

1. **Requirements - Mitch**

Functional Requirements (Choose 10-12 to stick with)

- FR1 - User Account Management - The system must allow users to create, edit, and delete their accounts, incorporating authentication and authorization processes to ensure secure access
- FR2 - Budget Creation and Management - Users should be able to create, view, update, and delete budgets for various categories and time frames
- FR3 - Expense Tracking - The app must provide functionalities for users to log, categorize, and track their expenses in real-time
- FR4 - Financial Goal Setting - Users must be able to set, monitor, and adjust their financial goals
- FR5 - Financial Reporting - The system should generate detailed reports and visualizations of users' financial activities
- FR6 - Personalized Financial Insights - Based on users' financial data, the app must provide personalized financial advice and recommendations
- FR7 - Data Import/Export - Users should be able to import financial data from external sources and export their financial data for personal backup or use in other applications
- FR8 - Notifications and Alerts - The system must send timely notifications and alerts for budget limits, goal milestones, and personalized financial advice
- FR9 - Search and Filter Functionality - Users must be able to search and filter their financial transactions and reports for better data management
- FR10 - Savings Tracker - Enable users to track their savings progress towards specific goals, including visual progress indicators
- FR11 - Debt Management - Provide tools for users to manage and track their debts, including loan calculators and payment plan organizers
- FR12 - Income Tracker - The application must allow users to record, categorize, and track their income sources, including salaries, payments, and other forms of income to show their entire financial flow
- FR13 - Financial Education - Offer users accessible tools to improve their understanding of finance, budgeting techniques, and methods to invest their money.

Non-functional Requirements (Choose 6-8 to stick with)

- NFR1 - Usability - The app should have an intuitive and user-friendly interface that simplifies the management of personal finances for a wide range of users

- NFR2 - Performance - The system must ensure fast response times and efficient data processing to handle financial calculations and reporting without noticeable delays
- NFR3 - Security - Implement stringent security measures to protect users' sensitive financial information
- NFR4 - Scalability - The architecture of the system should be scalable, supporting an increasing number of users and data volume without degradation in performance
- NFR5 - Reliability - The app must be reliable, with minimal downtime, and capable of recovering quickly from failures to ensure continuous financial tracking
- NFR6 - Compliance - Ensure compliance with legal and regulatory requirements related to financial data handling and privacy protection
- NFR7 - Accessibility - Ensure the app is accessible to users with disabilities, adding features like screen reading and voice commands
- NFR8 - Data Integrity - Implement mechanisms to ensure the accuracy and consistency of financial data throughout its lifecycle in the app
- NFR9 - Interoperability - The system should be able to integrate with external financial institutions and services for direct import of financial transactions
- NFR10 - Localization - Support multiple languages and regional settings to cater to a global user base, including local tax laws and financial practices

Constraints (Couldn't think of any other good constraints so I did these 2)

- C1 - Platform Compatibility - The app must be compatible with major mobile operating systems to ensure accessibility for a broad user base
- C2 - Development Timeline - The project must be completed within a specified time frame to meet the launch data objectives

2. Create scenarios - Hannah

As-Is Scenario:

Scenario	Late Payment
Participating Actors	Hannah: CollegeStudent
Flow of Events	<ol style="list-style-type: none">1. Hannah comes home from a long day of classes and goes to check her mailbox at her apartment complex.2. She flips through her mail and sees she has received a notice for a late payment on her credit card bill.3. She thinks this can't be right as she could've sworn she set up the payment already.4. Hannah calls her bank to confirm if the payment charge ever came out or not, but unfortunately, it did not.5. She realizes she must've slipped up and forgotten with the craziness of her school and work schedule.6. Hannah goes to her credit card company's website and pays the bill along with the late fee she is now forced to pay.

Visionary Scenario 1:

Dream Vacation: Creating a Budget

Sarah has just received a promotion from her employer for all the hard work she has put in over the past year. Summer is a few months away and she starts thinking about that dream vacation to Venice, Italy that she has had in the back of her mind for as long as she can remember.

She decides that she wants to make this vacation a reality as a treat to herself for working so hard. She opens up the Finance Tracker app that she has been using for the past few months to track her expenses. She decides she wants to create a budget so that she can plan accordingly for the cost of the trip and stay on track with her financial goals. She creates a budget and selects to have its time frame from now until she leaves for the trip in a few months. She creates categories for all the expenses of the trip things such as her flight, hotel, transportation services, etc.

