

# Software Requirements Specification for Financial Goal Planner

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# 1 Introduction

## 1.1 Purpose

The purpose of this Software Requirements Specification (SRS) is to outline the software requirements for the Financial Goal Planner application. It serves as a roadmap for developers, directing them on how to implement necessary features. Additionally, it assists the testing team in creating suitable Verification and Validation (V&V) plans and procedures to prove to the customer that the system adheres to this specification.

## 1.2 Scope

This document specifies the requirements for the following capabilities.

1. Goal Planner, including user interface and data requirements.
2. Analytics capabilities
3. Expense Tracking
4. Financial Risk Monitoring and Alerting Capabilities

## 1.3 Definitions

Table 1 Acronyms and Definitions

BDD: Block Definition Diagram.

SRS: Software Requirements Specification.

UML: Unified Modeling Language.

V&V: Verification and Validation.

## 1.4 References

1. IEEE Std 830-1998 - IEEE Recommended Practice for Software Requirements Specifications - Revision of IEEE Std 830-1993

### 1.5 Overview

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 organising information by feature is followed.

## 2 Overall Description

### 2.1 Product Perspective

The financial goal planner application serves as a personal finance assistant, providing a user-centric platform for individuals to set, manage, and track their financial goals. It integrates seamlessly into the user's financial ecosystem, offering features such as expense tracking, budget creation, investment monitoring, and customised financial recommendations. The application's intuitive interface is designed to encourage regular interaction, empowering users with real-time data and analytics to make informed financial decisions. By fostering financial literacy and offering tools for risk assessment and goal adjustment, the product positions itself as an indispensable resource for anyone looking to take control of their financial future.

