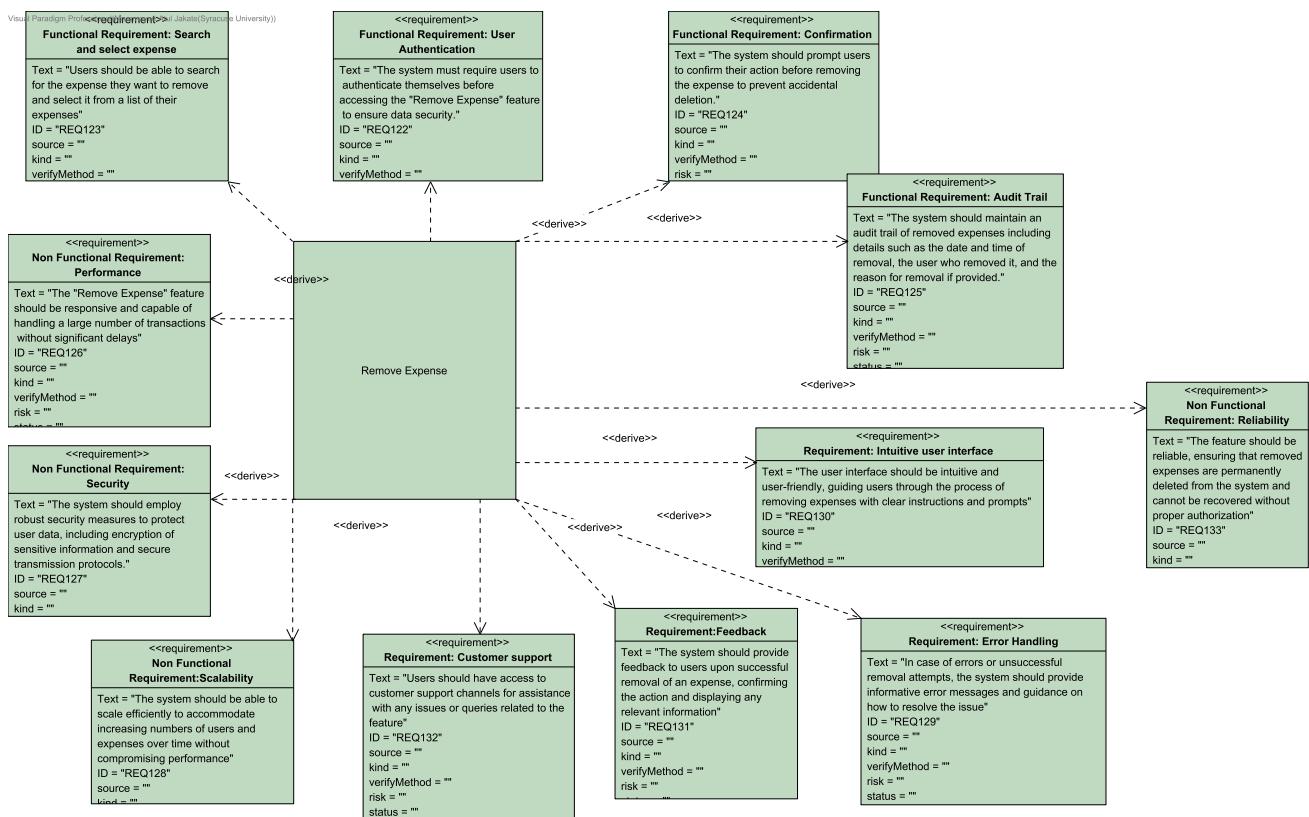
ID: REQ086

Access controls to manage who can add, update, or delete expense categories

Remove Expense

Represents the process of deleting an expense record from the personal finance management system, triggered by a user action or system event, leading to the removal of the corresponding expense data from the database

Remove Expense System Requirements



Functional Requirement: Audit Trail

ID: REQ125

The system should maintain an audit trail of removed expenses including details such as the date and time of removal, the user who removed it, and the reason for removal if provided.

Functional Requirement: Confirmation

ID: REQ124

The system should prompt users to confirm their action before removing the expense to prevent accidental deletion.

Functional Requirement: Search and select expense

ID: REQ123

Users should be able to search for the expense they want to remove and select it from a list of their expenses

Functional Requirement: User Authentication

ID: REQ122

The system must require users to authenticate themselves before accessing the "Remove Expense" feature to ensure data security.

Non Functional Requirement: Performance

ID: REQ126

The "Remove Expense" feature should be responsive and capable of handling a large number of transactions without significant delays

Non Functional Requirement: Reliability

ID: REQ133

The feature should be reliable, ensuring that removed expenses are permanently deleted from the system and cannot be recovered without proper authorization

Non Functional Requirement: Security

ID: REQ127

The system should employ robust security measures to protect user data, including encryption of sensitive information and secure transmission protocols.

Non Functional Requirement:Scalability

ID: REQ128

The system should be able to scale efficiently to accommodate increasing numbers of users and expenses over time without compromising performance

Requirement: Customer support

ID: REQ132

Users should have access to customer support channels for assistance with any issues or queries related to the feature

Requirement: Error Handling

ID: REQ129

In case of errors or unsuccessful removal attempts, the system should provide informative error messages and guidance on how to resolve the issue

Requirement: Intuitive user interface

ID: REQ130

The user interface should be intuitive and user-friendly, guiding users through the process of removing expenses with clear instructions and prompts

Requirement: Feedback

ID: REQ131

The system should provide feedback to users upon successful removal of an expense, confirming the action and displaying any relevant information

Save Income changes

Denotes the process of persisting updated income details entered by the user, ensuring accurate and up-to-date financial records within the system.

Save changes

Represents the process of persisting any modifications or updates made by the user, ensuring that changes to expense or income details are securely stored within the system.

