Cairo University
Faculty of Computers and Artificial Intelligence

CS251

Intro. to Software Engineering

Software Requirements Specifications

Version 1.0

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CS251: Phase 1 – Three Bugs
Project: InvestEase

Software Requirements Specifications

Contents

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CS251: Phase 1 – Three Bugs
Project: InvestEase

Software Requirements Specifications

Document Purpose and Audience

Purpose

This document provides an analysis of the personal investment management app market, comparing global practices with the Egyptian and Arab markets. It identifies gaps in the local market and proposes a solution—a comprehensive investment management platform tailored to the needs of regional users.

Audience

- Entrepreneurs & Startups
- Business Strategists & Consultants

Introduction

Software Purpose

The purpose of the software is to provide a **comprehensive personal investment management platform** that enables users to **track, analyze, and optimize** their financial assets. It integrates various asset types (stocks, real estate, savings, crypto, etc.), offers **AI-driven insights**, and supports **goal-based investment planning**. The system ensures **real-time financial data synchronization** through bank and brokerage integrations, helping users make informed investment decisions while maintaining security and privacy.

Software Scope

The software focuses on **portfolio management, financial tracking, and investment optimization**. Key features include **multi-asset tracking, net worth & ROI calculation, goal-based investing, risk analysis, and AI-driven insights**. It integrates with **banks and brokerages for real-time updates**, provides **data visualization tools**, and ensures **strong security measures** for user data protection.

Definitions, acronyms, and abbreviations

Software Requirements Specifications

Acronym	Definition
AI (Artificial Intelligence)	The use of machine learning and data analytics to provide insights and automation.
API (Application Programming Interface)	A set of rules that allows software applications to communicate with each other.
ETF (Exchange-Traded Fund)	A type of investment fund that holds a diversified portfolio of assets and trades on stock exchanges.
FinTech (Financial Technology)	Technology-driven solutions for banking, investments, and financial services.
KPI (Key Performance Indicator)	A measurable value that indicates how effectively objectives are being met.
Net Worth	The total value of a person's assets minus their liabilities.
OOP (Object-Oriented Programming)	A programming paradigm based on the concept of objects and classes.
Plaid API	A financial data aggregation tool that connects apps to bank accounts.
Portfolio	A collection of financial investments such as stocks, bonds, real estate, and cash.
ROI (Return on Investment)	A metric used to evaluate the profitability of an investment.
Two-Factor Authentication (2FA)	A security measure requiring two forms of identity verification for account access.

Requirements

Functional Requirements

Software Requirements Specifications

- **User Registration & Authentication**
  - Users must be able to register using email, phone number, or social media.
  - Two-factor authentication (2FA) must be available for added security.
  - Users can reset their password via email or SMS**.**
- **Portfolio Management**
  - Users can add, edit, or remove assets (stocks, real estate, crypto, etc.).
  - The system will calculate and display net worth and portfolio performance in real-time.
  - Users can set and track financial goals.
- **Investment Insights & AI Recommendations**
  - AI will provide personalized risk assessments and diversification suggestions.
  - Historical performance charts and future trend predictions will be available.
- **Integration with Financial Services**
  - The system will connect with banks and brokerage accounts via API for real-time data updates.
  - Users can import and sync financial transactions.
- **Reporting & Visualization**
  - Users can generate financial reports (monthly, quarterly, yearly).
  - Interactive charts and graphs for investment performance.
- **Security & Privacy**
  - All user data must be encrypted.
  - Users must have control over data-sharing permissions.

