

1 Test Plan

1.1 Detailed Test Case Descriptions

This section provides detailed descriptions of all planned test cases that will be used to verify the *SmartBudget* system. Each test case includes its ID, related requirement, preconditions, steps, and expected results. These details will guide future testing activities, making it easy for developers and testers to perform and track tests systematically once it is implemented.

1.1.1 TC-001

Test Case ID	TC-01
Title	Add Expense – Valid Inputs
Requirement	FR-001; UC-1; US-1
Preconditions	App is running; “Transactions” view available
Steps	<ol style="list-style-type: none">1- Open Transactions; Click “Add Transaction”; Select Expense.2- Enter valid amount (e.g., 25.50), pick a valid date, choose category (e.g., Food), add optional note.3- Click “Save”.
Expected Result	Expense row added; expense increases and balance totals decreases; success feedback; persisted.
Actual Result	
Status	
Priority	High

1.1.2 TC-002

Test Case ID	TC-02
Title	Add Income – Valid Inputs
Requirement	FR-001; UC-1; US-1

Preconditions	App is running; “Transactions” view available
Steps	<ol style="list-style-type: none"> 1. Open Transactions; Click “Add Transaction”; Select Income. 2. Enter valid amount (e.g., 25.50), pick a valid date, choose category (e.g., Salary), add optional note. 3. Click “Save”
Expected Result	Income row added; income and balance totals increase; success feedback; persisted.
Actual Result	
Status	
Priority	High

1.1.3 TC-003

Test Case ID	TC-03
Title	Add Transaction – Reject Invalid Amount
Requirement	FR-001; UC-1; US-1
Preconditions	App is running; “Transactions” view available
Steps	<ol style="list-style-type: none"> 1. Open Transactions; Click “Add Transaction”; Select Income/Expense. 2. Enter non-numeric (e.g., “abc”) or negative amount. 3. Click “Save”.
Expected Result	Save blocked; clear validation message; no record created; no totals change.
Actual Result	
Status	
Priority	High

1.1.4 TC-004

Test Case ID	TC-04
Title	Add Transaction – Reject Missing Required Fields
Requirement	FR-001; UC-1; US-1
Preconditions	App is running; “Transactions” view available

Steps	<ol style="list-style-type: none"> 1. Open Transactions; Click “Add Transaction”; Select Income/Expense. 2. Leave amount or date or type empty. 3. Click “Save”.
Expected Result	Save blocked; specific error message; no changes persisted.
Actual Result	
Status	
Priority	High

1.1.5 TC-005

Test Case ID	TC-05
Title	Edit Transaction – Totals Recalculate
Requirement	FR-001; UC-2; US-2
Preconditions	At least one existing transaction
Steps	<ol style="list-style-type: none"> 1. Open an existing transaction. 2. Change amount (e.g., 20 → 30). 3. Click “Save”.
Expected Result	Row updates; affected totals/summary recalculates; success feedback; persisted.
Actual Result	
Status	
Priority	High

1.1.6 TC-006

Test Case ID	TC-06
Title	Delete Transaction – Confirmation and Totals Update
Requirement	FR-001; UC-2; US-2
Preconditions	At least one existing transaction
Steps	<ol style="list-style-type: none"> 1. Open an existing transaction. 2. Click delete.

	3. Confirm deletion.
Expected Result	Row removed; totals/summary recalculates; confirmation used to prevent accidental deletion; persisted removal.
Actual Result	
Status	
Priority	High

1.1.7 TC-007

Test Case ID	TC-07
Title	Delete Transaction – Cancel Preservation
Requirement	FR-001; UC-2; US-2
Preconditions	At least one existing transaction
Steps	<ol style="list-style-type: none"> 1. Open an existing transaction. 2. Click delete. 3. In confirmation, click Cancel
Expected Result	No deletion; list and totals unchanged
Actual Result	
Status	
Priority	Medium

1.1.8 TC-008

Test Case ID	TC-08
Title	Persistence – Transactions Survive App Restart
Requirement	FR-001; US-8
Preconditions	At least one existing transaction
Steps	<ol style="list-style-type: none"> 1. Close app. 2. Reopen app. 3. Go to Transactions.
Expected Result	Previously saved transactions load automatically; no manual import required.
Actual Result	

Status	
Priority	High

1.1.9 TC-009

Test Case ID	TC-09
Title	View All Transactions – Default List/Table
Requirement	FR-002; UC-3; US-3
Preconditions	At least one existing transaction
Steps	1. Open Transactions view.
Expected Result	All transactions visible in a readable table/list with key columns; totals visible.
Actual Result	
Status	
Priority	High