Save expense changes

Signifies the process of persisting updated expense details entered by the user, ensuring that modifications are securely stored within the personal finance management system's database.

Set Budget Limits

Represents the user's activity of defining and establishing limits for various budget categories within the system, enabling proactive management of expenses and financial goals.

Update Category

Signifies the user's activity of modifying and updating the details or settings associated with a specific expense category within the system, ensuring accurate categorization and organization of financial data.

Update Income details

Represents the user's activity of modifying and revising existing income information within the system, facilitating accurate financial tracking and management.

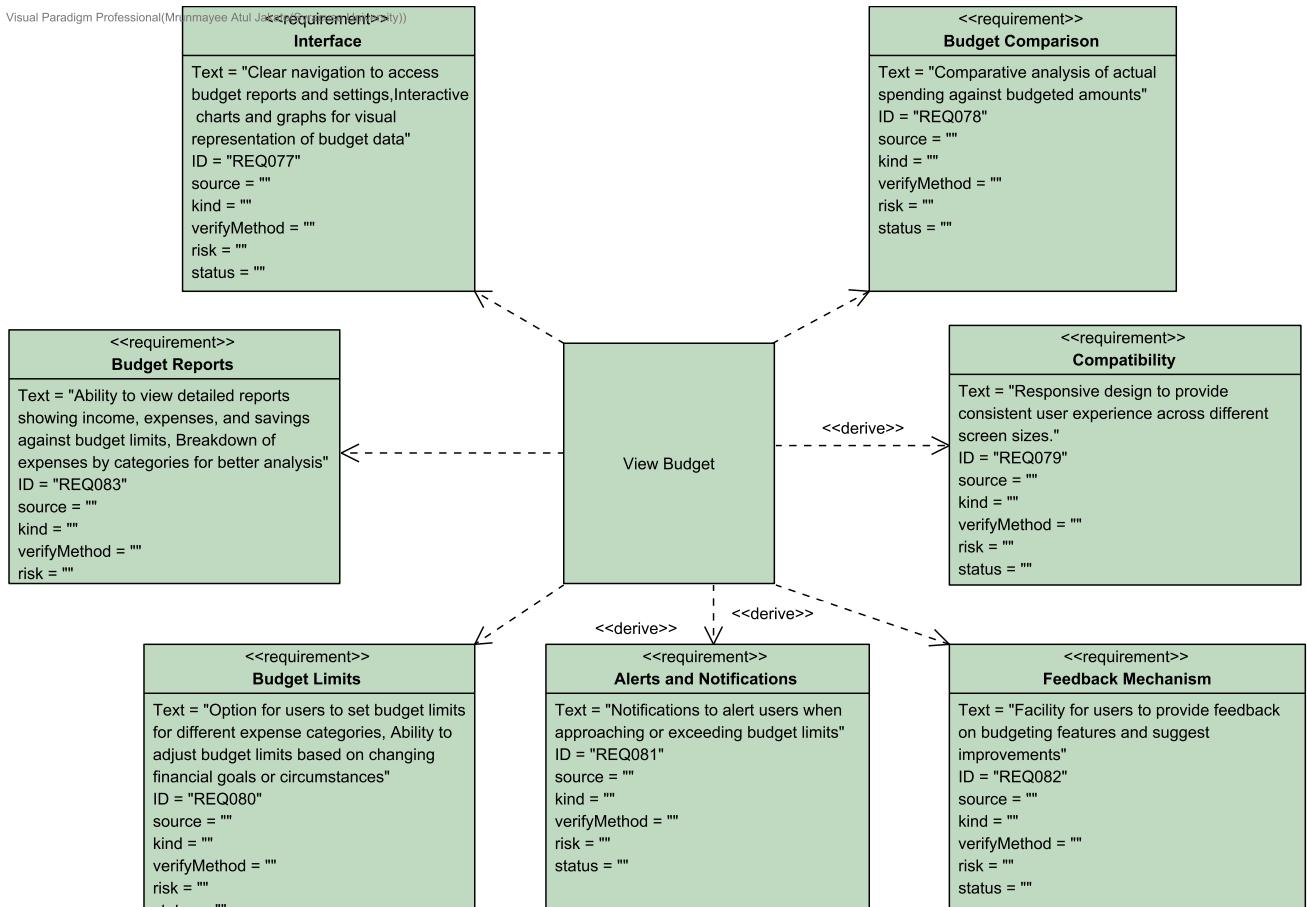
Update expense details

Denotes the process of modifying and revising existing expense information within the personal finance management system, ensuring accurate and up-to-date financial records. This action involves user interaction to input revised expense data and system processing to update the corresponding records accordingly.

View Budget

Demonstrates the process of accessing and reviewing budget information within the personal finance management system, allowing users to monitor their financial allocations and expenditures effectively

View Budget System Requirement Diagram



Alerts and Notifications

ID: REQ081

Notifications to alert users when approaching or exceeding budget limits

Budget Comparison

ID: REQ078

Comparative analysis of actual spending against budgeted amounts

Budget Limits

ID: REQ080

Option for users to set budget limits for different expense categories, Ability to adjust budget limits based on changing financial goals or circumstances

 **Budget Reports**

ID: REQ083

Ability to view detailed reports showing income, expenses, and savings against budget limits, Breakdown of expenses by categories for better analysis

 **Compatibility**

ID: REQ079

Responsive design to provide consistent user experience across different screen sizes.