Non Functional Requirements

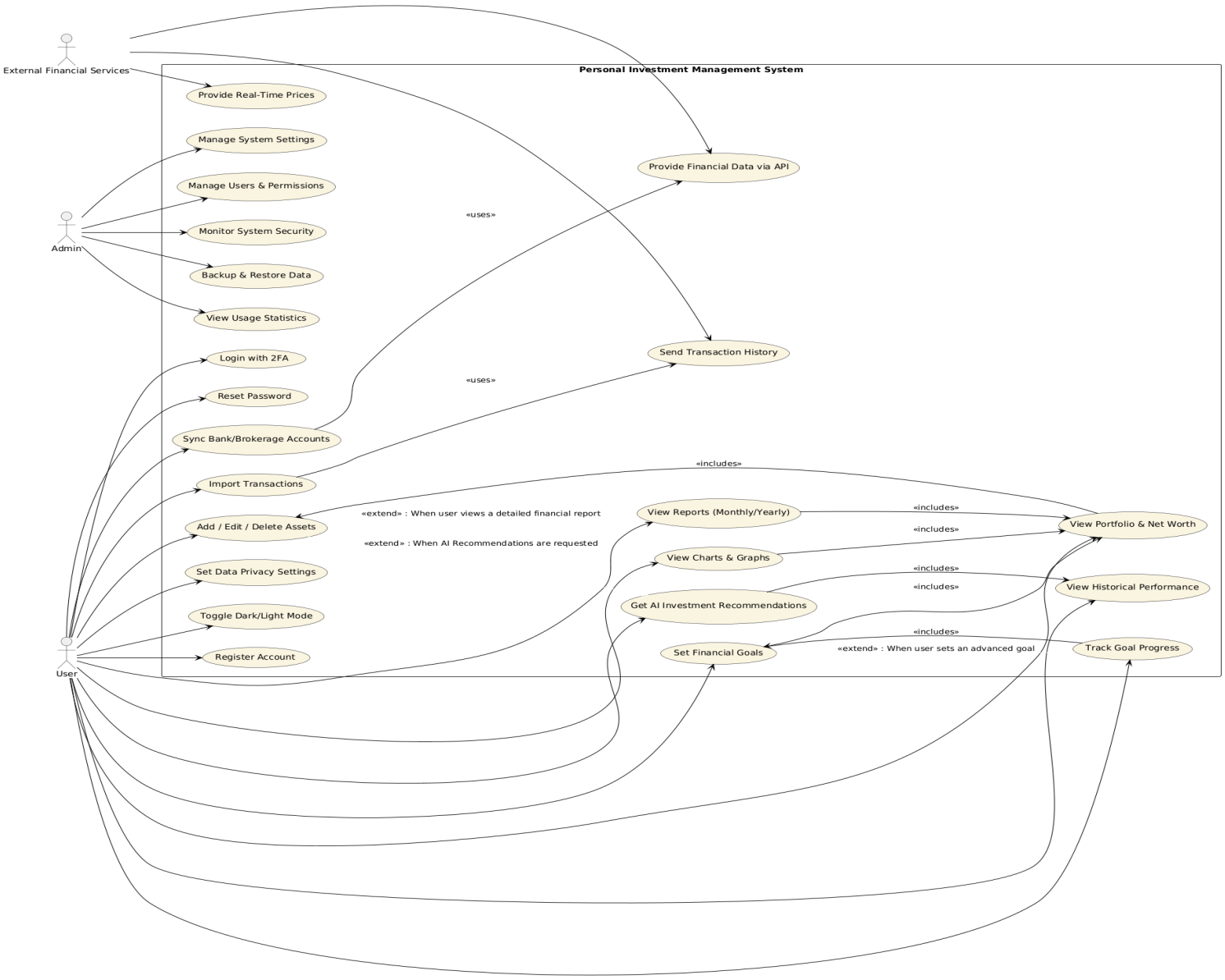
- **Performance**
  - Portfolio updates and net worth calculations must be completed **within 2 seconds**.
  - Financial data retrieval from external sources must not exceed **5 seconds**.
  - System response time for user requests should not exceed **3 seconds**.
  - The system must support at least 10,000 concurrent users.
- **Security**
  - End-to-end encryption for user financial data.
  - Secure authentication using OAuth2 or biometric authentication.
- **Usability**
  - The UI must be intuitive, with a maximum of 3 clicks to reach key features.
  - The app must support both dark and light mode.

Software Requirements Specifications

- **Scalability**
  - The system should support **at least 10,000 active users simultaneously**.
  - It should handle **up to 50,000 financial transactions per minute**.
  - The cloud-based architecture should allow automatic scaling when demand increases.
- **Reliability & Availability**
  - System uptime must be 99.9% with automated failover mechanisms.
  - Data backups must be performed daily.
- **Portability**
  - The system must work on web (React), iOS (Swift), and Android (Kotlin/Flutter).
  - Must support multiple screen sizes (responsive design).
- **Maintainability**
  - Code must be modular and follow industry best practices for easy updates.
  - Automated unit and integration tests must cover 80% of the codebase.