1.1.10 TC-010

Test Case ID	TC-10
Title	Filter by Category (Single Category)
Requirement	FR-002; UC-3; US-3
Preconditions	Transactions exist across multiple categories.
Steps	1. Apply category filter (e.g., Food).
Expected Result	Only rows with category = “Food” shown; totals/summary reflect filtered subset.
Actual Result	
Status	
Priority	High

1.1.11 TC-011

Test Case ID	TC-11
Title	Filter by Date Range

Requirement	FR-002; UC-3; US-3
Preconditions	Transactions exist across multiple dates.
Steps	1. Set start and end date.
Expected Result	Only transactions within range shown; totals reflect range.
Actual Result	
Status	
Priority	High

1.1.12 TC-012

Test Case ID	TC-12
Title	Combined Filters – Date Range + Category
Requirement	FR-002; UC-3; US-3
Preconditions	Data spans categories and dates.
Steps	1. Apply date range. 2. Apply category.
Expected Result	List narrows to intersection; totals update accordingly.
Actual Result	
Status	
Priority	High

1.1.13 TC-013

Test Case ID	TC-13
Title	Filter results – No Matches
Requirement	FR-002; UC-3; US-3
Preconditions	Data set present
Steps	1. Apply filters that yield zero results.
Expected Result	Empty list message + zero totals displayed clearly.
Actual Result	
Status	
Priority	Medium

1.1.14 TC-014

Test Case ID	TC-14
Title	Clear Filters – Restore Full List
Requirement	FR-002; UC-3; US-3
Preconditions	Active filter(s) applied.
Steps	1. Click “Clear Filters”
Expected Result	All transactions visible again; totals reflect full data set
Actual Result	
Status	
Priority	Medium

1.1.15 TC-015

Test Case ID	TC-15
Title	Keyword Search – Narrows List
Requirement	FR-002; UC-3; US-3
Preconditions	Transactions with varied notes/payee/category names exist
Steps	1. Enter keyword (e.g., “coffee”) in search.
Expected Result	Only matching rows shown (by configured fields: note, payee, category); totals update; clearing search restores list.
Actual Result	
Status	
Priority	Medium

1.1.16 TC-016

Test Case ID	TC-16
Title	Set Monthly Budget – Valid Positive Amount
Requirement	FR-003; UC-4; US-4
Preconditions	Category exists (e.g., Food).
Steps	1. Open Budgets. 2. Select “Food”. 3. Enter 200.00.

	4. Save
Expected Result	Budget stored for current month; remaining allowance visible.
Actual Result	
Status	
Priority	Medium

1.1.17 TC-017

Test Case ID	TC-17
Title	Set Monthly Budget – Reject Invalid Inputs
Requirement	FR-003; UC-4; US-4
Preconditions	Budgets view open
Steps	1. Enter negative or blank budget. 2. Save
Expected Result	Save blocked; clear error message; no budget created/changed
Actual Result	
Status	
Priority	Medium

1.1.18 TC-018

Test Case ID	TC-18
Title	Update Existing Budget – Recalculate Remaining
Requirement	FR-003; UC-4; US-4
Preconditions	Budget already set for category; some spending exists
Steps	1. Edit “Food” budget 200 → 250. 2. Save
Expected Result	New limit stored; remaining allowance recalculated and displayed.
Actual Result	
Status	
Priority	Medium

1.1.19 TC-019

Test Case ID	TC-19
Title	Overspending Alert – Trigger at Equal to Limit
Requirement	FR-003; UC-6; US-5
Preconditions	Budget = 100 for Food; current spending = 90
Steps	1. Add Food expense of 10.
Expected Result	Alert appears indicating limit reached (category shown); remains visible until acknowledged/reset
Actual Result	
Status	
Priority	Medium

1.1.20 TC-020

Test Case ID	TC-20
Title	Overspending Alert – Trigger when Exceeding Limit
Requirement	FR-003; UC-6; US-5
Preconditions	Budget = 100 for Food; current spending = 95
Steps	1. Add Food expense of 10 (total 105).
Expected Result	Alert shows category and overage amount (e.g., +5); persists until acknowledged/reset
Actual Result	
Status	
Priority	Medium

1.1.21 TC-021

Test Case ID	TC-21
Title	No Budget Defined – No Alert
Requirement	FR3; UC-6; US-5
Preconditions	No budgets set.
Steps	1. Add multiple expenses in any category.
Expected Result	No budget alert appears.

