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Expense Tracker - Project

Introduction

The Expense Tracker is a Python-based application that helps users manage their expenses and income efficiently. It provides a user-friendly dashboard for adding, viewing, and analyzing financial records. The application uses **SQLite3** as its database and **Matplotlib for data visualization**. Users can register and log in to maintain personal financial records securely.

Key Features

User Authentication

Sign-up and login system to ensure each user has a private account.
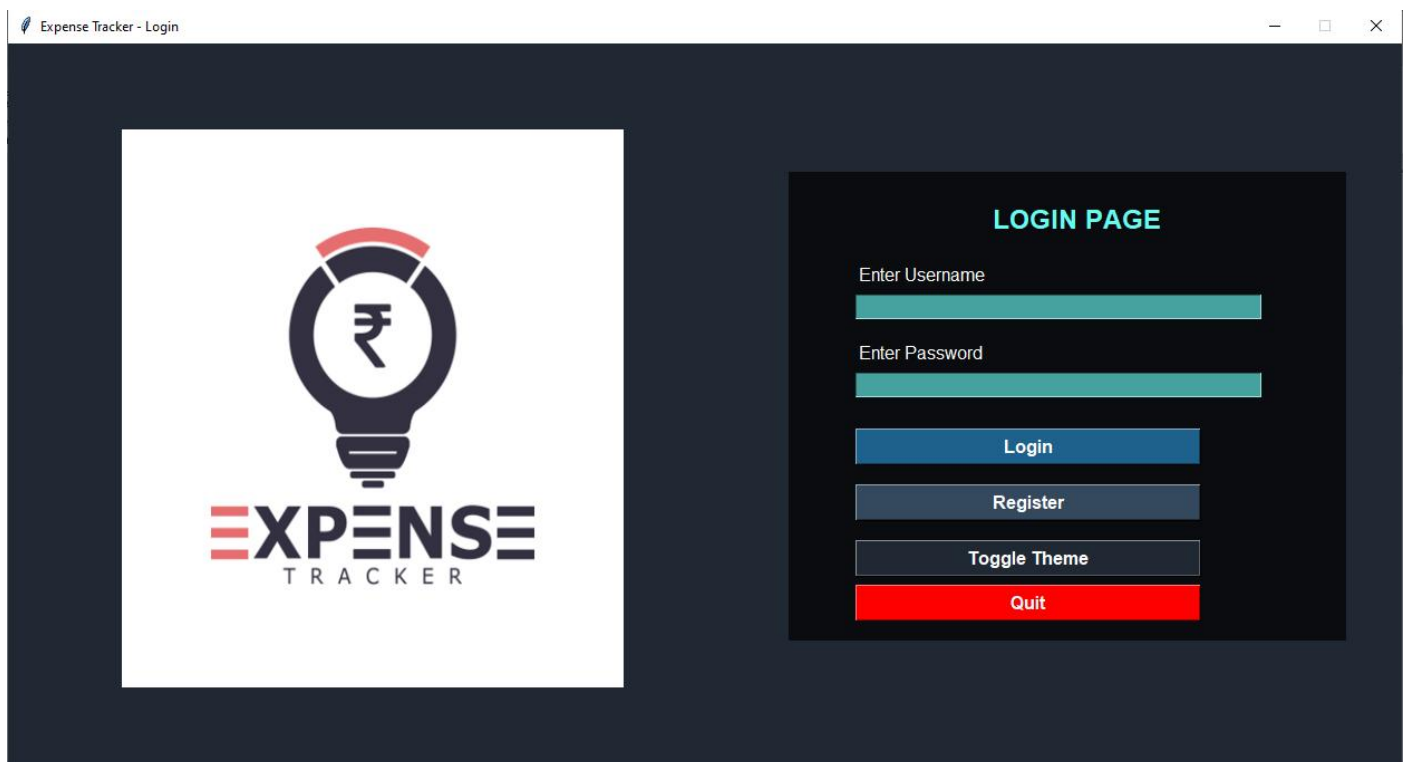
Expense & Income Management

Add, update, and delete expense records (amount, category, description, date).
Add, update, and delete income records (amount, source, date).
Data is stored securely in an **SQLite3 database**.
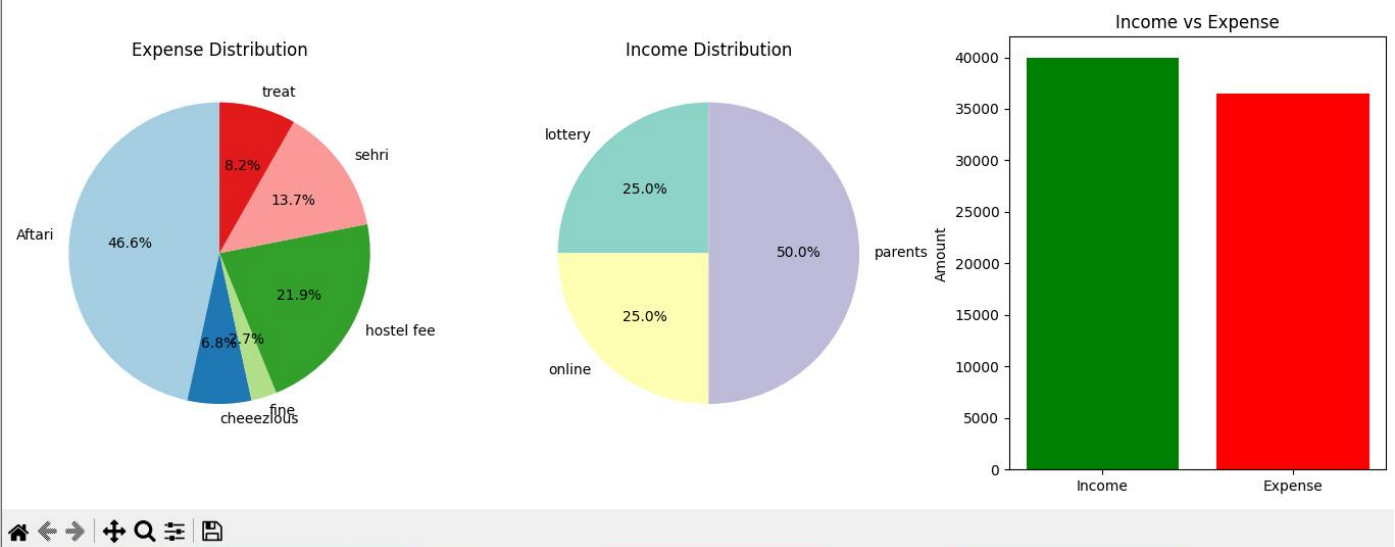