Software Requirements Specifications

System Models



Use Case Model

Software Requirements Specifications

Actor	Role
User	Registers, logs in, manages portfolio, sets investment goals, views reports, tracks progress, receives AI recommendations, syncs accounts, imports transactions, views charts & graphs, manages privacy settings, and toggles dark/light mode.
Admin	Manages system settings, user permissions, monitors system security, backs up and restores data, and views usage statistics.
External Financial Services	Provides financial data via API, real-time stock prices, and sends transaction history to the system.

Software Requirements Specifications

Enriched User Stories

- **User Story #1**

User Story ID	US #1
User Story Name	**User Authentication & Login**
Actors	Investor, System
Description	As an investor, I want to securely log into my account using my credentials so that I can access my investment dashboard and .manage my assets
Per condition	• The user has already registered an account. • The system is connected to the authentication database.
Post condition	• The user is successfully logged in and redirected to the dashboard. • If credentials are incorrect, the system displays an error message.
Acceptance Criteria	**Given** that I am on the login page, **When** I enter my username and password correctly and click "Sign In," **Then** the system verifies my credentials and redirects me to my dashboard. **If** the credentials are incorrect, an error message is displayed.

Software Requirements Specifications

- **Scenarios**

Normal Scenario : User Login

Actor action	System Response
User enters **username** and **password**.	System captures the input credentials.
User clicks **submit**.	System **validates credentials** against stored records.
—	System **verifies** if the user data exists and has access.
–	If credentials are valid, the system redirects the user to the dashboard.
–	User successfully logs in.

Exceptional Scenario : Invalid Login Attempt

Actor Action	System Response
User enters an incorrect username or password.	System captures the input credentials.
User clicks **Submit**.	System **validates credentials** against stored records.
–	System detects a mismatch.
–	System **rejects login** and displays an **error message** "Invalid username or password. Please try again."

Software Requirements Specifications

- ## Screen Design

1. **Login Page** (Fields: Username, Password, Login Button, Forgot Password Link)
2. **Dashboard** (Displays user's investments, net worth, and recent transactions)

- ## Data Dictionary:

Element Label	Type/Length	Data Validation / Business Rule
Username	String (50)	Required, must be unique
Password	String (50)	Required, must be encrypted
Email	String (100)	Required, must be a valid email format
Phone Number	String (15)	Optional, must follow international phone format

Software Requirements Specifications

- **User Story #2**

User Story ID	US #2
User Story Name	**Portfolio Management**
Actors	Investor, System
Description	As an **Investor**, I want to be able to add, edit, and remove assets from my portfolio so that I can manage my investments .efficiently
Per condition	• The user is logged into their account. • The system allows asset management operations.
Post condition	• The user's portfolio is updated based on their actions. • Changes are saved and reflected in the dashboard.
Acceptance Criteria	**Given** that I am on the portfolio management page, **When** I add a new asset and provide all necessary details, **Then** the system saves the asset and updates my portfolio. **Given** that I want to edit an asset, **When** I update its details and save the changes, **Then** the system modifies the asset and reflects the changes in the portfolio. **Given** that I want to remove an asset, **When** I confirm the deletion,

Software Requirements Specifications

	Then the system removes the asset and updates the portfolio accordingly.

Software Requirements Specifications

- **Scenarios**

Normal Scenario : Adding an Asset

Actor action	System Response
User selects "Add Asset".	System displays asset input fields.
User fills in asset details and clicks "Save".	System validates input .
–	System saves the asset successfully, updates the portfolio and reflects Changes on the dashboard.

Exceptional Scenario : Missing Required Fields

Actor Action	System Response
User attempts to save an asset with missing details.	System detects incomplete input.
–	System displayed an error message: ***"Please fill in all mandatory fields."***.

Software Requirements Specifications

Normal Scenario : Editing an Asset

Actor action	System Response
User selects an asset to edit.	System loads the asset details.
User modifies the details and clicks "Save".	System validates and updates the asset information .
_	Changes are saved, and the updated asset is reflected in the portfolio.

Exceptional Scenario : Invalid Edits

Actor Action	System Response
User enters invalid data while editing an asset (e.g., negative value for asset price).	System detects invalid input.
_	System displayed an error message: ***"Invalid input. Please enter correct values."***.