Months pass and Sarah has finally arrived in Venice, she sticks to her specified budget and has a phenomenal time. Upon returning home she is so happy that she has finally been able to live out her dream vacation while also staying financially responsible.

Visionary Scenario 2:

Financial Practices: Opening a Retirement Account

Andrew has recently started his first job upon graduating with his bachelor's degree. His parents have been urging him about the importance of opening up a retirement account early on in his career. However, he is not sure where to even start, he has heard of multiple different types of retirement accounts such as Roth IRAs and 401k plans but he has no idea which one is best for him.

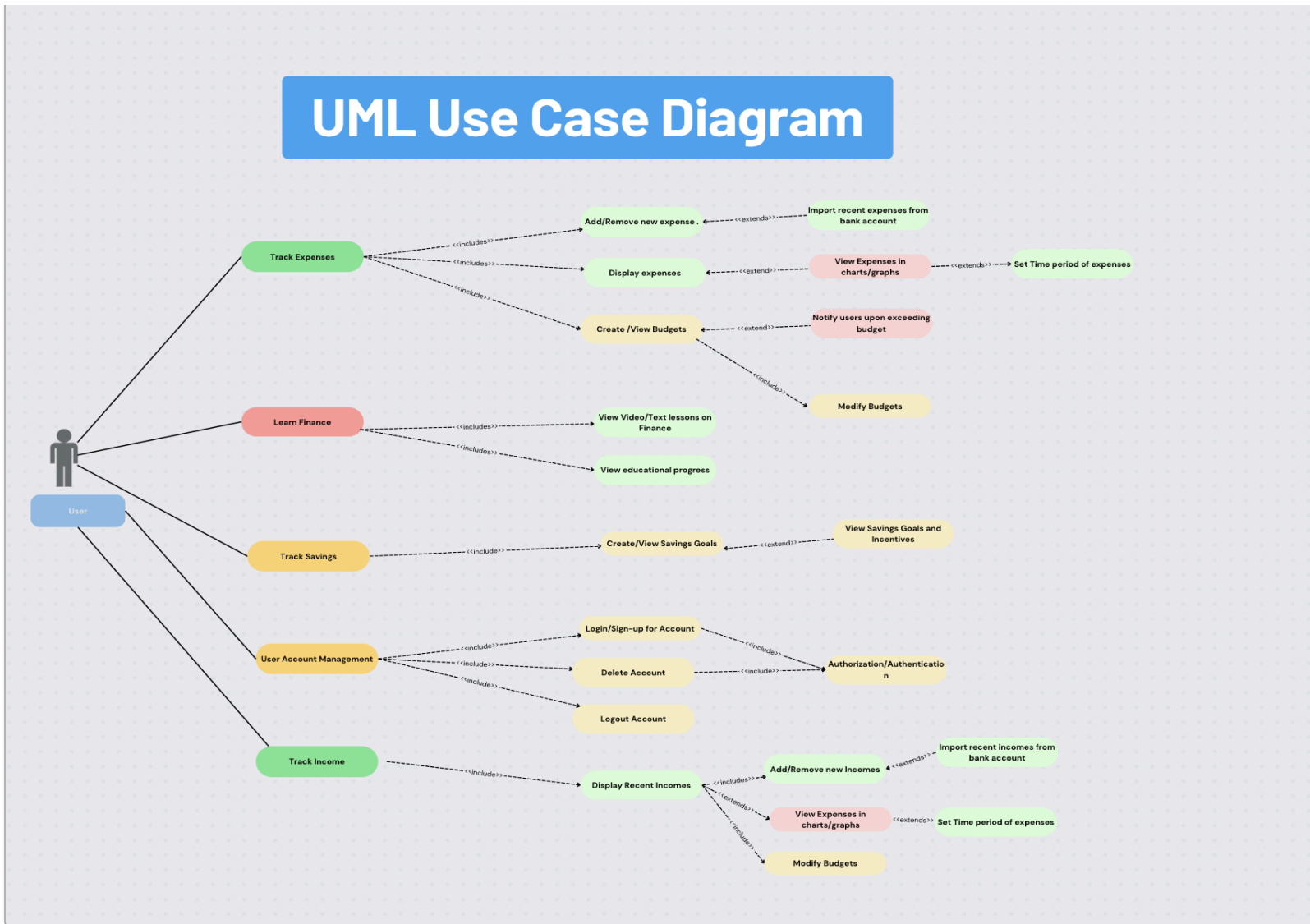
He remembers seeing that his Finance Tracker app has educational resources on financial literacy as well as personalized financial insights. He decides to first start with the educational resources, aiming to learn more about the different types of retirement accounts along with their similarities and differences. Upon learning about these accounts he has a pretty good understanding of how they work, but he is still not entirely sure which account is best for his personal financial needs. He decides to try the personalized financial insights feature to see their advice and recommendations.