 **Feedback Mechanism**

ID: REQ082

Facility for users to provide feedback on budgeting features and suggest improvements

 **Interface**

ID: REQ077

Clear navigation to access budget reports and settings, Interactive charts and graphs for visual representation of budget data

 **View Budget reports**

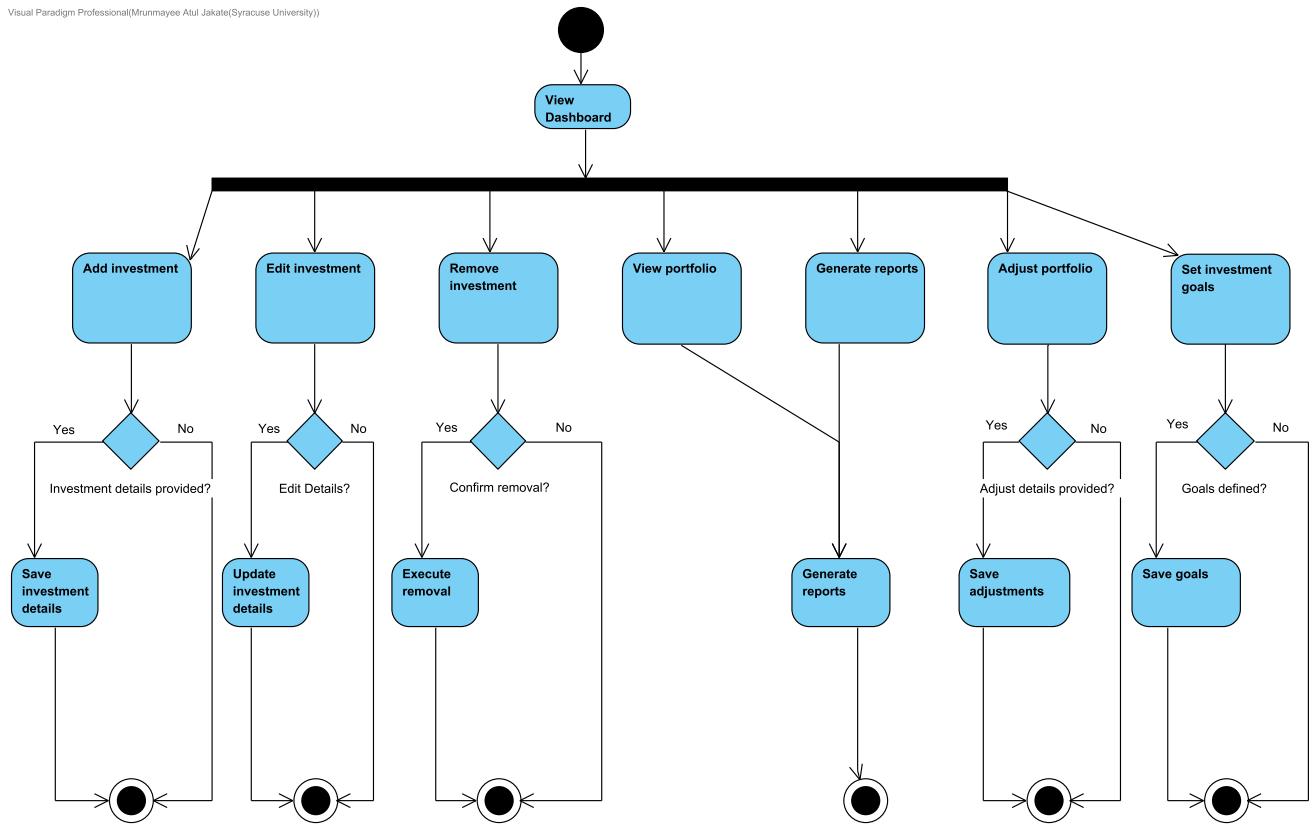
Denotes the user's activity of accessing and analyzing detailed reports summarizing budget-related information, aiding in financial planning and evaluation.

 **Visit App dashboard**

Illustrates the process of accessing the main dashboard interface of the personal finance management system, presenting users with an overview of their financial status, including summaries of income, expenses, budgets, and other relevant metrics, facilitating informed decision-making and financial planning.

3.1.2. Portfolio Analysis Activity Diagram

Visual Paradigm Professional(Mrunmayee Atul Jakate(Syracuse University))