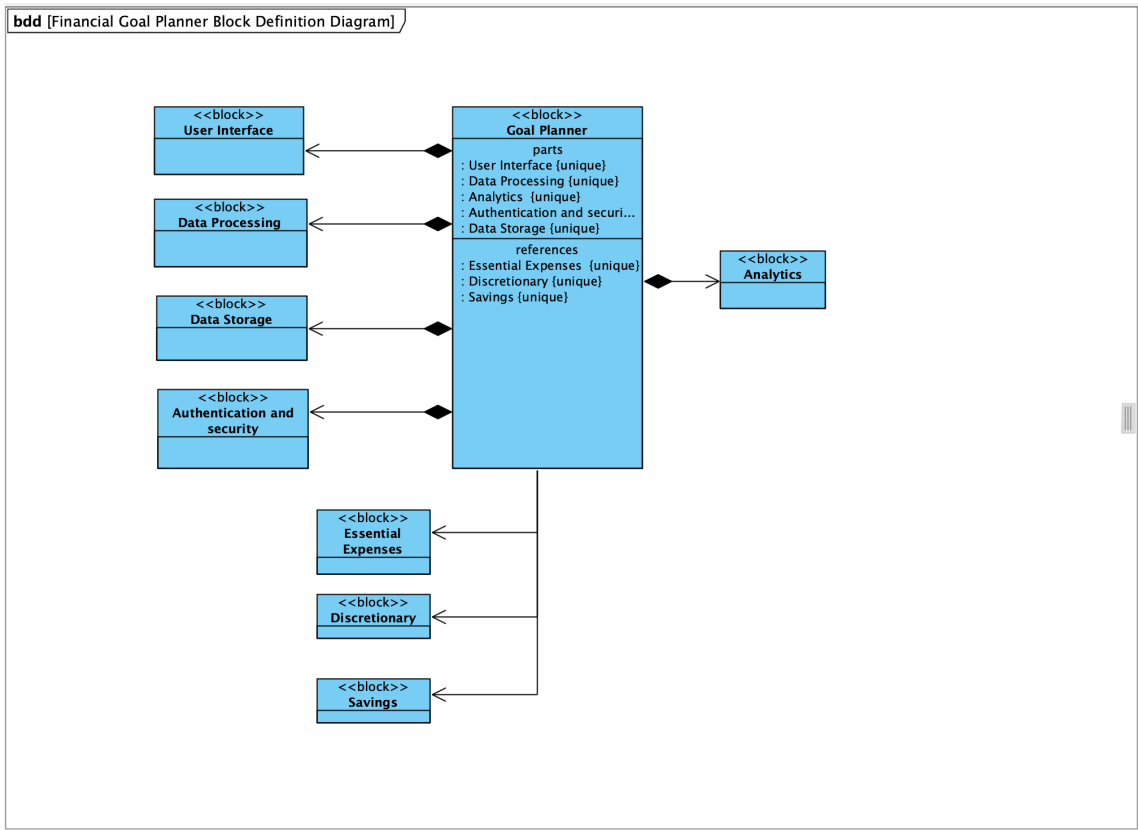


Figure 1 System Block Diagram

## 2.2 Product Functions

The below diagram depicts the use case diagram and users of the system, and the way they interact with the system.

uc [Financial Goal Planner Use Cases]

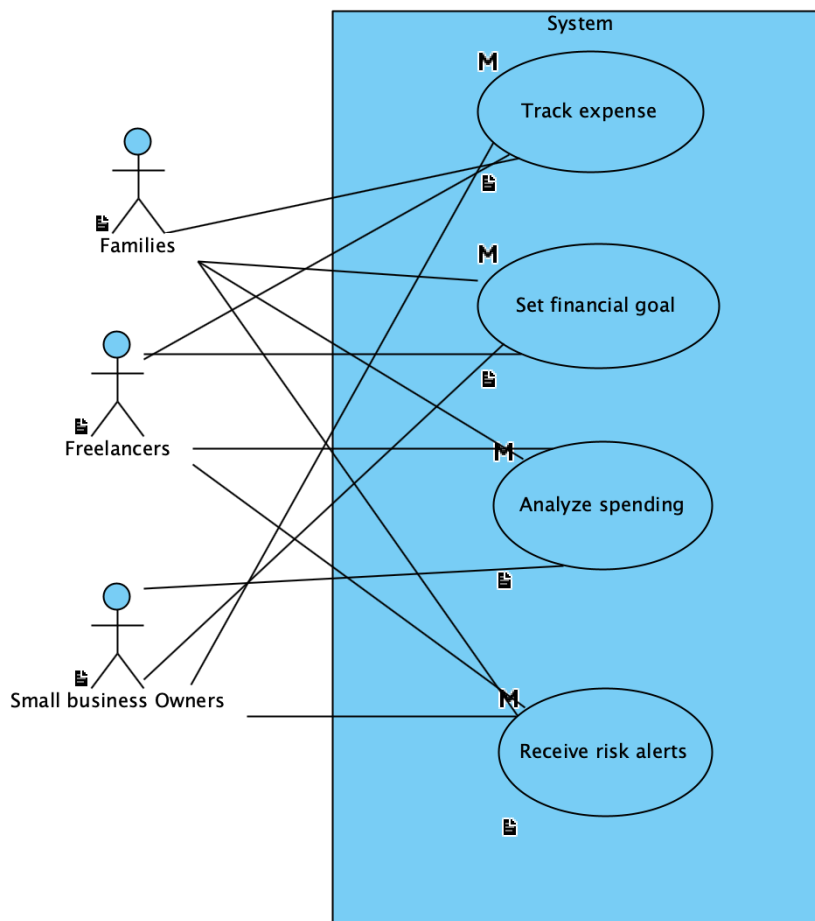


Figure 2 Financial Goal Planner Use Cases

## 2.3 Use Case Descriptions

- 2.3.1. Track Expense
- 2.3.2. Set Financial Goal
- 2.3.3. Analyse Spending
- 2.3.4. Receive Risk Alerts

## Primary Actors:

### 👤 1. Families

ID: AC01

The "Families" actor represents a group of users with familial relationships in the financial goal planner app. It facilitates collaborative financial planning, enabling shared goal setting, tracking, and decision-making. This actor ensures a personalised and user- friendly experience tailored to family-oriented financial objectives.

### 👤 2. Freelancers

ID: AC03

The "Freelancers" actor represents independent users in the financial goal planner app, facilitating personalized goal setting and tracking for their unique financial objectives.

