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1 System Overview - Template

1.1 Introduction

This document provides a high-level overview of the system, establishing the context for all subsequent requirements. It serves as a foundation for understanding the system's purpose, boundaries, and key components.

1.2 System Purpose and Scope

1.2.a System Purpose

Aspect	Description
Primary Goal	The main problem the system aims to solve
Target Users	The primary user groups the system is designed for
Key Value Proposition	The unique value the system provides compared to alternatives
Business Objectives	The business goals the system helps achieve

1.2.b Scope Definition

In Scope	Out of Scope
Core functionality A	Extended functionality X
Core functionality B	Extended functionality Y
Core functionality C	Extended functionality Z

1.2.c Example System Purpose

Aspect	Description
Primary Goal	To provide a secure and user-friendly mobile application for tracking personal expenses and managing budgets
Target Users	Individual consumers, households, small business owners
Key Value Proposition	Combines expense tracking, budget planning, and financial insights in a privacy-focused offline-first approach
Business Objectives	Establish market presence in personal finance apps, generate revenue through premium features, build user base of 100,000 within first year

1.3 System Context

1.3.a Context Diagram (UML)

[Insert a UML context diagram showing the system and its interactions with external entities here. This should follow UML notation standards with clear system boundaries and relationship indicators.]

1.3.b External Systems and Interfaces

External System	Description	Interface Type	Data Exchanged
System A	Brief description of System A	API/File/Manual/etc.	Key data elements transferred
System B	Brief description of System B	API/File/Manual/etc.	Key data elements transferred
System C	Brief description of System C	API/File/Manual/etc.	Key data elements transferred

1.3.c User Types and Roles

User Type	Description	Primary Goals	Key Permissions
Role A	Description of Role A	Main goals of this user type	Key permissions
Role B	Description of Role B	Main goals of this user type	Key permissions
Role C	Description of Role C	Main goals of this user type	Key permissions

1.3.d Example External Systems Table

External System	Description	Interface Type	Data Exchanged
Banking API	Connects to user's bank accounts	RESTful API	Transaction history, account balances
Cloud Storage	Stores encrypted backups of user data	Cloud API	Encrypted database backups
Currency Exchange Service	Provides up-to-date currency conversion rates	RESTful API	Currency rates, conversion formulas

1.4 System Architecture

1.4.a High-Level Architecture (UML)

[Insert a UML component or package diagram showing the main components of the system here. Follow UML notation for components, interfaces, and dependencies.]

1.4.b Key Components

Component	Purpose	Key Functions	Related Components
Component A	Purpose of Component A	Key functions	Components it interacts with
Component B	Purpose of Component B	Key functions	Components it interacts with
Component C	Purpose of Component C	Key functions	Components it interacts with

1.4.c Data Flow Diagram

[Insert a data flow diagram showing how information moves through the system here. Note: Data Flow Diagrams typically use their own notation rather than UML.]

1.4.d Example Component Table

Component	Purpose	Key Functions	Related Components
Authentication Module	Manage user identity and access	Login, registration, password reset, session management	User Profile, Security Module

Component	Purpose	Key Functions	Related Components
Transaction Manager	Process and store financial transactions	Create, read, update, delete transactions; categorization; search	Database, Reporting Module
Budget Planner	Create and manage user budgets	Set budget goals, track progress, alert on thresholds	Transaction Manager, Notification System

1.5 Technical Environment

1.5.a Technology Stack

Layer	Technologies	Rationale
Frontend	[List technologies]	Justification for choices
Backend	[List technologies]	Justification for choices
Database	[List technologies]	Justification for choices
Infrastructure	[List technologies]	Justification for choices

1.5.b Development Tools and Environments

Environment	Purpose	Configuration	Access
Development	Developer work environment	Configuration details	Access method
Testing	Testing environment	Configuration details	Access method
Staging	Pre-production validation	Configuration details	Access method
Production	Live environment	Configuration details	Access method

1.5.c Example Technology Stack

Layer	Technologies	Rationale
Frontend	Kotlin, Jetpack Compose, Material Design	Native performance, modern UI toolkit, consistent design language
Backend	Kotlin Coroutines, Room Persistence Library	Asynchronous programming,

Layer	Technologies	Rationale
		efficient local data storage
Data-base	SQLite, Encrypted Room Database	Reliable local storage with security for sensitive financial data
Infra-structure	Firebase (Analytics, Crashlytics), Google Play Services	Robust monitoring, crash reporting, and distribution platform

1.6 System Constraints and Assumptions

1.6.a Constraints

Constraint Type	Description	Impact
Technical	Technical limitations	How it affects the system
Business	Business limitations	How it affects the system
Regulatory	Regulatory requirements	How it affects the system
Resource	Resource limitations	How it affects the system

1.6.b Assumptions

ID	Assumption	Validation Method	Risk if Invalid
A1	Stated assumption	How it will be validated	Consequences if assumption is wrong
A2	Stated assumption	How it will be validated	Consequences if assumption is wrong
A3	Stated assumption	How it will be validated	Consequences if assumption is wrong