Normal Scenario : Removing an Asset

Actor action	System Response
User selects an asset to remove.	System prompts a confirmation message.
User confirms the removal.	System deletes the asset from the portfolio .
_	System updates the portfolio and reflects Changes on the dashboard.

Software Requirements Specifications

Exceptional Scenario : Canceling Asset Removal

Actor Action	System Response
User selects an asset to remove.	System prompts a confirmation message.
User cancels the deletion.	System keeps the asset unchanged in the portfolio.

- **Screen Design**

➔ **Portfolio Management** (Displays asset list and buttons for adding/editing/removing assets)
➔ **Add/Edit Asset Form** (Fields: Asset Name, Type, Value, Date Acquired, Save Button)

- **Data Dictionary:**

Element Label	Type/Length	Data Validation / Business Rule
Asset Name	String (100)	Required
Type	Dropdown	Required (Stocks, Bonds, Real Estate, etc.)
Value	Decimal	Required, must be positive
Date Acquired	Date	Required, past or present date

Software Requirements Specifications

- **User Story #3**

User Story ID	US #3
User Story Name	**Transaction History**
Actors	Investor, System
Description	As an investor, I want to view a detailed transaction history so that I can track my investment activities and monitor my financial .performance
Per condition	• The user is logged into their account. • The system stores transaction records and maintains a structured history.
Post condition	• The user can see all past transactions in chronological order. • If no transactions exist, the system displays a message indicating no records found. • Users can filter and export transaction history for analysis.
Acceptance Criteria	**Given** that I am on the transaction history page, **When** I access my transactions, **Then** the system displays all my past transactions with relevant details, including date, type, and amount.

Software Requirements Specifications

- **Scenarios**

Normal Scenario : Viewing Transaction History

Actor action	System Response
User navigates to the transaction history page.	System loads and displays all transaction records in chronological order.
User scrolls through transactions.	System dynamically fetches and displays additional data as the user scrolls.
User applies filters (e.g., date range, transaction type).	System updates the displayed records based on the selected filters.
User exports transaction history.	System generates and downloads the transaction data in the selected format.

Exceptional Scenario : No Transactions Available/ No Matching Transactions After Filtering/ Exporting Without Transactions

Actor Action	System Response
User navigates to the transaction history page.	System checks for available records.
System finds no records.	System displays a message: "No transactions found."
User applies a filter that does not match any records.	System updates the display and shows "No transactions match the selected criteria."

Software Requirements Specifications

Actor Action	System Response
User attempts to export with no transactions available.	System prevents the action and displays an appropriate error message.

- **Screen Design : Transaction History Page:**

➔ Displays a list of transactions with columns for Date, Type, Amount, and Status.
➔ Includes filtering options (Date Range, Transaction Type, Status).
➔ Provides an export feature (CSV, PDF).
➔ Allows sorting by date, type, or amount.

- **Data Dictionary:**

Element Label	Type/Length	Data Validation / Business Rule
Transaction ID	String (50)	Required, unique identifier for each transaction
Date	Date	Required, must be a valid past or present date
Type	String (20)	Required (Buy, Sell, Deposit, Withdrawal, Transfer)
Amount	Decimal	Required, must be a positive number
Status	String (20)	Required (Completed, Pending, Failed)
Payment Method	String (50)	Optional, applicable for deposits/withdrawals (Bank Transfer, PayPal, Cryptocurrency)

Software Requirements Specifications

- **User Story #4**

User Story ID	US #4
User Story Name	Investment Performance Dashboard
Actors	Investor, System
Description	As an **Investor**, I want to view an investment performance dashboard so that I can analyze my portfolio's growth, returns, .and risk exposure in real-time
Per condition	• The user is logged into their account. • The system tracks and calculates investment performance data.
Post condition	• The user can see an overview of their portfolio performance. • The system updates and displays real-time performance metrics. • The user can apply filters to analyze different aspects of their investments.
Acceptance Criteria	**Given** that I am on the investment dashboard page, **When** I access my portfolio, **Then** the system displays key performance metrics such as total value, returns, asset allocation, and risk assessment. **Given** that I apply filters (e.g., date range, asset type), **When** I submit my selection, **Then** the system updates the displayed data accordingly.

Software Requirements Specifications

	Given that I click on a specific asset, **When** I view its details, **Then** the system provides an in-depth performance breakdown of that asset.