### 👤 3. Small business Owners

ID: AC02

The "Small Business Owners" actor streamlines personalised financial planning in the app, facilitating goal setting and tracking tailored to their unique business objectives.

## Use Cases:

### ● 2.3.1. Track Expense

ID: UC01

Users can input and categorise their expenses, allowing the app to provide insights into spending habits and identify potential areas for saving.

#### a. Primary Actors

👤 Families, 👤 Freelancers, 👤 Small business Owners

### b. Details

Details	
<b>Intent</b>	Provides users to track financial expenses.
<b>Scope</b>	Track Expense
<b>Primary Actor</b>	Families, Freelancers, Small business owners
<b>Preconditions</b>	Users should have access to the expense tracking feature within the app.
<b>Postconditions</b>	The recorded expenses are successfully saved and can be viewed in the user's expense history.
<b>Implementation status</b>	N/A

### c. Scenarios

- Everyday Expense Tracking: Users log daily purchases like groceries and transport, categorised automatically.
- Monthly Budget Monitoring: Users set budgets and receive alerts when nearing limits, helping with saving goals.

## 2.3.2. Set Financial Goal

ID: UC02

Users can express their financial aspirations for the year in a way that feels uniquely personal. By inputting their goals, individuals can create a tailored roadmap, whether it's saving for a dream vacation, investing in future plans, or managing debt, bringing stability to their financial journey.

### a. Primary Actors

👤 Families, 👤 Freelancers, 👤 Small business Owners

### b. Details

Details	
<b>Intent</b>	Users can express their financial aspirations for the year in a way that feels uniquely personal.
<b>Scope</b>	Set Financial Goal

<b>Primary Actor</b>	Families, Freelancers, Small business owners
<b>Preconditions</b>	The login system is working correctly and the user is able to navigate to the set goals section.
<b>Postconditions</b>	User is able to set goals and view them.
<b>Implementation Status</b>	N/A

### c. Scenarios

- This scenario begins when a new user registers or log in to the Financial Goal Planner app.
- Upon logging in users are directed to the dashboard, where they can access various features.
- Users initiate the process by selecting the "Set Financial Goals" option from the dashboard.
- Saving for a Specific Goal: User sets a goal with a deadline, tracks progress, and stays motivated.

## 2.3.3. Analyse Spending

ID: UC03

The system provides users to analyse financial expenses, advice, and tips.

### a. Primary Actors

👤 Families, 👤 Freelancers, 👤 Small business Owners

### b. Details

Details	
<b>Intent</b>	Provides users to analyse financial expenses.
<b>Scope</b>	Analyse Spending
<b>Primary Actor</b>	Families, Freelancers, Small business owners
<b>Preconditions</b>	Users can correctly analyse the expenses.
<b>Postconditions</b>	Users have enriched their financial expenses according to their monthly/yearly expenditure.



<b>Implementation status</b>	N/A
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### c. Scenarios

- Category-wise Spending Analysis: User views detailed breakdowns of expenses, adjusts budget based on insights.
- Trend Analysis Over Time: User tracks spending trends over a year, adjusts habits to save more.

## 2.3.4. Receive Risk Alerts

ID: UC04

Users can input and categorise their expenses, allowing the app to provide alerts of their spending habits and identify potential areas for saving. The system notifies users about potential risk alerts for their expenses

### a. Primary Actors

👤 Families, 👤 Freelancers, 👤 Small business Owners

### b. Details

Details	
<b>Intent</b>	Alerts users about potential risks involved in their expenses.
<b>Scope</b>	Receive Risk Alerts
<b>Primary Actor</b>	Families, Freelancers, Small business owners
<b>Preconditions</b>	Budget alerts are triggered as per user-defined limits
<b>Postconditions</b>	Users should be able to modify their budget.
<b>Implementation status</b>	N/A

### c. Scenarios

- Unusual Spending Patterns: User receives alerts for unexpected spending spikes, verifies transactions.
- Approaching Budget Limits: User gets alerts when nearing budget limits, adjusts spending accordingly.

