Budget Planning App for Students (Python + CSV)

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Github: https://github.com/sukla2003/Guvi-Data-Analytics-Internship-Project---2-.git

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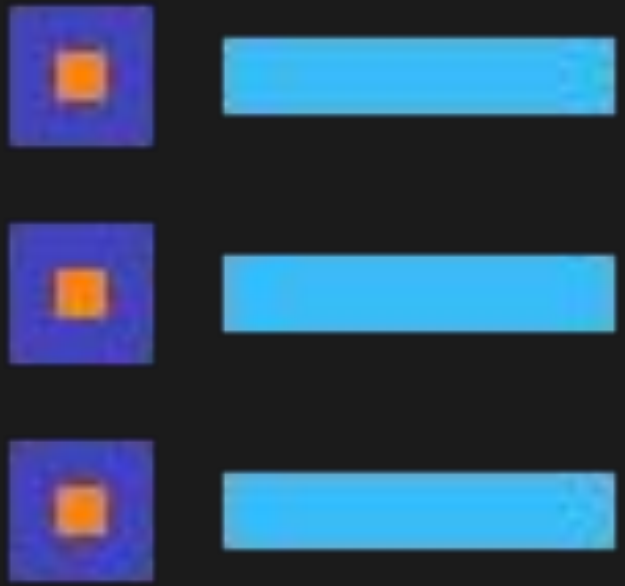
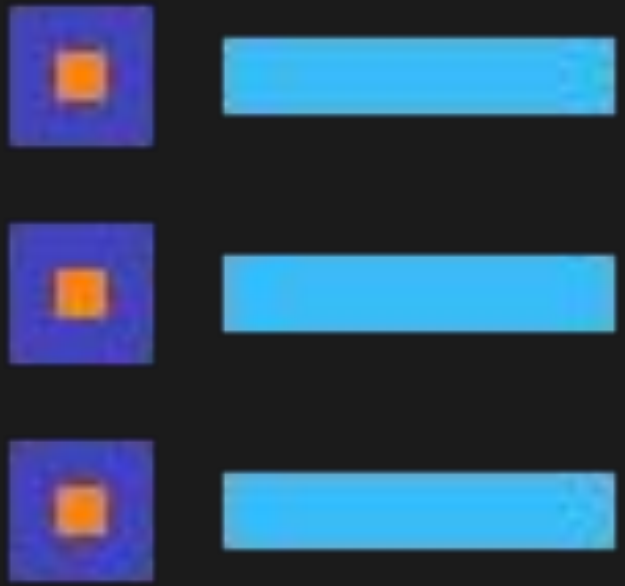
Agenda



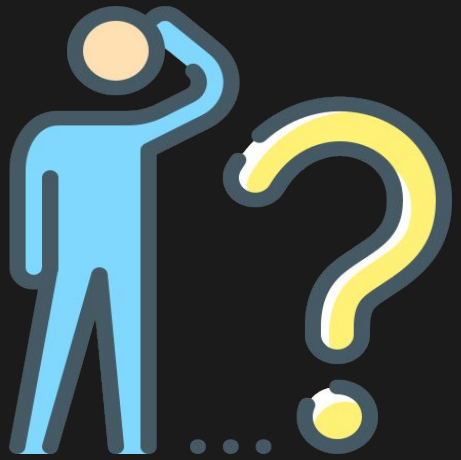
- Project Question
- Objective
- Project Summary
- Description
- Functional Components
- Sample Dataset

Agenda



- Workflow
- Dashboard Overview
- Expected Output
- Challenges
- Conclusion
- Q & A
- Thank You

Project Question ?



How Can Students manage their monthly Income and Expenses effectively?

- Students Often overspend without realizing where money goes.
- Manual Tracking is time-consuming and unreliable.
- Need: a simple system that logs transactions and pr ovide clear insights.

Objective

- Develop a **Budget Planning App** using Python + CSV.
- Allow students to **record daily transactions**(Income/Expenses).
- Automatically calculate **Balance = Income - Expenses** .
- Provide **visual dashboards** to highlight savings and top spending areas.
- Make financial tracking **easy, accurate and insightful**.

