

Team 4 (PennyPal)

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## Preface

Version	Date	Changes
1.0	3/18/2025	Initial Version
1.1	3/18/2025	Added Glossary
2.0	5/9/2025	Final version

## Purpose

This document serves as a comprehensive guide for the development and understanding of the software project titled "PennyPal".

## Audience

The intended audience of this document includes project stakeholders, developers, testers, and anyone involved in the project lifecycle.

## Introduction

### Project Overview

**PennyPal** is a web-based **Personal Budget Management System** that helps users track expenses, set budgets, and achieve financial goals. It offers real-time insights and alerts to ensure better control over spending.

### Project Goals

- **Simplify Budget Management** – Provide an intuitive web interface for users to easily track income, expenses, and savings goals.
- **Enhance Financial Awareness** – Offer detailed insights and visual reports to help users analyze spending patterns and make informed decisions.
- **Promote Financial Discipline** – Enable budget alerts and notifications to prevent overspending and encourage consistent savings habits.

## Glossary

- **Budget:** A financial plan that helps users allocate their income towards expenses and savings.

# User Requirements and Use Cases

## User Stories

1. As a business owner, I want to securely log in so that my financial data remains protected.
2. As a freelance bartender, I want to add income and expenses so that I can keep track of my financial activities.
3. As a recently married man, I want to categorize my transactions so that I can better understand where my money is going.
4. As a travel influencer, I want to set a budget so that I can control my spending.
5. As a treasure hunter, I want to receive notifications when I am close to exceeding my budget so that I can adjust my spending habits.
6. As a future homeowner, I want to set and track savings goals so that I can stay motivated and work toward achieving them.
7. As a statistics professor, I want to view visual reports and analytics so that I can analyze my spending trends over time.
8. As a busy student, I want to sign in with google to save time.
9. As a film reviewer, I want to be able to delete my income as it keeps fluctuating.
10. As an elderly man, I want an alert to show if I have an account or not since I forget when I have signed up for different websites.

## Use Case: Adding a New Product

Identifier	Add Expense
Goal	Allow the user to add a new expense entry to their budget.
Requirements	The system must update the budget balance accordingly.
Initiating Actor	User
Participating Actor(s)	System
Pre-conditions	User is logged in
Post-conditions	Notifications or warnings are issued if a budget limit is exceeded.
Included Use Case(s)	Validate expense input
Extension(s)	Edit expense

**Table 1: Typical Course of Action**

Seq#	Actor's Action	System's Response
1	Enter expense description	
2	Enter value	
3	Submit	
4		Checks submitted information
5		Determines if information is valid
6		Commits user information to user database
7		Displays confirmation message stating "Expense logged successfully"

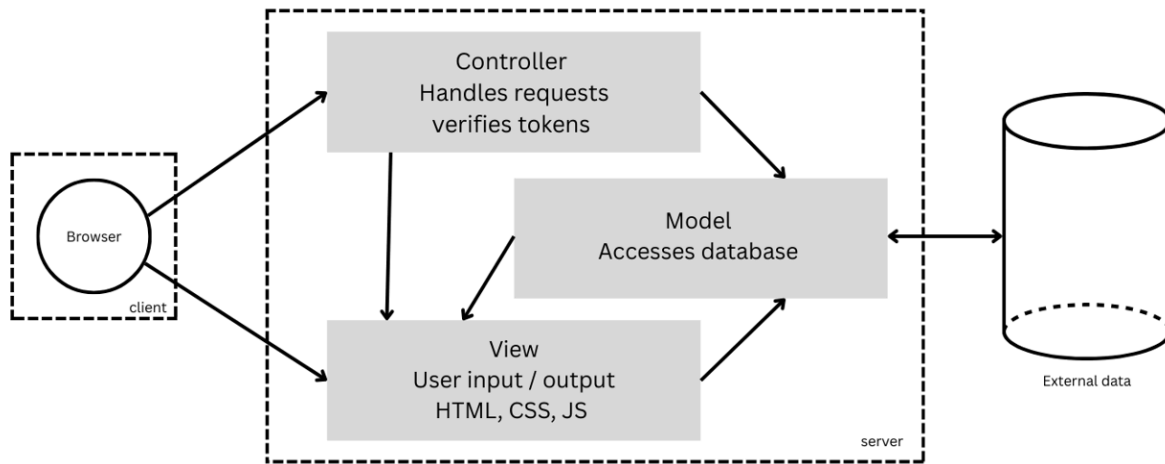
**Table 2: Alternate Course of Action**

Seq#	Actor's Action	System's Response
1	Enter expense description	
2	(Did not enter value)	
3	Click Submit	
4		Checks submitted information
5		Determines if information is missing
6		Information missing, prompts to enter the required value
7	Enter missing value	
8		Repeat steps 4, 5, and display a success message

**Table 3: Exceptional Course of Action**

Seq#	Actor's Action	System's Response
1	Enter expense description	
2	Enter values	
3	Does not send (click submit) / Closes app	
4		Waits a time for submission
5		Times out! / Logged out!
6	Reopens app	
7		Display message: "Information was not submitted, please restart."

## System Architecture



## Components

1. User Management: Handles registration, login, profile settings, and authenticates users
2. Expense Tracker: Adds, edits, and deletes expenses.
3. Income Manager: Records income sources and updates budget balance accordingly.
4. Budget Planner: Tracks usage and alerts on overspending.
5. Reports & Visualization: Displays charts and summaries of spending.
6. Notifications: Sends alerts for overspending or due dates.
6. Database: Stores user, expense, income, and budget data.

## Deployment Diagram

