

CSE305 Software Engineering – Agile Process Model

Student: Başar Orhanbulucu

Student ID: 221805031

Project: Personal Asset Tracking System (Budget & Savings Manager)

1. Agile Hierarchy: Themes & Epics

Theme: Personal Financial Management & Budgeting

The overarching goal is to provide a comprehensive tool for individuals to manage their cash flow, track expenses, and achieve financial goals.

Epics (High-Level Features)

The project is divided into 5 main Epics:

1. Epic 01 - User Authentication: Secure access and user profile management.
2. Epic 02 - Asset (Account) Management: Managing cash sources (Wallets, Bank Accounts).
3. Epic 03 - Transaction Management: Logging, tracking, and filtering Income/Expenses.
4. Epic 04 - Goal Management: Setting and tracking financial targets.
5. Epic 05 - Dashboard & Analytics: Visualization of financial health.

2. User Stories & Tasks Breakdown

Epic 01: User Authentication

- User Story 1.1: As a user, I want to register and login so that my data is secure and private.
 - *Task:* Set up Firebase Project (Enable Auth & Firestore).
 - *Task:* Design 'Login' & 'Sign Up' UI.
 - *Task:* Implement FirebaseAuth logic.
 - *Task:* Create 'Auth Wrapper' for session persistence (Auto-redirect).

Epic 02: Asset (Account) Management

- User Story 2.1: As a user, I want to manage my cash accounts (e.g., Wallet, Bank) to see my total liquidity.
 - *Task:* Implement App Shell (BottomNavigationBar).
 - *Task:* Create Asset data model.
 - *Task:* Implement Firestore CRUD (Create/Read) for Assets.
 - *Task:* Implement manual balance update function.

Epic 03: Transaction Management

- User Story 3.1: As a user, I want to log income and expenses with categories.
 - *Task:* Create Transaction data model.
 - *Task:* Design 'Add Transaction' screen (Date picker, Dropdown).
 - *Task:* Implement Firestore 'add' function.
- User Story 3.2: As a user, I want to filter and search my history to find specific payments.
 - *Task:* Implement 'Transaction History' list grouped by month.
 - *Task:* Add Search Bar & Filter logic.

Epic 04: Goal Management

- User Story 4.1: As a user, I want to set savings goals and track my progress.
 - *Task:* Create Goal data model.
 - *Task:* Design 'Goal' cards with Progress Bars.

Epic 05: Dashboard & Analytics

- User Story 5.1: As a user, I want to see a summary of my financial status (Total Assets, Monthly Income/Expense) on the home screen.
 - *Task:* Design Dashboard UI layout (Summary Cards).
 - *Task:* Implement logic to calculate totals from Asset and Transaction collections.
- **User Story 5.2:** As a user, I want to visualize my asset distribution with a chart.
 - *Task:* Implement a Pie Chart widget showing distribution of funds across accounts.

3. Product Backlog (Prioritized)

This backlog is ordered by business value and dependency.

1. [High] Project Setup & Firebase Config
2. [High] User Auth (Register/Login/Wrapper) (US 1.1)
3. [High] App Shell (Navigation) & Settings (Logout)
4. [High] Asset Management (Create/List/Manual Update) (US 2.1)
5. [Medium] Transaction Creation (Income/Expense) (US 3.1)
6. [Medium] Transaction History (Grouped by Month) (US 3.2)
7. [Medium] Dashboard Summary (Total Balance) (US 5.1)
8. [Medium] Search & Filtering (US 3.2)
9. [Low] Goal Management (Create/Track) (US 4.1)
10. [Low] Dashboard Visuals (Pie Chart) (US 5.2)
11. [Future] Custom Category Management (User defined categories)
12. [Future] Calendar View for Transactions

4. Sprint Planning

Sprint 1: Foundation & Assets (Nov 24 - Dec 2)

- Goal: A working app where users can login and manage cash accounts. (Ready for First Presentation).
- Scope: Backlog items #1, #2, #3, #4.
- Key Tasks: Learning Flutter, Auth setup, Account CRUD.

Sprint 2: Budgeting Core (Dec 3 - Dec 16)

- Goal: Complete transaction tracking system (The core feature).
- Scope: Backlog items #5, #6, #7, #8.
- Key Tasks: Transaction CRUD, Filtering, Monthly grouping.

Sprint 3: Goals & Polish (Dec 17 – Dec 30)

- Goal: Visual enhancements and Goal tracking. (Ready for Final Demo).
- Scope: Backlog items #9, #10.
- Key Tasks: Goal CRUD, Pie Charts, UI Polish.

5. PSI (Potentially Shippable Increment)

- Target for Sprint 1: A functional "Account Manager" app. Users can securely login and maintain a list of their cash balances manually.
- Target for Sprint 2: A fully working "Budget & Transaction Tracking" module. Users can add, edit, delete, filter, and view monthly-grouped transactions.
- Target for Sprint 3: A polished "Goals & Dashboard" experience. Users can create goals, track progress visually, and use an improved UI with charts.

6. MVP Definition (End of Semester)

The final delivery will include:

1. Auth: Secure Login/Register.
2. Assets: Manual cash account tracking.
3. Budgeting: Income/Expense logging with history.
4. Goals: Basic savings tracking.
5. Cloud: Firestore data persistence.
6. Dashboard: Financial summary and visualization.

7. Trello Board Management

The project utilizes a Kanban board on Trello.

- Columns: Product Backlog, Sprint Backlog, In Progress, Done / PSI.
- Process: Cards are moved from Product Backlog to Sprint Backlog at the start of each sprint.