Software Requirements Specifications

- **Scenarios**

Normal Scenario : Viewing Portfolio Performance

Actor action	System Response
User navigates to the investment dashboard page.	System loads and displays key performance metrics.
User applies filters (e.g., date range, asset type).	System updates and refines the displayed data.
User clicks on an asset to view details.	System shows an in-depth performance breakdown of the selected asset.

Exceptional Scenario : No Investment Data Available

Actor Action	System Response
User navigates to the investment dashboard page.	System checks for available investment data.
–	System finds no records and displays: **"No investment data available."**

Software Requirements Specifications

- **Screen Design**

➔ Displays total portfolio value, returns, asset allocation, and risk assessment.
➔ Provides filtering options (**Date Range, Asset Type, Performance Metrics**).
➔ Allows clicking on an asset to view detailed analytics.

- **Data Dictionary:**

Element Label	Type/Length	Data Validation / Business Rule
Portfolio ID	String (50)	Required, unique identifier for each portfolio
Total value	Decimal	Required, must be a positive number
Return percentage	Decimal	Required, calculated as a percentage
Asset type	String (30)	Required (Stocks, Bonds, ETFs, Crypto, etc.)
Risk level	String (20)	Required (Low, Medium, High)

Software Requirements Specifications

- **User Story #5**

User Story ID	US #5
User Story Name	**Automated Investment Suggestions**
Actors	Investor, System
Description	As an investor, I want to receive automated investment suggestions based on my portfolio and market trends so that I can make .informed decisions
Per condition	• The user is logged into their account. • The system has access to the user's portfolio and market data.
Post condition	• The system generates personalized investment recommendations. • Users can review, accept, or dismiss suggestions.
Acceptance Criteria	**Given** that I am on the investment suggestions page, **When** the system analyzes my portfolio and market trends, **Then** it displays recommended investment opportunities. **Given** that I receive a suggestion, **When** I click on it, **Then** the system provides detailed insights on why it was recommended. **Given** that I do not want a particular suggestion, **When** I dismiss it, **Then** the system removes it from my recommendations.

Software Requirements Specifications

- **Scenarios**

Normal Scenario : Viewing Investment Suggestions

Actor action	System Response
User navigates to the investment suggestions page.	System loads and displays personalized recommendations.
User clicks on a suggestion.	System provides detailed insights and market analysis.
User dismisses a suggestion.	System removes the dismissed suggestion from the list.

Exceptional Scenario : No Suggestions Available

Actor Action	System Response
User navigates to the investment suggestions page.	System checks for available recommendations.
–	System finds no relevant suggestions and displays: **"No investment suggestions available at this time."**

Software Requirements Specifications

- **Screen Design**

➔ Displays AI-driven investment suggestions.
➔ Provides in-depth insights and analysis for each suggestion.
➔ Allows users to dismiss unwanted suggestions.

- **Data Dictionary:**

Element Label	Type/Length	Data Validation / Business Rule
Suggestion ID	String (50)	Required, unique identifier for each suggestion
Asset name	String (100)	Required, name of the suggested investment
Reason foe suggestion	Text	Required, must explain why the investment is recommended
Market trend	String (50)	Required, describes the trend (Bullish, Bearish, Neutral)

Software Requirements Specifications

- **User Story #6**

User Story ID	US #6
User Story Name	**Real-Time Market Data**
Actors	Investor, System
Description	As an investor, I want to access real-time market data so that I can .make informed investment decisions based on the latest trends
Per condition	• The user is logged into their account. • The system has access to live market data sources.
Post condition	• Users can see real-time updates on stock prices, cryptocurrency values, and other market indicators. • Data refreshes dynamically at regular intervals.
Acceptance Criteria	**Given** that I am on the market data page, **When** I access real-time market information, **Then** the system displays up-to-date stock prices, indices, and relevant financial data. **Given** that I apply filters (e.g., specific stocks, asset classes), **When** I submit my selection, **Then** the system updates and displays only relevant market data.

Software Requirements Specifications

User Story ID	US #6
	Given that I set alerts for specific assets, **When** the asset price reaches the alert threshold, **Then** the system notifies me accordingly.