## 2.4 User Characteristics

### Families

- Characteristics for Track Expense: Look for an easy way to categorise and monitor household expenses across various categories (groceries, utilities, education, etc.) to maintain a balanced budget.
- Characteristics for Set Financial Goal: Interested in setting up long-term and short-term financial goals such as saving for vacations, children's education, and retirement with progress tracking.
- Characteristics for Analyse Spending: Seek insights into spending patterns to identify areas for cost-saving, ensuring financial stability for the family.
- Characteristics for Receive Risk Alerts: Require alerts for unusual spending or when nearing set budget limits to prevent overspending and maintain financial health.

### Freelancers

- Characteristics for Track Expense: Need to differentiate personal and business expenses easily, tracking all transactions meticulously for tax purposes and financial management.
- Characteristics for Set Financial Goal: Aim to establish clear financial objectives such as saving for a rainy day fund, retirement, and major purchases, with the flexibility to adjust as income fluctuates.
- Characteristics for Analyse Spending: Require detailed analysis of spending to optimise tax deductions and manage business costs effectively.
- Characteristics for Receive Risk Alerts: Benefit from receiving notifications about financial risks such as irregular income patterns or tax liabilities to take preemptive action.

### Small Business Owners

- Characteristics for Track Expense: Require comprehensive expense tracking that integrates with their accounting systems for real-time financial oversight.
- Characteristics for Set Financial Goal: Focus on setting business growth objectives, including capital investment, expansion, and savings for operational expenses.
- Characteristics for Analyse Spending: Interested in detailed spending analysis to uncover cost-saving opportunities and optimise operational efficiency.
- Characteristics for Receive Risk Alerts: Need alerts for financial risks that could impact business operations, such as cash flow shortages, unexpected expenses, or economic downturns.

## 2.5 Constraints

These are defined specifically in Section 3.

## 3 Specific Requirements

### 3.1 Overview

This financial goal planner app is designed to assist users in managing their finances effectively, offering modern features that cater to the needs of Families, Freelancers, and Small Business Owners. The app will include functionalities such as the ability to track expenses, set financial goals, analyse spending patterns, and receive alerts on financial risks, all accessible through a user-friendly interface on both iOS and Android platforms.

The app will be equipped with secure cloud connectivity, ensuring that users' financial data is safely stored and accessible from any device. Advanced analytics will provide personalised insights into spending habits, helping users make informed decisions about their finances. For added user convenience, the app will feature notifications for important financial milestones and risks, such as approaching budget limits or irregular spending patterns, directly on the user's mobile device.

Security measures, including encryption and multi-factor authentication, will protect users' information and transactions, ensuring a secure financial management experience. The software behind the app will be responsible for the seamless integration of these features, offering a comprehensive tool for financial planning and monitoring.

## 3.2 Interface Requirements

### 3.2.1 User Interfaces

3.2.1.1 The user interface **shall** provide users with a clean, intuitive, and responsive design accessible on mobile devices and desktops.

3.2.1.2 The interface **shall** support interactive elements such as sliders, dropdown menus, and input fields for entering financial goals, budgets, and expenses.

3.2.1.3 The user interface **shall** include visualisations such as charts, graphs, and progress bars to display financial data, goal progress, and budget allocations.

3.2.1.4 The financial planner app **shall** offer a customizable dashboard where users can prioritise and view key financial metrics and goals at a glance.

### 3.2.2 Hardware Interfaces

3.2.2.1 The app **shall** be compatible with smartphones and tablets running on iOS version 13.0 or later and Android version 10.0 or later.

3.2.2.2 The app **shall** support integration with wearable devices (e.g., smartwatches) for notifications and quick glances at financial updates.

3.2.2.3 The app **shall** be capable of utilising the device's biometric features (fingerprint scanner, face recognition) for secure authentication.

### 3.2.3 Software Interfaces

3.2.3.1 The app **shall** support OAuth 2.0 protocols for secure authentication with financial institutions and third-party services.

3.2.3.2 The app **shall** interface with RESTful APIs to fetch real-time financial data, including bank accounts, credit card transactions, and investment accounts.

3.2.3.3 The software **shall** utilise encryption protocols (such as AES, SSL/TLS) for secure data transmission and storage.