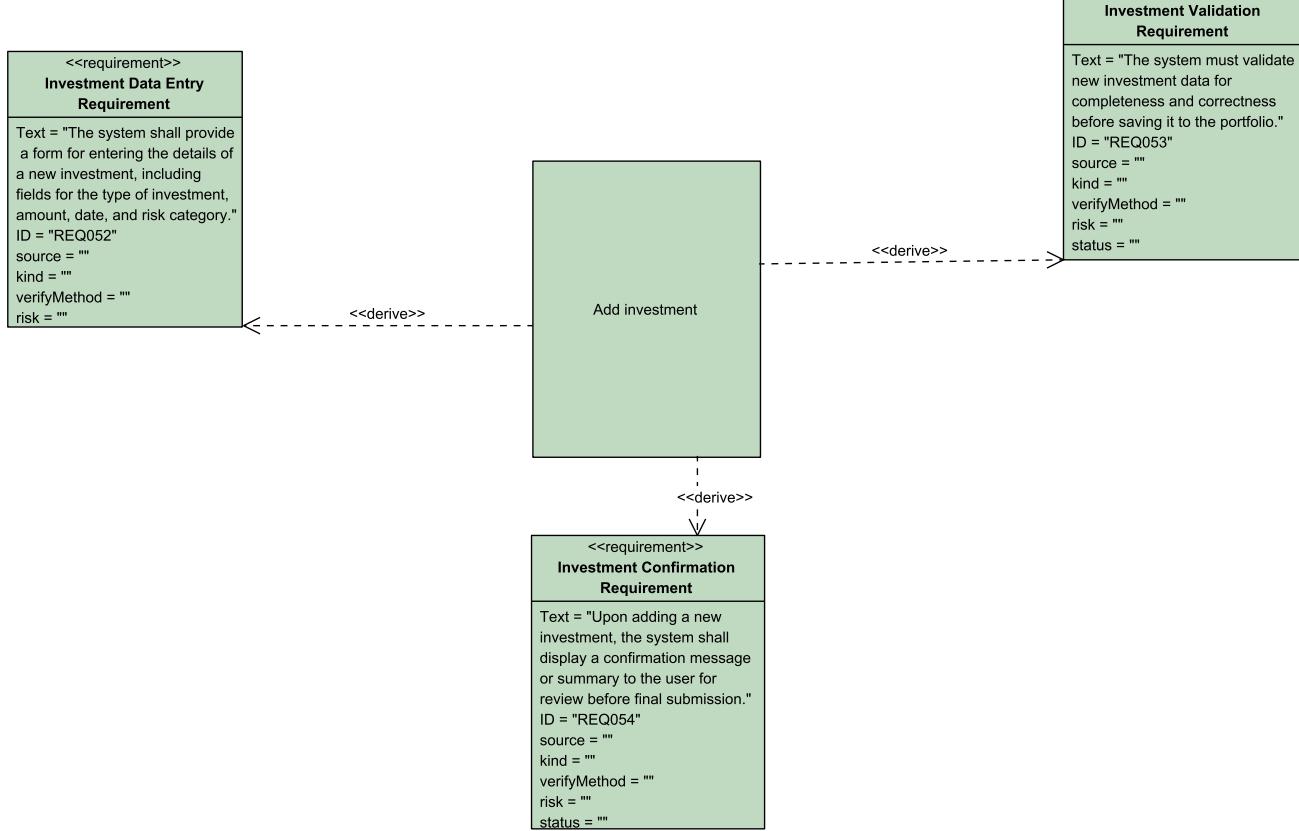


■ Add investment

Illustrates the process of inputting new investment details into the personal finance management system, enabling users to track their investment portfolio and monitor financial growth effectively.

Add Investment System Requirements

Visual Paradigm Professional(Mrunmayee Atul Jakate(Syracuse University))



Investment Confirmation Requirement

ID: REQ054

Upon adding a new investment, the system shall display a confirmation message or summary to the user for review before final submission.

Investment Data Entry Requirement

ID: REQ052

The system shall provide a form for entering the details of a new investment, including fields for the type of investment, amount, date, and risk category.

Investment Validation Requirement

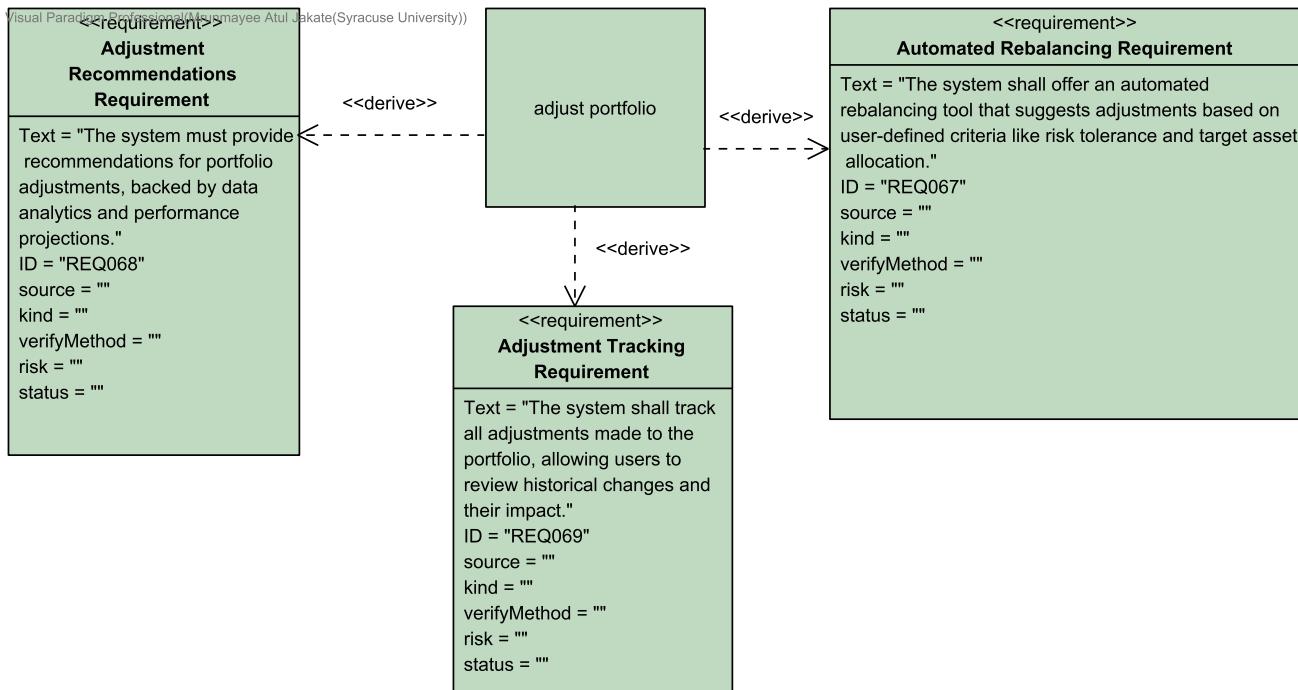
ID: REQ053

The system must validate new investment data for completeness and correctness before saving it to the portfolio.

Adjust portfolio

Depicts the process of modifying investment holdings or asset allocation within the personal finance management system, allowing users to adapt their portfolio strategy based on financial goals, market conditions, and risk preferences for optimal performance

Adjust Portfolio System Requirements



Adjustment Recommendations Requirement

ID: REQ068

The system must provide recommendations for portfolio adjustments, backed by data analytics and performance projections.