- **Scenarios**

Normal Scenario : Viewing Market Data

Actor action	System Response
User navigates to the market data page.	System loads and displays real-time stock prices and market indicators.
User applies filters (e.g., specific stocks, asset types).	System updates and refines displayed data accordingly.
User dsets an alert for a specific stock price.	System monitors price changes and triggers an alert when conditions are met.

Exceptional Scenario : No Market Data Available

Actor Action	System Response
User navigates to the market data page.	System checks for available live data.

Software Requirements Specifications

Actor Action	System Response
–	System finds no data and displays: **"Real-time data is temporarily unavailable."**

- **Screen Design : Market Data Page**

➔ Displays real-time updates on stock prices, cryptocurrency values, and indices.
➔ Allows filtering by asset class and company.
➔ Provides options to set alerts for price changes.

- **Data Dictionary:**

Element Label	Type/Length	Data Validation / Business Rule
Stock Symbol	String (10)	Required, unique identifier for each stock
Current price	Decimal	Required, must be a positive value
Price Change	Decimal	Required, indicates change from the last closing price
Market trend	String (50)	Required (Bullish, Bearish, Neutral)

Software Requirements Specifications

- **User Story #7**

User Story ID	US#7
User Story Name	**Real-time Stock Alerts**
Actors	Investor, System
Description	As an **investor**, I want to **set price alerts for stocks** so that I can be notified when a stock reaches a specific price, allowing me to make timely investment decisions.
Per condition	• The user is logged into the system. • The system has access to real-time stock market data.
Post condition	• The system sends alerts when the stock reaches the set price. • The user receives the notification and can take appropriate action.

Software Requirements Specifications

User Story ID	US#7
Acceptance Criteria	**Given I want to track a specific stock,** **When I set a price alert,** **Then the system saves the alert and monitors the stock price.** **Given the stock price reaches the specified threshold,** **When the system detects this,** **Then it sends a notification to the user immediately.**

- **Scenarios**

Normal Scenario : Viewing Market Data

Actor action	System Response
The user opens the stock alert page.	**The system displays available stocks for alerts.**
The user selects a stock and sets a target price.	The system saves the alert and starts monitoring the stock.
The stock reaches the target price.	The system sends a notification to the user.

Software Requirements Specifications

Exceptional Scenario : No Market Data Available

Actor Action	System Response
The user enters an invalid stock symbol.	**The system displays an error message: "Stock not available."**

- **Screen Design : Stock Alert Page**

➔ Allows users to **set price alerts** for stocks.
➔ Displays a **list of active alerts** with options to edit or remove them.
➔ Sends **real-time notifications** when the target price is reached.

- **Data Dictionary:**

Element Label	Type/Length	Data Validation / Business Rule
Alert ID	String (50)	Required, unique identifier for each alert
Stock Symbol	String (10)	Required, stock symbol for tracking
Target Price	Decimal	Required, price at which the alert triggers

Software Requirements Specifications

Element Label	Type/Length	Data Validation / Business Rule
Notification Status	Boolean	Required, determines whether the alert has been sent

- **User Story #8**

User Story ID	US#8
User Story Name	**Portfolio Performance Analysis**
Actors	Investor, System
Description	As an **investor**, I want to **analyze my portfolio performance** to track total profits, losses, and trends, helping me make informed investment decisions.
Per condition	• The user has an investment portfolio with stock data. • The system can analyze historical data.

Software Requirements Specifications

User Story ID	US#8
Post condition	• The system displays an analysis of portfolio performance, including profits and losses. • The user can view trends and make informed decisions.
Acceptance Criteria	**Given I have an investment portfolio,** **When I open the performance analysis page,** **Then the system displays a detailed report of gains and losses.**

- **Scenarios**

Normal Scenario : Viewing Market Data

Actor action	System Response
The user opens the portfolio analysis page.	The system displays total gains, losses, and charts.

Exceptional Scenario : No Market Data Available

Software Requirements Specifications

Actor Action	System Response
The user does not have portfolio data.	**The system displays: "No sufficient data for analysis."**

- **Screen Design : Portfolio Analysis Page**

➔ Displays **portfolio performance charts**.
➔ Shows **total profits and losses**.
➔ Provides an **overview of investment trends**.