3.2.3.4 The app **shall** support data export and import functionalities in formats such as CSV, JSON, for easy integration with other financial tools and software.

### 3.2.4 Communications Interfaces

3.2.4.1 The app **shall** support push notifications via Firebase Cloud Messaging (FCM) for Android and Apple Push Notification service (APNs) for iOS devices to alert users about goal milestones, budget reminders, and financial tips.

3.2.4.2 The app **shall** use HTTPS protocols for secure communication over the internet.

3.2.4.3 The app **shall** offer the ability to integrate with email services for sending financial reports, alerts, and newsletters directly to the user's email account.

This structured approach ensures clarity in defining the technical and user-facing elements necessary for the development of a comprehensive and user-friendly financial goal planner app.

## 3.3 System Features

3.3.1 The system software supports the Use Cases described in Figure 2 Financial Goal Planner Use Cases.

### 3.3.1.1 Perform Diagnostics

#### 3.3.1.1.1 Introduction/Purpose of Feature

This feature will provide users with a comprehensive tool for setting, tracking, and achieving their financial goals. It will enable users to create specific, measurable, achievable, relevant, and time-bound (SMART) financial objectives, offering a personalised experience tailored to their financial situation.

#### 3.3.1.1.2 Stimulus/Response Sequence

3.3.1.1.2.1 User inputs financial goals (e.g., saving for a house)

3.3.1.1.2.2 The app analyses the user's financial data and current situation.

3.3.1.1.2.3 Based on the analysis, the app provides a customised financial plan, including steps and strategies to achieve the goals.

3.3.1.1.2.4 Users receive notifications on their progress and reminders for any actions needed to stay on track.

#### 3.3.1.1.3 Associated Functional Requirements

3.3.1.1.3.1 The app **shall** allow users to input and edit their financial goals, including details such as target amount and timeline.

3.3.1.1.3.2 The app **shall** integrate with users' financial accounts to monitor and analyze cash flows, expenses, savings, and investments relevant to their goals.

3.3.1.1.3.3 The software **shall** provide alerts or notifications when milestones are achieved or when adjustments are needed to meet the goals.

3.3.1.1.3.4 The software **shall** include features for budgeting and forecasting to assist users in planning their finances efficiently.

3.3.1.1.3.5 The app **shall** support secure synchronisation of financial data across devices, ensuring users have up-to-date information.

3.3.1.1.3.6 The software **shall** offer educational resources and tips tailored to the user's financial goals and situation, aiding in informed decision-making.

### 3.3.1.2 Financial Planner

#### 3.3.1.2.1 Introduction/Purpose of Feature

This feature will enable users to manage their budgets effectively, providing them with tools to track income and expenses, categorise spending, and identify opportunities for savings.

Following the principles outlined in the Budget Management Use Case, it aims to foster financial discipline and promote healthier financial habits.