Adjustment Tracking Requirement

ID: REQ069

The system shall track all adjustments made to the portfolio, allowing users to review historical changes and their impact.

Automated Rebalancing Requirement

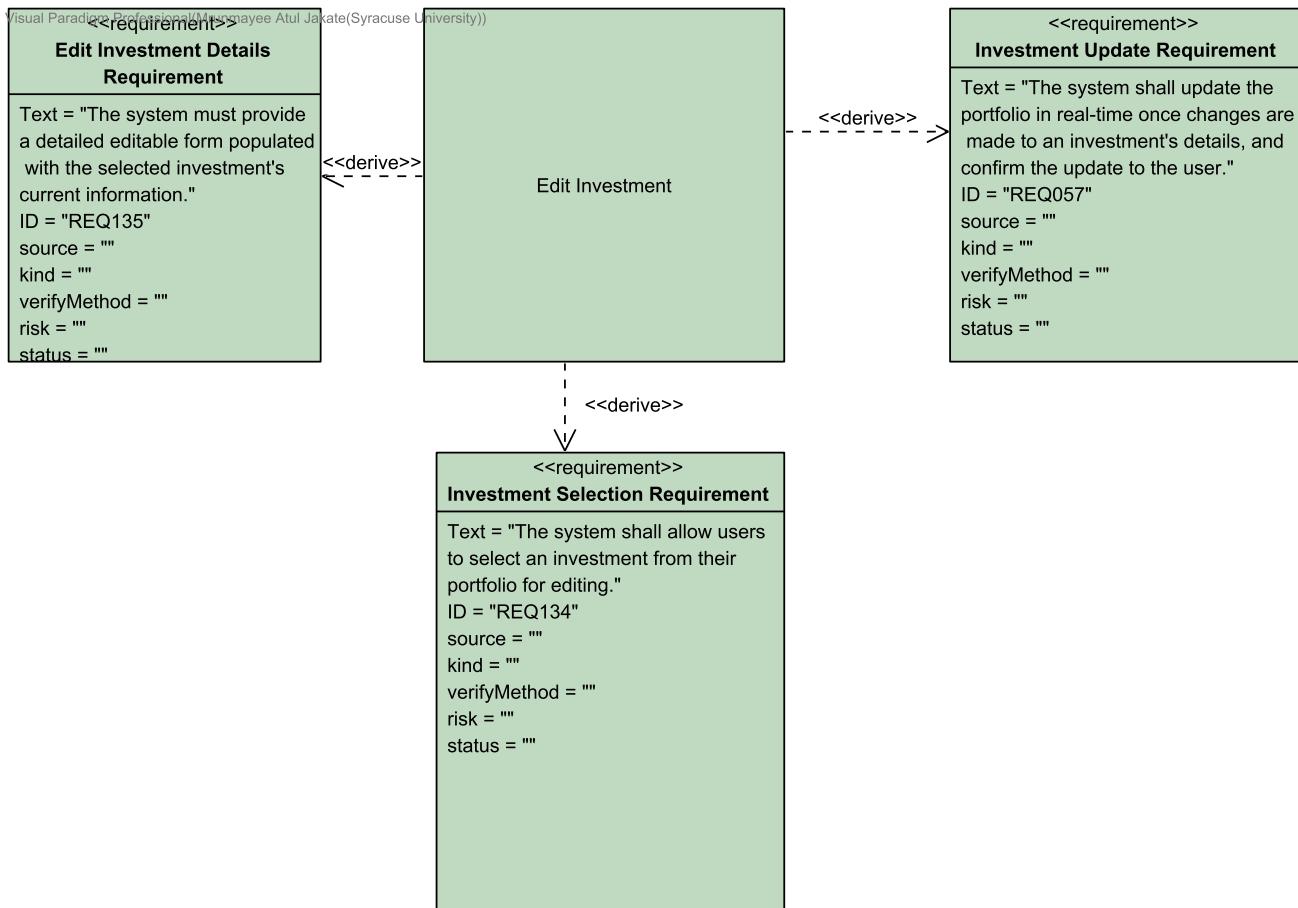
ID: REQ067

The system shall offer an automated rebalancing tool that suggests adjustments based on user-defined criteria like risk tolerance and target asset allocation.

Edit investment

Depicts the process of modifying existing investment details within the personal finance management system, allowing users to update investment information accurately and reflect changes in their financial portfolio

Edit Investment System Requirements



Edit Investment Details Requirement

ID: REQ135

The system must provide a detailed editable form populated with the selected investment's current information.

Investment Selection Requirement

ID: REQ134

The system shall allow users to select an investment from their portfolio for editing.

Investment Update Requirement

ID: REQ057

The system shall update the portfolio in real-time once changes are made to an investment's details, and confirm the update to the user.

