

# Advanced Personal Expense Tracker

## Project Report

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## 1. Project Overview

### 1.1 Project Title

Advanced Expense Tracker – Personal Finance Management Desktop Application

### 1.2 Objective

Develop a modern, secure, and intuitive desktop tool for tracking personal expenses with:

- Role-based user authentication (admin / regular user)
- Easy expense entry and management
- Real-time total calculation
- Visual insights via category distribution charts
- Clean dark-themed interface

### 1.3 Target Users

Individuals, students, young professionals, and small households seeking simple offline expense tracking.

### 1.4 Scope of Current Version

- Local SQLite database
- Basic login + role differentiation
- CRUD operations (add/view/delete for admin)
- Pie chart visualization using Matplotlib

## 2. Technologies Used

Category	Technology	Purpose
GUI	CustomTkinter	Modern dark-themed interface

<b>Category</b>	<b>Technology</b>	<b>Purpose</b>
Language	Python 3	Application logic
Database	SQLite	Local persistent storage
Security	hashlib (SHA-256)	Password hashing
Visualization	Matplotlib	Expense distribution charts
Alerts	tkinter.messagebox	User feedback

### 3. Key Features

#	<b>Feature</b>	<b>Description</b>	<b>Status</b>
1	Secure Login	Username/password with role-based access	Implemented
2	Add Expense	Date, category, amount, note	Implemented
3	View & Select Expenses	Scrollable list with radio selection	Implemented
4	Delete Expense (admin only)	Remove selected record	Implemented
5	Real-time Total	Sum of all recorded expenses	Implemented
6	Category Pie Chart	Visual breakdown of spending	Implemented

### 4. Screenshots

**Figure 1 - Login Screen**

Modern dark-themed login interface with username and password fields.

## Figure 2 - Main Dashboard

Expense entry form, list of records with radio buttons, action buttons (Add / Delete / Charts), and total expense summary.

## Figure 3 - Expense Distribution Chart

Matplotlib pie chart showing percentage breakdown by category (e.g., dominant categories like Phone/Grocery).

## 5. Database Schema

### users

- id (PK)
- username (UNIQUE)
- password (hashed)
- role ("admin" / "user")

### expenses

- id (PK)
- user\_id (FK)
- date (TEXT: YYYY-MM-DD)
- category (TEXT)
- amount (REAL)
- note (TEXT)

## 6. Strengths

- Attractive dark-mode UI
- Fully offline – no server needed
- Simple installation
- Role-based controls already in place
- Easy to extend (reports, filters, export...)

## 7. Limitations & Future Work

- **High priority** — Date picker widget, better validation & error highlighting
- **Medium** — Search/filter, monthly summaries, CSV export
- **Future** — Budget alerts, multi-user admin view, cloud backup

## **8. Conclusion**

The application provides a functional, visually appealing foundation for personal expense management.

It successfully combines usability, security basics, and data visualization in a lightweight desktop package.