### 3.3.1.2.2 Financial Goal Planner activity diagram

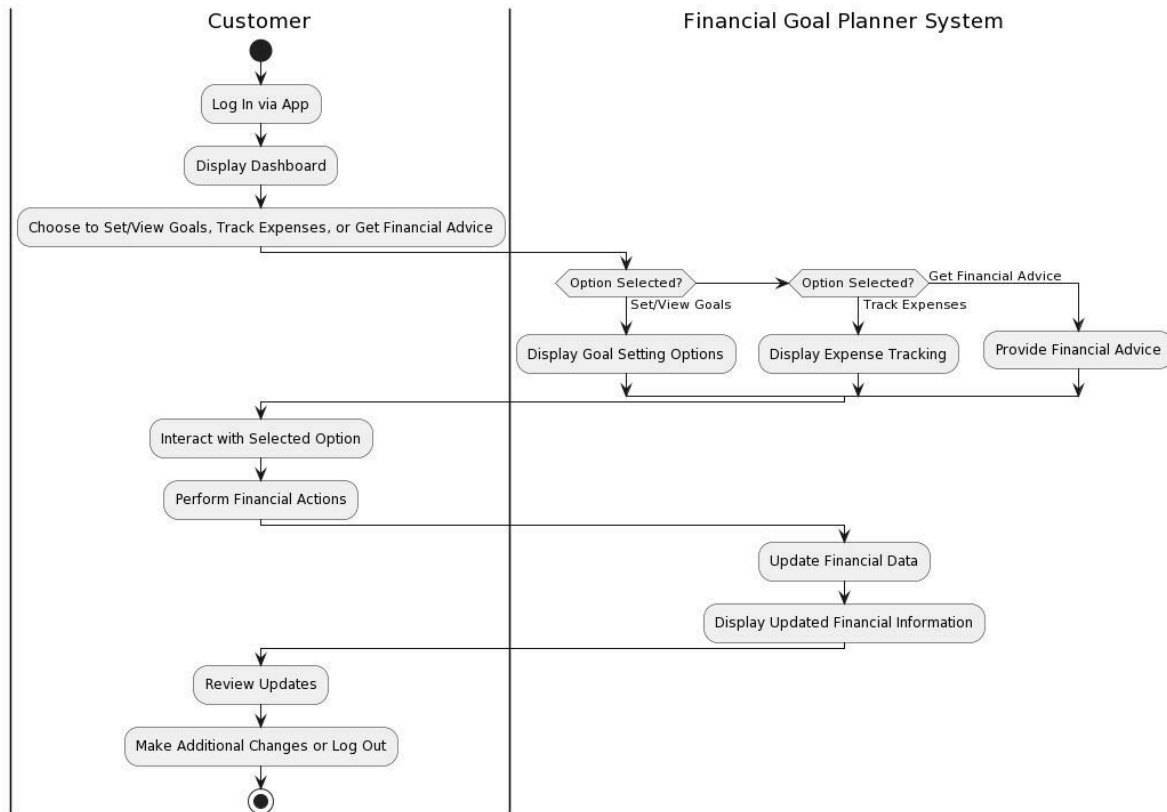


Figure 3 Activity Diagram

### 3.3.1.2.3 Associated Functional Requirements for Financial Goal Planner App

3.3.1.2.3.1 The app interface **shall** provide the user with the ability to set short-term financial goals (e.g., save for a holiday).

3.3.1.2.3.2 The app interface **shall** provide the user with the ability to set medium-term financial goals (e.g., buy a new car).

3.3.1.2.3.3 The app interface **shall** provide the user with the ability to set long-term financial goals (e.g., retire by age 60).

3.3.1.2.3.4 The app **shall** continually monitor and update the user's progress towards their financial goals.

3.3.1.2.3.5 The app interface **shall** provide the user with status during all operations, including, but not limited to:

1. Progress towards financial goals.
2. Total savings amount.

- 3.3.1.2.3.6 The app **shall** provide the ability for the user to manually adjust the amount allocated towards each goal.
- 3.3.1.2.3.7 The app **shall** select the correct financial strategy for reaching goals based on user input.
- 3.3.1.2.3.8 The app **shall** notify the user when a financial goal has been achieved.
- 3.3.1.2.3.9 The app **shall** provide the user with the ability to pause or stop contributions towards a specific goal.

## 3.4 Performance Requirements

- 3.4.1 The software **shall** update and display the user's progress towards their financial goals with at least 99% accuracy.
- 3.4.2 The app **shall** refresh the user's financial dashboard and reflect any changes within 2 seconds under normal operating conditions.
- 3.4.3 The system **shall** support simultaneous access for at least 10,000 users without degradation of performance.
- 3.4.4 The app **shall** perform automatic backup of user data at least once every 24 hours without impacting app performance.
- 3.4.5 The software **shall** process transactions and update the user's account balance and financial goal progress in real-time, not exceeding a delay of 1 second.
- 3.4.6 The system's underlying database **shall** handle transaction throughput of up to 1,000 transactions per second during peak usage.
- 3.4.7 The app **shall** ensure all financial calculations, such as budget projections and expense categorizations, are completed within 3 seconds of data entry.
- 3.4.8 The app **shall** load the initial user interface on the user's device within 5 seconds after app launch, assuming a standard mobile internet connection.
- 3.4.9 The app **shall** provide financial reports, such as monthly expense summaries, within 10 seconds upon user request.