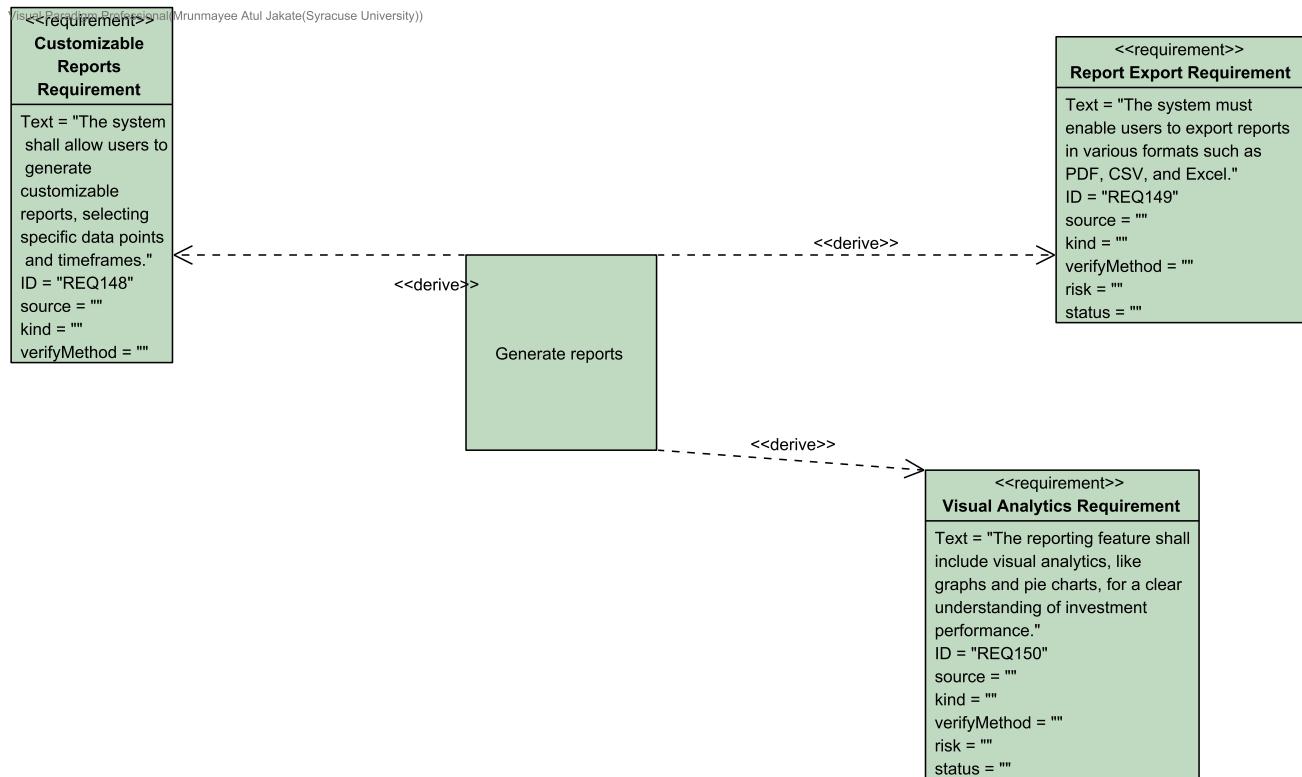
Execute removal

Represents the systematic removal of a selected investment from the user's portfolio, ensuring accurate reflection of financial holdings.

Generate reports

Denotes the process of producing comprehensive reports summarizing investment performance and portfolio metrics for informed financial decision-making.

Generate Reports System Requirements



Customizable Reports Requirement

ID: REQ148

The system shall allow users to generate customizable reports, selecting specific data points and timeframes.

Report Export Requirement

ID: REQ149

The system must enable users to export reports in various formats such as PDF, CSV, and Excel.

Visual Analytics Requirement

ID: REQ150

The reporting feature shall include visual analytics, like graphs and pie charts, for a clear understanding of investment performance.

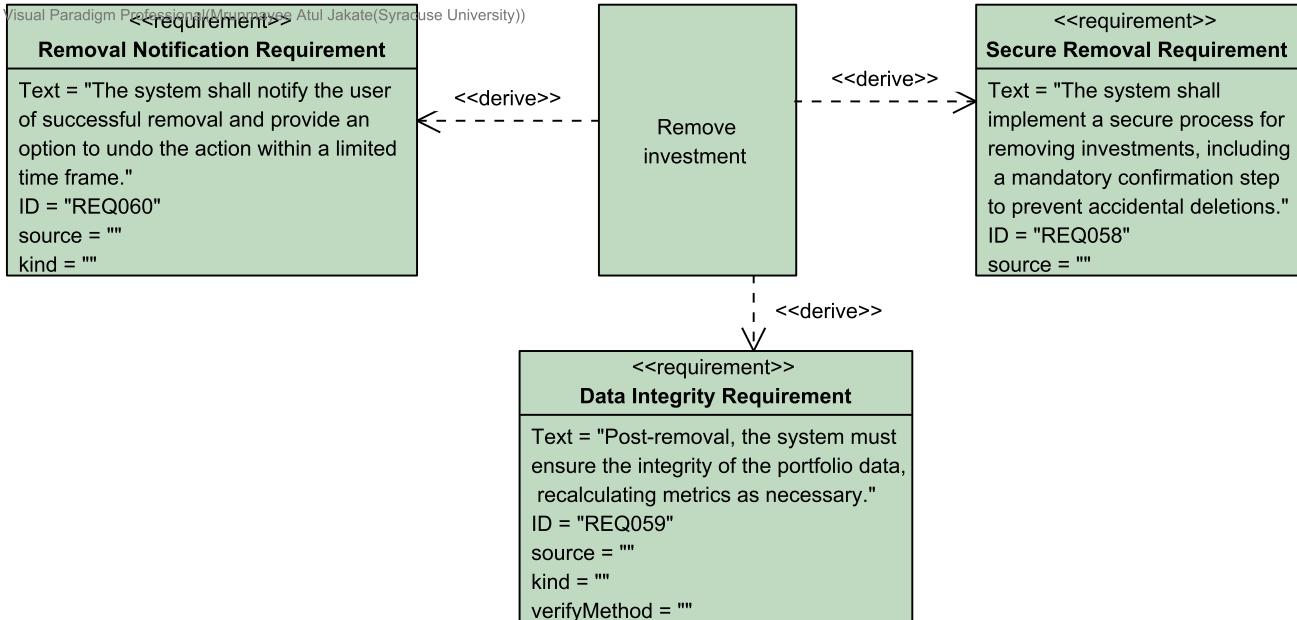
Generate reports

Illustrates the process of creating financial reports within the personal finance management system, enabling users to analyze their financial data comprehensively and make informed decisions regarding budgeting, investments, and expenses management.