Actual Result	
Status	
Priority	Medium

1.1.22 TC-022

Test Case ID	TC-22
Title	Monthly Summary – Correct Totals
Requirement	FR-004; UC-5; US-6
Preconditions	Month has known set of incomes/expenses
Steps	<ol style="list-style-type: none"> 1. Open Reports. 2. Select “This Month”.
Expected Result	Income, expenses, and balance compute correctly and match dataset.
Actual Result	
Status	
Priority	High

1.1.23 TC-023

Test Case ID	TC-23
Title	Custom Range Summary – Correct Totals
Requirement	FR-004; UC-5; US-6
Preconditions	Data across multiple months
Steps	<ol style="list-style-type: none"> 1. Choose custom start/end dates across months.
Expected Result	Totals reflect only the selected range; displayed clearly.
Actual Result	
Status	
Priority	Medium

1.1.24 TC-024

Test Case ID	TC-24
Title	Summary – No Data Path

Requirement	FR-004; UC-5; US-7
Preconditions	Select a period with no transactions
Steps	1. Open Reports
Expected Result	Zeros shown for totals; clear “no records found” note
Actual Result	
Status	
Priority	Medium

1.1.25 TC-025

Test Case ID	TC-25
Title	Category Chart – Accurate Visualization
Requirement	FR-004; UC-5; US-7
Preconditions	Transactions across multiple categories.
Steps	1. Open Reports with chart (pie/bar).
Expected Result	Chart values/percentages match underlying totals; labels/legend are clear.
Actual Result	
Status	
Priority	Low

1.1.26 TC-026

Test Case ID	TC-26
Title	Reports/Charts Auto-Update on Data/Filter Change
Requirement	FR-004; UC-5; US-7
Preconditions	Reports open with visible chart; baseline totals noted
Steps	1. Add/edit/delete a transaction OR change filters
Expected Result	Summary and chart refresh immediately to reflect the change.
Actual Result	
Status	
Priority	Medium

1.1.27 TC-027

Test Case ID	TC-27
Title	Usability Heuristics – Labels, Fonts, Navigation
Requirement	NFR-Usability
Preconditions	UI available (Transactions, Budgets, Reports)
Steps	<ol style="list-style-type: none">1. Inspect labels, font sizes, contrast.2. Walk through navigation paths between key views.
Expected Result	Clear labels; readable fonts; predictable navigation; consistent UI components
Actual Result	
Status	
Priority	Medium

1.1.28 TC-028

Test Case ID	TC-28
Title	Performance – Typical Dataset Responsiveness
Requirement	NFR- Performance
Preconditions	Seed transactions locally
Steps	<ol style="list-style-type: none">1. Launch app and open Transactions.2. Apply filters/search repeatedly
Expected Result	Loads and interactions complete without noticeable lag; list/filters remain responsive
Actual Result	
Status	
Priority	Medium

1.1.29 TC-029

Test Case ID	TC-29
Title	Reliability – Immediate Save & Graceful Invalid Handling
Requirement	NFR- Reliability
Preconditions	App running

Steps	1. Add/edit/delete; immediately kill and relaunch app. 2. Attempt invalid inputs on add/edit.
Expected Result	Most recent changes present after relaunch (immediate save); invalid inputs yield clear feedback; no data corruption
Actual Result	
Status	
Priority	High

1.1.30 TC-030

Test Case ID	TC-30
Title	Privacy/Offline – No Network Dependency
Requirement	Privacy/Offline
Preconditions	Device offline (disable network)
Steps	1. Launch app. 2. Perform add/view/filter/report flows
Expected Result	All features function offline; no network calls attempted
Actual Result	
Status	
Priority	High

1.1.31 TC-031

Test Case ID	TC-31
Title	Portability – Run on Windows/macOS/Linux
Requirement	NFR-Portability
Preconditions	Build packaged with supported Java runtime
Steps	1. Start app on each OS. 2. Smoke test add/view flows.
Expected Result	App launches and core flows work on all three platforms
Actual Result	
Status	
Priority	Medium

1.1.32 TC-032

Test Case ID	TC-32
Title	Maintainability – Modular Structure & Unit Tests Present
Requirement	NFR-Maintainability
Preconditions	Repo accessible
Steps	<ol style="list-style-type: none">1. Review project structure (e.g., MVC separation).2. Verify presence of unit tests for core model/services.
Expected Result	Clear modular separation; baseline unit tests exist; naming/packaging consistent.
Actual Result	
Status	
Priority	Medium