- **Data Dictionary:**

Element Label	Type/Length	Data Validation / Business Rule
Portfolio ID	String (50)	Required, unique identifier for each portfolio
Total Profit/Loss	Decimal	Required, shows total gains or losses
Performance Trend	String (50)	Required, indicates if performance is Bullish, Bearish, or Neutral

Software Requirements Specifications

- **User Story #9**

User Story ID	US#9
User Story Name	**AI-Powered Investment Insights**
Actors	Investor, System
Description	As an **investor**, I want to **receive AI-powered investment recommendations** based on my trading history and market trends so that I can make better investment decisions.
Per condition	• The system has access to the user's past trading data. • The system can analyze current market trends.
Post condition	• The system provides AI-generated recommendations tailored to the user's trading history.

Software Requirements Specifications

User Story ID	US#9
	• The user can view the rationale behind each recommendation and make decisions accordingly.
Acceptance Criteria	**Given I am looking for investment opportunities,** **When I open the recommendations page,** **Then the system provides AI-powered investment suggestions.**

- **Scenarios**

Normal Scenario : Viewing Market Data

Actor action	System Response
The user opens the AI recommendations page.	The system displays investment suggestions based on past trades and market trends.

Exceptional Scenario : No Market Data Available

Actor Action	System Response
The user has no previous trading history.	**The system displays: "Not enough data to generate recommendations."**

- **Screen Design : AI Investment Insights Page**

Software Requirements Specifications

- ➔ Provides **AI-based stock recommendations**.
- ➔ Displays **reasoning for each suggestion**.
- ➔ Offers **filters to customize recommendations**.

- **Data Dictionary:**

Element Label	Type/Length	Data Validation / Business Rule
Recommendation ID	String (50)	Required, unique identifier for each recommendation
Stock Symbol	String (10)	Required, stock suggested for investment
Confidence Score	Decimal	Required, indicates AI confidence level in the recommendation
Reasoning	String (255)	Required, provides the explanation behind the recommendation

- **User Story #10**

User Story ID	US #10
User Story Name	**Multi-Currency Support**
Actors	Investor, System
Description	As an investor, I want to manage my investments in multiple currencies so that I can accurately track my portfolio regardless of the currency..
Per condition	• The system supports updated exchange rates.

Software Requirements Specifications

User Story ID	US #10
	• The user has assets in multiple currencies.
Post condition	• Assets are displayed with automatic conversion between currencies. • The user can change the base currency and view the portfolio accordingly. • The system maintains historical exchange rates for accuracy.
Acceptance Criteria	**Currency Selection:** • The user can select a base currency from a predefined list. • The system saves the selected base currency as the default for future sessions. **Automatic Conversion:** • All asset values are automatically converted to the selected base currency using real-time exchange rates. • The system updates exchange rates at regular intervals (e.g., every 15 minutes). **Manual Update:** • The user can manually refresh exchange rates to get the latest values. **Historical Data:** • The system maintains historical exchange rates to provide accurate past valuations.

- ## Scenarios

Normal Scenario : Setting a Base Currency

Software Requirements Specifications

Actor action	System Response
User selects EUR as the base currency	System updates all asset values to EUR
User confirms selection	System saves the user's preference for future sessions

Exceptional Scenario: Unsupported Currency Selection

Actor action	System Response
User selects an unsupported currency	System displays an error message: "This currency is not supported."

- ### BDD Scenario
    - **Given** the user has assets in USD, EUR, and JPY,
    - **When** the user selects EUR as the base currency,
    - **Then** the system converts all asset values to EUR using the latest exchange rates,
    - **And** displays the total portfolio value in EUR.

- ### Screen Design :

➔ Currency Settings Page: Dropdown menu for selecting the base currency.
➔ Portfolio Page: Displays converted asset values based on the selected currency.

Software Requirements Specifications

- **Data Dictionary:**

Element Label	Type/Length	Data Validation / Business Rule
Base Currency	String (3)	Required, must be a valid ISO currency code
Exchange Rate	Decimal	Updated periodically, positive value
Asset Value	Decimal	Required, converted to the base currency

- **User Story #11**

User Story ID	US #11
User Story Name	**Risk Management & Alerts**
Actors	Investor, System
Description	As an investor, I want to receive notifications when the risk level of my portfolio exceeds a predefined threshold so that I can make timely investment decisions.
Per condition	• The user has set a preferred risk level. • The system analyzes risk based on asset distribution and market trends.
Post condition	• A notification is sent when the risk exceeds the set threshold. • The system provides recommendations for risk reduction.