Remove investment

Illustrates the process of deleting an investment record from the personal finance management system, enabling users to manage their investment portfolio by removing outdated or irrelevant entries accurately.

Remove Investment System Requirements



Data Integrity Requirement

ID: REQ059

Post-removal, the system must ensure the integrity of the portfolio data, recalculating metrics as necessary.

Removal Notification Requirement

ID: REQ060

The system shall notify the user of successful removal and provide an option to undo the action within a limited time frame.

Secure Removal Requirement

ID: REQ058

The system shall implement a secure process for removing investments, including a mandatory confirmation step to prevent accidental deletions.

Save adjustments

Represents the process of persisting any modifications or updates made to investment portfolios, ensuring accurate tracking and management of financial assets.

Save goals

Signifies the process of persisting user-defined financial objectives, enabling systematic tracking and alignment of investment strategies with personal goals.

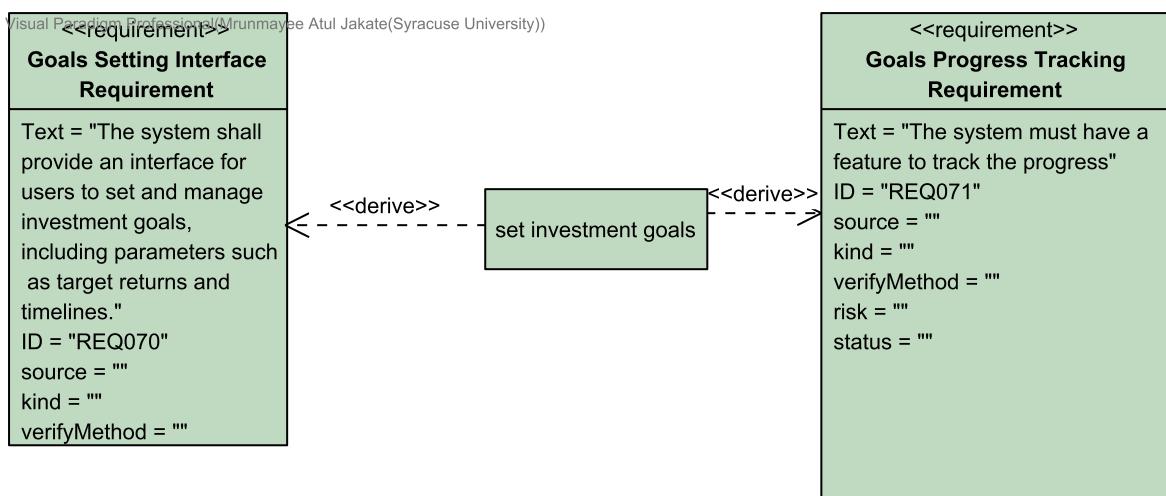
Save investment details

Denotes the process of persisting updated investment information entered by the user, ensuring accurate tracking and management of financial assets.

Set investment goals

Illustrates the process of defining financial objectives and targets within the personal finance management system, facilitating users to establish clear investment goals aligned with their long-term financial plans and aspirations.

Set Investment Goal System Requirements



Goals Progress Tracking Requirement

ID: REQ071

The system must have a feature to track the progress

Goals Setting Interface Requirement

ID: REQ070

The system shall provide an interface for users to set and manage investment goals, including parameters such as target returns and timelines.

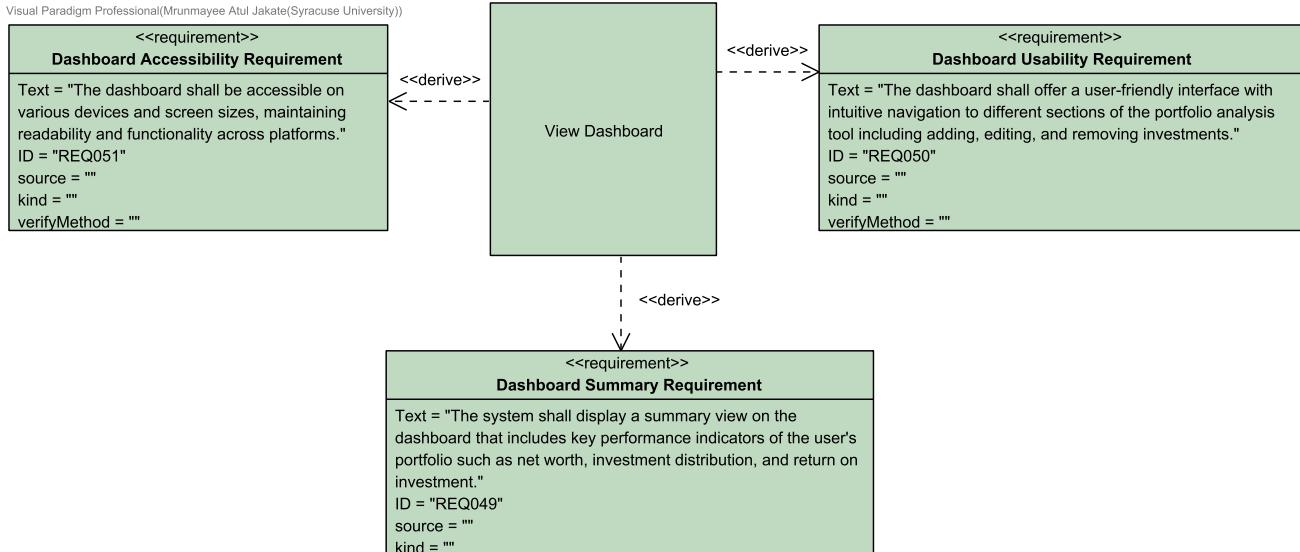
Update investment details

Signifies the user's activity of modifying and revising existing investment information, facilitating real-time adjustments to financial portfolios.

