Personal Expense Tracker Design Document

Introduction

Project Summary (Pitch)

The Personal Expense Tracker is a Windows Forms application designed to assist users in managing their personal finances. It provides an intuitive interface to add, update, delete, and search expenses while generating summaries. Using a local SQL Server LocalDB database ensures offline data access and security. This project is ideal for individuals seeking a simple and effective way to track their financial activities.

Inspiration

Inspired by tools like Mint and YNAB, this tracker emphasizes simplicity and offline functionality. Its goal is to enhance financial awareness through a user-friendly system.

Target Audience

1. **Teenagers** learning financial responsibility.
2. **Young adults** who monitor spending habits.
3. **Professionals** seeking a lightweight financial tool.

Concept

Application Overview

The tracker enables users to manage their expenses by providing the following functionalities:

Feature	Description
Add Expense	Record details such as description, category, amount, and date.
Update Expense	Edit existing records.
Delete Expense	Remove unnecessary entries.
Search Expenses	Filter records based on description, category, or date.
View Summary	Summarize expenses by category or time period.

Core Mechanics

Mechanic Description

Add Expense	Input new expenses with essential details.
Update Expense	Modify existing expense records.
Delete Expense	Remove specific expense entries.

Search Expenses	Filter expenses by criteria like date or category.
View Expense Summary	Generate spending summaries for better insights.

Design

Database Schema

Expense Table

Field	**Type**
ExpenseID	INT (Primary Key)
Description	VARCHAR(255)
Category	VARCHAR(100)
Amount	DECIMAL(10, 2)
Date	DATE

Categories Table (Optional)

Control	**Type**
CategoryID	Primary Key
CategoryName	Text

User Interface (UI)

Form	Description
Main Form	Displays a DataGridView of all expenses. Includes buttons for adding, updating, deleting, searching, and summarizing expenses.
Add/Update Form	Provides fields for entering or editing expense details. Includes a dropdown for category selection.
Search Form	Offers filters for searching expenses by description, category, or date range.
Summary Form	Displays grouped totals of expenses by category or time range.

Controls

Control	Description
Mouse	Click buttons, select grid items, interact with dropdowns.
Keyboard	Navigate fields with Tab; input data via keyboard.

Development Timeline with Kanban Tickets

#	Task	Type	Status	Finish By	Kanban Ticket
1	Design Document	Documentation	Finished	December 22, 2024	DOC-01
2	Create Database Schema	Coding	Finished	December 23, 2024	DB-01
3	Create Main Form	Coding	Finished	December 25, 2024	UI-01
4	Create Add/Update Form	Coding	Finished	December 28, 2024	UI-02
5	Create Search Form	Coding	Finished	December 30, 2024	UI-03
6	Create Summary Form	Coding	Finished	January 3, 2025	UI-04
7	Implement Database Helper	Coding	Finished	January 7, 2025	DB-02
8	Implement Error Logging	Coding	Finished	January 13, 2025	LOG-01

9	Implement Data Validation	Coding	Finished	January 15, 2025	VAL-01
10	Test and Debug	Testing	Finished	January 15, 2025	TEST-01

Beyond MVP

Feature	**Kanban Ticket**
Export Data	EXTRA-01
Charts and Graphs	EXTRA-02
User Authentication	EXTRA-03
Mobile Version	EXTRA-04

Conclusion

This design document provides a detailed and structured guide for the Personal Expense Tracker project. It includes all essential elements for implementation, presentation, and documentation. The Kanban tickets outlined ensure efficient task management, promoting smooth project progression. By adhering to this document, developers will deliver a functional, user-friendly tool that significantly enhances personal financial management.