Software Requirements Specifications

User Story ID	US #11
Acceptance Criteria	**Risk Level Setting:** • The user can set a risk tolerance level (e.g., low, medium, high). **Risk Assessment:** • The system evaluates the portfolio's risk based on asset classes and market volatility. **Notifications:** • The user receives an immediate notification (e.g., email, SMS) when the portfolio's risk level exceeds the set threshold. **Recommendations:** • The system provides actionable suggestions to mitigate risk, such as rebalancing assets.

- ## Scenarios

Normal Scenario : Risk Alert Triggered

Actor action	System Response
User sets risk tolerance to "Medium"	System saves the preference
Portfolio risk increases to "High"	System sends an immediate notification
User clicks on the notification	System redirects to the Risk Management Dashboard with risk mitigation suggestions

Exceptional Scenario: Unsupported Currency Selection

Software Requirements Specifications

Actor action	System Response
User checks risk dashboard but has no assets	System displays: "No risk data available."

- **BDD Scenario**
  - **Given** the user has set their risk tolerance to 'medium',
  - **And** the current portfolio risk is assessed as 'high',
  - **When** the system detects this discrepancy,
  - **Then** the user receives a notification about the elevated risk level,
  - **And** the system suggests reallocating certain assets to lower-risk options.

- **Screen Design :**

➔ **Risk Dashboard**: Displays portfolio risk level, recommended actions, and risk trend graphs.

- **Data Dictionary:**

Element Label	Type/Length	Data Validation / Business Rule
Risk Level	String (10)	Required, values: Low, Medium, High
Alert Status	Boolean	True if an alert is active
Suggested Action	String (255)	Optional, provides risk mitigation recommendations

Software Requirements Specifications

- **User Story #12**

User Story ID	US #12
User Story Name	**Social Trading & Community Insights**
Actors	Investor, System
Description	As an investor, I want to follow successful investors and view their investment strategies so that I can learn from their experiences.
Per condition	• The user has an active account. • Other investors share their strategies publicly.
Post condition	• The user can follow specific investors. • The user can view statistics and trending strategies.
Acceptance Criteria	**Follow Feature:** • The user must be able to follow other investors by clicking a 'Follow' button on their profiles. **Strategy Access:** • Following an investor allows the user to view their shared investment strategies and performance metrics. **Trending Strategies:** • The system must showcase trending strategies based on community engagement and success rates.

Software Requirements Specifications

User Story ID	US #12
	Privacy Controls: • Investors must be able to control the visibility of their strategies (e.g., public, followers-only, private).

- **Scenarios**

  Normal Scenario : Following an Investor

Actor action	System Response
User clicks "Follow" on an investor profile	System adds the investor to the user's following list
User visits their followed investors page	User visits their followed investors page

  Exceptional Scenario: Unsupported Currency Selection

Actor action	System Response
User searches for an investor who does not exist	System displays an error message: "Investor not found."

- **BDD Scenario**
  - **Given** the user is logged into their account,
  - **And** navigates to the 'Community' section,
  - **When** the user clicks 'Follow' on a successful investor's profile,
  - **Then** the system adds that investor to the user's following list,

Software Requirements Specifications

- **And** the user gains access to the investor's shared strategies and performance data.

- **Screen Design :**

➔ **Community Page**: Lists top investors and their strategies.
➔ **Investor Profile**: Shows portfolio insights, past performance, and a "Follow" button.

- **Data Dictionary:**

Element Label	Type/Length	Data Validation / Business Rule
Investor ID	String (50)	Required, unique identifier
Strategy Visibility	Boolean	Determines if strategy is public or private
Followers Count	Integer	Number of followers the investor has
Performance Score	Decimal	Shows the investor's success rate

Software Requirements Specifications

System Navigation Map

Software Requirements Specifications

Tools

Figma for navigation map

Lucidchart for UML

Ownership Report

Student	Items he created
Mahmoud hosny	user stories 7,8,9 & 4 screens of system navigation map & Document purpose and audience & introduction
Menna Tallah Gamal	User Stories from 1 to 6 & 12 screens of system navigation map
Israa Abdelhaq	Definitions, acronyms, and abbreviations & Requirements & Software Scope & User Stories 10 , 11 , 12 & 3 screens of system navigation map