After all the information he has received Andrew decides to open up a 401k account through his employer. He is relieved at how smoothly the process went because of all the knowledge and insight he gained through the help of his Finance Tracker app.

3. Functional model (UML use case diagram) - Erasto

- Your functional model may include an additional textual description if necessary

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4. Two formalized **use cases** (textual description) - **Mark**

- Select the 2 *most expressive* use cases from your functional model
- Provide formal textual use cases with a flow of events that includes actor and system steps, and, if useful, entry/exit conditions and quality requirements

Use Case 1:

Use Case Name	Track Expenses
Participating Actors	Finance Tracker user
Flow of Events	<ol style="list-style-type: none">1. The user wants to record an expense.2. The user opens the finance tracker system.3. The user navigates to the “Track Expenses” feature within the system.<ol style="list-style-type: none">4. The system displays a list of recent expenses.5. The user chooses to add a new expense.<ol style="list-style-type: none">6. The system displays an area for the user to enter the expense details.7. The user enters the expense details and submits the expense for tracking.<ol style="list-style-type: none">8a. The system updates the user’s expense records with the new entry.9a. The system recalculates the user’s current balance against their budget and proceeds.10. The system displays an updated overview of the user’s expenses with the new entry. <p><i>Alternative path 1:</i></p> <ol style="list-style-type: none">8b. The system detects invalid input and prompts the user to correct the details. <p><i>Alternative path 2:</i></p> <ol style="list-style-type: none">9b. The system recalculates the user’s current balance and sends a notification warning the user of overspending.
Entry Conditions	<ul style="list-style-type: none">• The user must have an active account with the finance tracker system.• The user must be logged in to access the “Track Expenses” feature.
Exit Conditions	<ul style="list-style-type: none">• The user’s expense data is successfully updated and saved within the system.
Quality Requirements	<ul style="list-style-type: none">• It should take at most three clicks to enter a new expense.

	<ul style="list-style-type: none"> • All financial data must be encrypted and securely stored. • The system should process and update expense entries promptly in at most five seconds. • The “Track Expenses” feature should be down for maintenance for no longer than one hour each week.
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Use Case 2:

Use Case Name	Learn Finance
Participating Actors	Finance Tracker user
Flow of Events	<ol style="list-style-type: none"> 1. The user wants to learn financial responsibility. 2. The user opens the finance tracker system. 3. The user navigates to the “Learn Finance” feature within the system. <ol style="list-style-type: none"> 4. The system shows a list of financial education topics. 5. The user selects a topic of interest from the list. <ol style="list-style-type: none"> 6. The system plays an interactive video related to the selected topic, tracking the user’s progress through the educational content. 7a. The user finishes the video, passes a quiz, and exits the selected topic. <ol style="list-style-type: none"> 8a. The system updates the list of financial education topics by marking the recent topic as passed. <p><i>Alternative path:</i></p> <ol style="list-style-type: none"> 7b. The user finishes the video, fails the quiz, and exits the selected topic. <ol style="list-style-type: none"> 8b. The system updates the list of financial education topics by marking the recent topic as failed.
Entry Conditions	<ul style="list-style-type: none"> • The user must have an active account with the finance tracker system. • The user must be logged in to access the “Learn Finance” feature.
Exit Conditions	<ul style="list-style-type: none"> • The user’s education progress is successfully updated and saved within the system.
Quality Requirements	<ul style="list-style-type: none"> • The educational content must be engaging, easy to understand, and accessible for users with varying levels of financial knowledge. • The system should personalize educational recommendations

	<p>based on the user's financial goals and prior activity within the system.</p> <ul style="list-style-type: none">• Security measures must ensure user data related to learning progress and personal financial goals are kept confidential.
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