Project Summary

This project is a simple yet effective Budget Planning App designed to help students manage their monthly finances. The app allows users to input transactions by entering the date, category, type (income or expense), and amount, which are then stored in a CSV file for persistence. Using Python and Pandas, the data is processed to calculate total income, total expenses, and the remaining balance. To provide clear financial insights, an interactive dashboard built with Plotly displays visualizations such as income vs expenses, category-wise expense distribution, monthly balance trends, and a savings percentage gauge. The application not only highlights the top three spending areas for each month but also summarizes total savings and balance, enabling students to track their financial habits and improve budgeting skills effectively.

Description

Project Idea:
A simple yet powerful **Budget Planning App** designed for students to record their daily financial transactions and analyze spending behavior.

How it Works:

- Students log each transaction with **Date, Category, Type (Income/Expense), and Amount**.
- Data is stored in a **CSV file**, which acts as a personal financial ledger.
- Using **Python (Pandas)**, the app processes data to calculate **total income, total expenses, and balance**.
- A **Plotly-powered dashboard** presents visual insights, making it easy to track spending and savings.

Description

Key Features:

- Easy transaction input (command-line interface in Colab).
- Data persistence in **CSV format** (accessible anytime).
- **Automatic balance calculation** → no manual math.
- Interactive **dashboard with 4 charts**:
  - Income vs Expense (Bar chart)
  - Expense Distribution (Pie chart)
  - Balance Trend (Line chart)
  - Savings % (Gauge)

Description

Value Proposition:

- Helps students understand **where their money goes**.
- Highlights **top 3 spending categories** each month.
- Provides **end-of-month balance and savings %** at a glance.
- Encourages students to build **financial discipline**.

Functional Components

01

Inputs

Date, Category, Amount, Type (Income/Expense)

02

Visualization

Bar Chart → Category-wise expenses

Pie Chart → Expense distribution

Line Chart → Balance trend across months

Gauge Chart → Savings percentage

Data Storage

Save transactions in a CSV file

03

Processing

Calculate Total Income

Calculate Total Expenses

Compute Balance = Income – Expenses

Sample Dataset

Date	Category	Type	Amount	Month
2025-02-01	Salary	Income	20000.0	2025-02
2025-02-02	Food	Expense	600.0	2025-02
2025-02-05	Transport	Expense	250.0	2025-02
2025-02-12	Shopping	Expense	1200.0	2025-02
2025-03-01	Salary	Income	20000.0	2025-03
2025-03-03	Food	Expense	700.0	2025-03
2025-03-10	Rent	Expense	5000.0	2025-03
2025-03-18	Freelance	Income	4000.0	2025-03
2025-03-21	Travel	Expense	800.0	2025-03

Workflow

1. Transaction Entry

Student enters Date, Category, Type, and Amount.

2.Data Storage

Transaction is saved into a CSV file.

3.Data Processing

- Python (Pandas) loads the CSV.
- Calculates Total Income, Total Expenses, and Balance.