View Dashboard

Represents the action of navigating to the main dashboard interface of the personal finance management system, providing users with a comprehensive overview of their financial data and key metrics for effective monitoring and decision-making

View Dashboard System Requirements



Dashboard Accessibility Requirement

ID: REQ051

The dashboard shall be accessible on various devices and screen sizes, maintaining readability and functionality across platforms.

Dashboard Summary Requirement

ID: REQ049

The system shall display a summary view on the dashboard that includes key performance indicators of the user's portfolio such as net worth, investment distribution, and return on investment.

Dashboard Usability Requirement

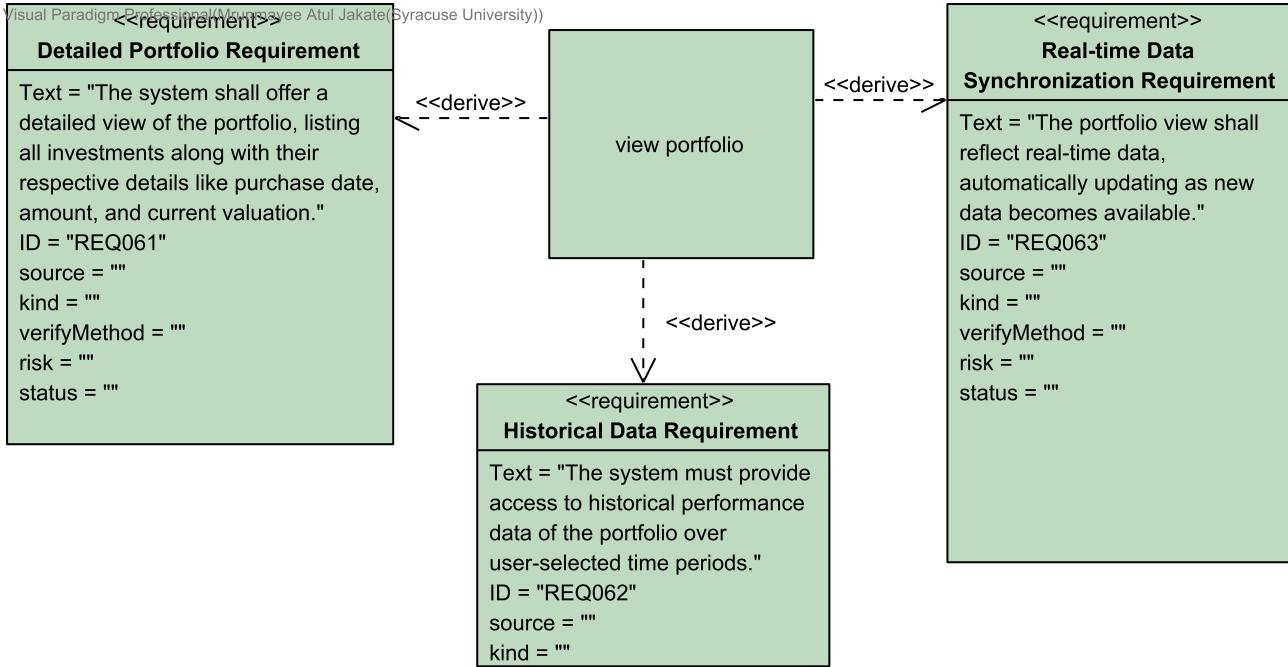
ID: REQ050

The dashboard shall offer a user-friendly interface with intuitive navigation to different sections of the portfolio analysis tool including adding, editing, and removing investments.

View portfolio

Represents the action of accessing the portfolio section in the personal finance management system, allowing users to review their investment holdings, asset allocation, and overall financial portfolio performance for informed decision-making and financial planning

View Portfolio System Requirements



Detailed Portfolio Requirement

ID: REQ061

The system shall offer a detailed view of the portfolio, listing all investments along with their respective details like purchase date, amount, and current valuation.

Historical Data Requirement

ID: REQ062

The system must provide access to historical performance data of the portfolio over user-selected time periods.

Real-time Data Synchronization Requirement

ID: REQ063

The portfolio view shall reflect real-time data, automatically updating as new data becomes available.

3.2. Performance Requirement

3.2.1. Non functional requirement: Performance

ID: REQ117

The system should handle multiple users concurrently and response time should be less than 2 seconds

3.2.2. Accessibility and Compatability

ID: REQ074

Compatibility with various devices and operating systems to ensure accessibility for all users, Responsive design for seamless functionality across desktop, mobile, and tablet platforms

3.2.3. Scalability and Performance

ID: REQ072

Scalable architecture to accommodate growing user base and increasing data volume, Optimal performance to ensure swift response times, even during peak usage periods

3.2.4. Real-time Data Synchronization Requirement

ID: REQ063

The portfolio view shall reflect real-time data, automatically updating as new data becomes available.

3.3. Design Constraints

3.3.1. Non functional requirement:Usability

ID: REQ118

Provide a intuitive user interface and efficient data entry

3.3.2. Non functional requirement:Security

ID: REQ119

Provide user authentication and authorization, secure storage of confidential information,protection against unauthorized access

3.3.3. Functional requirement: User Authentication

ID: REQ116

Perform basic user operations like user login, logout,password reset and user authentication

3.3.4. User Interface

ID: REQ115

Intuitive interface for users to easily add and update income details, Clear prompts and labels to guide users through the process,Clear prompts and labels to guide users through the process