Data Visualization

Pie Charts for both expenses (by category) and income (by source).
Bar Chart comparing total income vs. total expenses.
Clicking the "**Visualize Records**" button displays a separate 1250x650 window with financial insights.
The visualization window has distinct background colors for better readability.

Save Data as CSV

Users can export expense and income records as a **CSV (EXCEL) file**.
Allows easy integration with external applications like Excel.

Dark & Bright Mode

Users can switch between **Dark Mode and Bright Mode** for better readability. UI dynamically adapts based on user preferences.

Logout & Quit Buttons

Logout Button: Logs out the current user and returns to the login screen.
Quit Button: Exits the application safely.
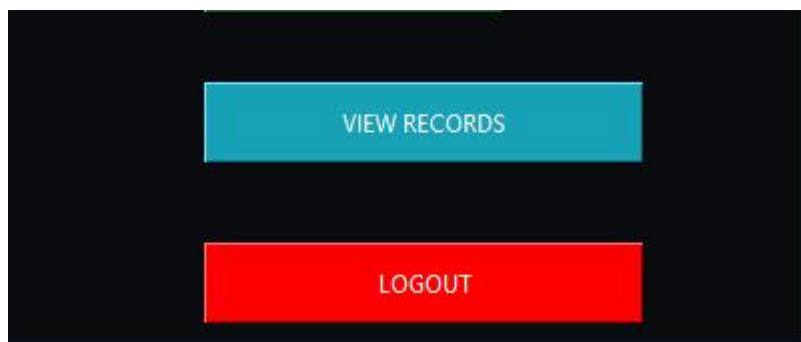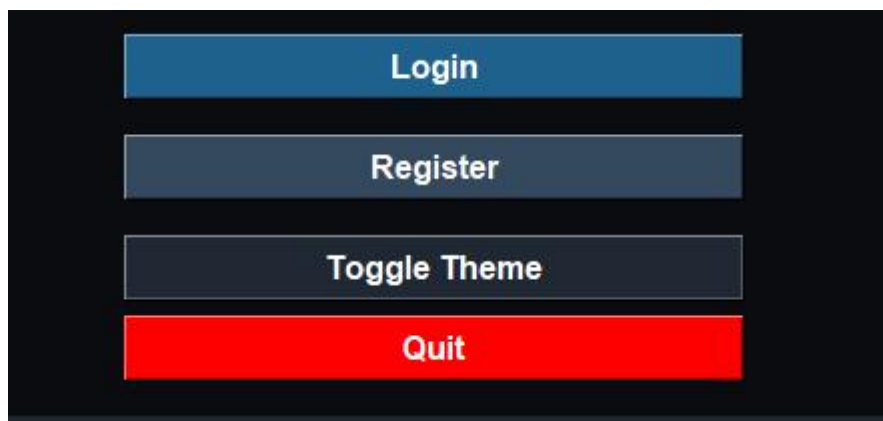
Error Handling & Validation

Invalid Input Handling: Ensures users enter correct data formats (e.g., numeric values for amounts).
Database Integrity Checks: Prevents duplicate or inconsistent entries.
Try-Except Blocks: Captures unexpected errors and provides meaningful messages.

Secure & Efficient Backend

SQLite3 Database: Ensures efficient storage and retrieval of records.
Optimized Queries: Enhances performance for large datasets.

Working Details
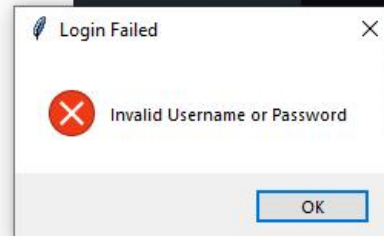
User Authentication & Data Access

The user signs up or logs in using their credentials.
Upon successful login, the system fetches and loads only that user's expense and income records.

Adding Expenses & Income

The user enters details like amount, category/source, description, and date.

Clicking the '**Add Expense**' or 'Add Income' button saves data into the SQLite database.
The table updates dynamically to reflect the new entry.

Viewing & Managing Records

The system displays a table of expenses and income.

Data Visualization

Clicking 'Visualize Records' opens a 1250x650 window.
It displays three graphs:
Expense Pie Chart (Grouped by category).
Income Pie Chart (Grouped by source).
Bar Graph Comparing Income vs. Expenses.
The graphs update in real-time based on stored data.

Exporting Data to CSV
Clicking the '**Export to CSV**' button saves expense and income records as a CSV file.
The user can choose the save location.

User Logout & Exit
Logout Button clears session data and redirects the user to the login screen.
Quit Button closes the application safely.

Conclusion
This Expense Tracker provides a seamless and secure platform to manage personal finances. With its robust data visualization, user authentication, and export capabilities, it ensures an optimal experience for tracking financial activities.

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