Project Documentation: Telegram Expense Tracker Bot

Problem Statement

Managing daily expenses efficiently can be challenging for individuals, especially when manual tracking methods are used. There is a need for an automated, convenient solution to log expenses, track salary, analyze payment methods, and generate financial reports in real-time. This project aims to address these needs by integrating a Telegram bot with Google Sheets for seamless financial tracking.

Key Features

1. Real-time Expense Tracking via Telegram Bot.

2. Google Sheets Integration for persistent storage.

3. Multi-Payment Method Support: Cash, UPI, Card, Bank Transfer, Other.

4. Salary Tracking and Balance Calculation.

5. Monthly and Yearly Financial Reports with Pie Chart Visualizations.

6. Payment Method Distribution Analysis.

7. Flexible Input: Supports adding expenses with custom dates and payment methods.

8. Inline help and error handling via bot commands.

Technologies Used

- Python

- Telegram Bot API (python-telegram-bot library)

- Google Sheets API (gspread, oauth2client)

- Pandas for data processing

- Matplotlib for data visualization

- dotenv for environment variable management

Industry Relevance

Automated expense tracking solutions are widely used in fintech applications. This project aligns with industry practices such as bot-driven user interfaces, cloud-based storage, and real-time reporting. The flexible and scalable architecture supports future integration with other financial services, making it highly relevant to personal finance management systems.