Workflow

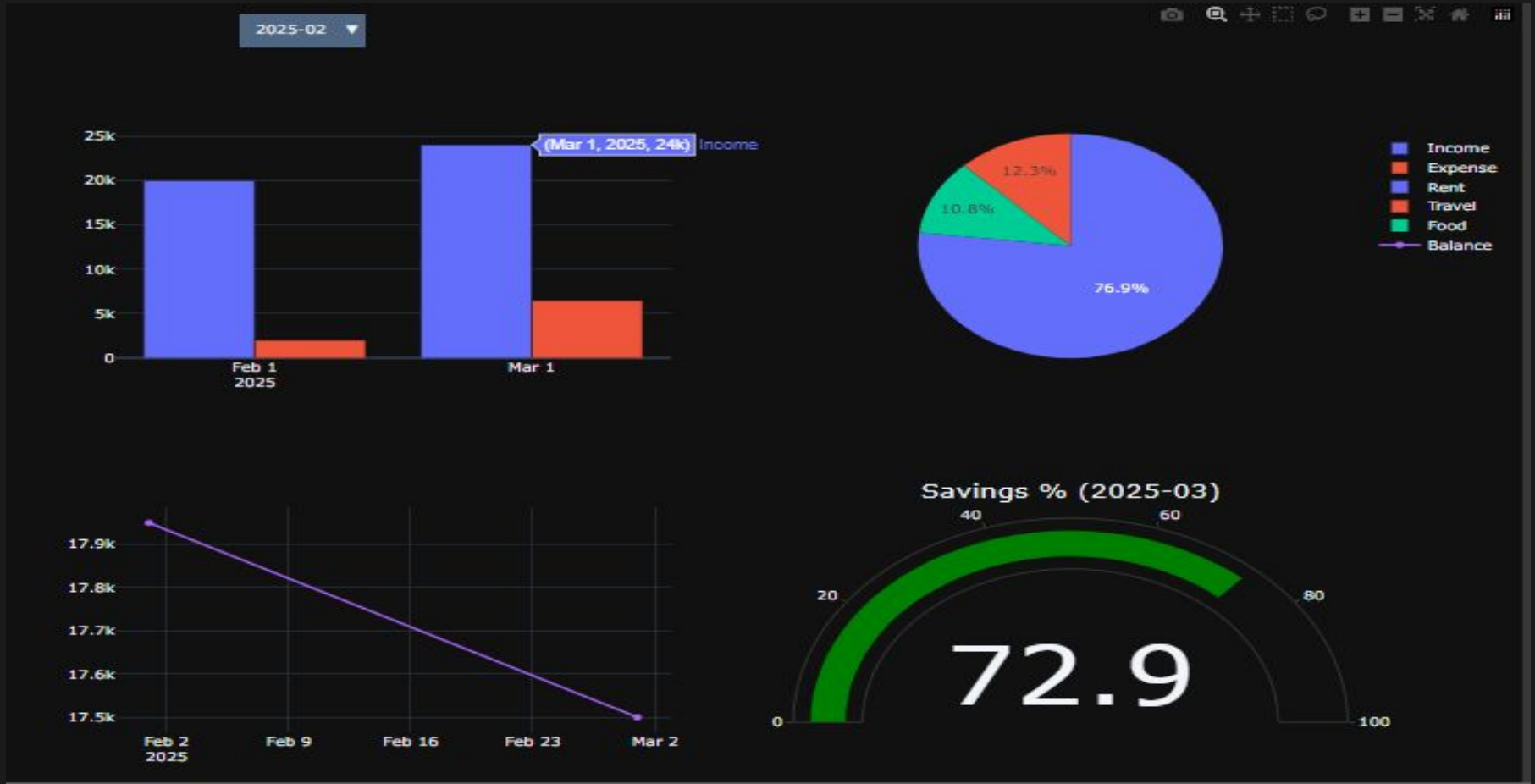
4.Analysis and Insights

- Identifies Top 3 Spending Categories.
- Computes Savings Percentage.

5.Visualization

- Interactive dashboard generated using Plotly.
- Displays Bar, Pie, Line, and Gauge charts.

Dashboard Overview



Expected Output

Summary Report per Month:

- Total Income
- Total Expenses
- Balance (Income – Expenses)

Top 3 Spending Categories:

- Identifies the categories with the **highest expenses**.

Expected Output

Visual Insights from Dashboard:

- Income vs Expense comparison
- Expense distribution by category
- Monthly balance trend line
- Savings % gauge

Decision Support:

- Helps students monitor overspending
- Encourages better financial planning

Challenges

1.

Data Handling Issues:

- Managing empty datasets (blank or missing values).
- Ensuring correct formatting of dates and categories.

2.

Dashboard Integration in Colab:

- Dropdown filters sometimes not updating properly.
- Compatibility issues with interactive widgets.

3.

Visualization Challenges:

- Designing a clear yet **non-cluttered dashboard**.
- Balancing multiple charts in a single view.

Challenges

4.

User Experience:

- Making the app simple enough for students with no technical background.
- Avoiding complex commands while keeping flexibility.

Conclusion

The Budget Planning App successfully demonstrates how students can manage their personal finances in a simple yet effective way. By allowing users to log daily transactions and storing them in a CSV file, the app ensures easy record-keeping and data persistence. Using Python and Pandas, it automatically calculates total income, total expenses, and the remaining balance, while the interactive Plotly dashboard provides clear visual insights through charts and gauges. The system not only highlights the top three spending categories but also presents savings percentages, helping students gain financial awareness and improve their budgeting habits. Overall, this project offers a practical tool for financial discipline and serves as a strong foundation for future improvements such as budget alerts, recurring expenses, and automated PDF reports.

Q & A

- Feel free to ask questions.
- Contact: sreyan_2312res659@iitp.ac.in

THANK YOU