1.6.c Example Constraints Table

Constraint Type	Description	Impact
Technical	App must function offline	Requires robust local data storage and sync resolution strategies
Business	Initial release must be within 6 months	Limits scope of first version, requires priori-

Constraint Type	Description	Impact	Stakeholder Group	Representatives	Primary Concerns	Engagement Method
Regulatory	Must comply with GDPR and CCPA	Requiring core features	Group B	Named representatives	Key interests and concerns	How they will be engaged
		Requires implementing data portability, right to be forgotten, and consent management	Group C	Named representatives	Key interests and concerns	How they will be engaged

1.7.a Example Stakeholders Table

Stakeholder Group	Representatives	Primary Concerns	Engagement Method
Executive Sponsors	Sarah Chen (CEO), David Park (CTO)	ROI, market positioning, timeline	Bi-weekly steering committee meetings
Development Team	Tech Lead, Senior Devs, Junior Devs	Technical feasibility, quality, architecture	Daily standups, sprint planning
End Users	Focus group, beta testers	Usability, performance, value	User testing sessions, feedback surveys
Compliance	Legal Team, Data Protection Officer	Regulatory compliance, data security	Monthly compliance reviews

1.7 Key Stakeholders

Stakeholder Group	Representatives	Primary Concerns	Engagement Method
Group A	Named representatives	Key interests and concerns	How they will be engaged

1.8 Visualization Recommendations

Effective system overviews benefit significantly from visual representations. Consider including:

1. **UML System Context Diagram:** Shows the system and its relationship to external entities using standard UML notation
2. **UML Component Diagram:** Illustrates major system components and their relationships using UML component notation
3. **UML Class Diagram:** Shows key data structures and their relationships (when appropriate for the overview)
4. **UML Sequence Diagrams:** Illustrates key interactions between components for critical processes
5. **Data Flow Diagram:** Depicts how information moves through the system (non-UML notation)
6. **UML Deployment Diagram:** Shows how system components are deployed on hardware infrastructure
7. **User Journey Maps:** Visualizes how users interact with the system to achieve goals (non-UML notation)

1.8.a UML Diagram Types and Usage

UML Type	Diagram	Purpose	When to Use
	Context Diagram	High-level view of system boundaries	Early planning to define scope
	Component Diagram	Shows components and interfaces	System architecture definition

UML Type	Diagram	Purpose	When to Use
	Class Diagram	Shows data structure and relationships	Data model definition
	Sequence Diagram	Shows interactions between objects	Process and workflow definition
	State Diagram	Shows states and transitions	Complex state-based behavior
	Deployment Diagram	Shows physical deployment	Infrastructure planning

1.8.b Tools for Creating Visualizations

Tool	Best For	UML Support	Key Features
Draw.io	General purpose diagrams	Full UML support	Free, browser-based, multiple export formats
Lucidchart	Collaborative diagrams	Full UML support	Real-time collaboration, integration with other tools

Tool	Best For	UML Support	Key Features
	gramming		
PlantUML	Code-based UML diagrams	Complete UML standard	Text-based diagram generation, version control friendly
Enterprise Architect	Professional UML modeling	Comprehensive UML standard	Complete modeling environment, code generation
Visual Paradigm	UML and business modeling	Full UML support	Integration with development environments
Micro	Collaborative visual planning	Basic UML support	Team collaboration, templates for system design
Figma	UI/UX wireframes and prototypes	Limited UML support	Design collaboration, interactive prototypes

1.9 Integration with Requirements

This system overview document serves as a foundation for more detailed requirements. Cross-reference this overview when creating:

1. **Epics and Features:** Ensure they align with the system components and architecture
2. **User Stories:** Verify they serve the identified user types and roles
3. **Technical Requirements:** Confirm compatibility with the technology stack and constraints
4. **Non-functional Requirements:** Validate against system constraints and technical environment
5. **Acceptance Criteria:** Check against assumptions and system boundaries

1.10 System Evolution

1.10.a Current State

Brief description of the system’s current state (if applicable), including any legacy systems being replaced or enhanced.

1.10.b Future Vision

Short-term and long-term vision for how the system will evolve beyond the current implementation scope.

1.10.c Phasing Strategy

Phase	Time-frame	Key Deliverables	Strategic Objectives
Phase 1	Time-frame	Core deliverables	Key strategic goals
Phase 2	Time-frame	Next set of deliverables	Next strategic goals
Phase 3	Time-frame	Future deliverables	Future strategic goals

1.11 Document Control

Version	Date	Author	Description of Changes
0.1	YYYY-MM-DD	[Author Name]	Initial draft
0.2	YYYY-MM-DD	[Author Name]	[Description of changes]
1.0	YYYY-MM-DD	[Author Name]	Approved version

1.12 Appendix: Glossary

Term	Definition	Context
[Term]	[Definition]	[Where/how used]
[Term]	[Definition]	[Where/how used]
[Term]	[Definition]	[Where/how used]

1.13 Appendix: References

Reference ID	Document Name	Version	Location
REF-001	[Document Name]	[Version]	[Location]
REF-002	[Document Name]	[Version]	[Location]
REF-003	[Document Name]	[Version]	[Location]