## 3.5 Design Constraints

- 3.5.1 The app's software architecture **shall** be designed to utilize at most 50% of available resources under peak load to allow for scalability and unexpected spikes in usage. This includes spare capacity for memory, CPU utilization, and long-term storage such as disk space.
- 3.5.2 The app **shall** support multiple languages to cater to a diverse user base, ensuring inclusivity and broader market reach. Initial language support shall include:
  - 1. English
  - 2. Mandarin Chinese
  - 3. Spanish
  - 4. Hindi
  - 5. Arabic
  - 6. Portuguese

**3.5.3** The app **shall** be developed, tested, and maintained following industry standard ISO/IEC 25010:2011 (Systems and software engineering — Systems and software Quality Requirements and Evaluation (SQuaRE) — System and software quality models). This will ensure that the software meets high-quality standards for functionality, reliability, usability, efficiency, maintainability, and portability.

**3.5.4** The user interface design **shall** comply with the Americans with Disabilities Act (ADA) Standards for Accessible Design to ensure that the app is accessible to users with disabilities.

**3.5.5** All third-party integrations **must** adhere to the OAuth 2.0 protocol for authorization to ensure secure access to user data without sharing password details.

## 3.6 Software System Attributes

### 3.6.1 Security

3.6.1.1 The Financial Goal Planner app shall implement end-to-end encryption for all data transmission across the internet and internal interfaces to ensure the confidentiality and integrity of user data.

3.6.1.2 The app shall employ secure, encrypted storage for sensitive data on the device and back-end servers.

### 3.6.2 Compliance and Standards

3.6.2.1 The app's development and operations shall adhere to industry-standard cybersecurity frameworks, including the National Institute of Standards and Technology (NIST) cybersecurity framework and applicable Security Technical Implementation Guides (STIGs).

3.6.2.2 The software shall undergo regular security audits to maintain compliance with commercial standard Information Assurance (IA) controls.

### 3.6.3 Configuration Management

3.6.3.1 The app shall implement role-based access control (RBAC) to ensure that only authorized personnel can make configuration changes within the system.

3.6.3.2 System configurations shall be logged and tracked in a secure and auditable manner to maintain a record of changes and support accountability.

### 3.6.4 Diagnostics and Maintenance

3.6.4.1 The app shall provide secure, restricted access to diagnostic tools and maintenance functions to prevent unauthorised use and potential system compromise.

3.6.4.2 Maintenance operations, including diagnostic procedures, shall require multi-factor authentication and will be logged for audit purposes.



## Appendix A

### Use Case Template

GENERAL CHARACTERISTICS	
<b>Intent</b>	[a summary statement of the purpose of the use case]
<b>Scope</b>	[one of: company, name of system under design being considered black box, or another as appropriate] <[owning use case package]>
<b>Primary Actor</b>	[role name for the primary actor, <optional description>]
<b>Secondary Actors</b>	[role names of other actors (could be systems) relied upon to accomplish use case]
<b>Preconditions</b>	[what we expect is already the state of the world] <[pointer to precondition object model]>
<b>Trigger</b>	[the event that starts the use case]
<b>Success Post Condition</b>	[the state of the world upon successful completion] <[pointer to post condition object model]>
<b>Failed Post Condition</b>	[the state of the world if use case abandoned] <[pointer to post condition object model]>

## MAIN SUNNY DAY SCENARIO

Step	Action
S	[description in words of the main success scenario] <[pointer to scenario and or activity diagrams for the main success scenario]>
1	["This use case starts when ..." followed by the trigger.]
2	[step description... <"included" use case pointer>]
3	[step description... <"included" use case pointer>]
4	["This use case ends when ..." the final step in main success scenario.]

## MAIN RAINY DAY SCENARIO

Step	Action
S	[description in words of the main success scenario] <[pointer to scenario and or activity diagrams for the main success scenario]>
1	["This use case starts when ..." followed by the trigger.]
2	[step description... <"included" use case pointer>]
3	[step description... <"included" use case pointer>]
4	["This use case ends when ..." the final step in main success scenario.]

