

The background features a dark blue oval shape on a black background. Inside the oval, there is a faint, light blue line graph with several peaks and valleys, resembling a stock market or financial trend. The text is overlaid on this graphic.

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# Simple Python Budget Tracker

A robust, console-based application for managing personal finances with persistent data storage.



# Project Overview

- ✓ **The Problem:** Tracking monthly expenses manually is tedious and prone to error.
- ✓ **The Solution:** A Python automation tool that digitizes the process.
- ✓ **Core Function:** Allows users to set budgets, log expenses, and view real-time balance updates.
- ✓ **Target Audience:** Individuals looking for a lightweight, CLI-based financial management tool.





# Key Features



## Data Persistence

Uses JSON to store budget and expense data locally. Your financial data survives even after the program closes.



## Smart Tracking

Dynamically aggregates expenses by category. Adding "Food" twice sums the amounts automatically.







## Budget Alerts

Provides instant feedback on your financial health, alerting you immediately if you exceed your monthly limit.



# Technical Stack

-  **Python 3.x:** Core logic and flow control.
-  **JSON Module:** Handles data serialization and file I/O operations.
-  **Error Handling:** Robust try-except blocks manage invalid inputs and file errors.
-  **CLI Interface:** A clean, menu-driven loop for user interaction.

```
4  ...<head>
5  ...<meta charset="UTF-8" />
6  ...<meta name="viewport" content="width=device-width, initial-scale=1.0" />
7  ...<title>Style Demo</title>
8  ...</head>
9  ...<body>
10 ...<script>
11 ...function $initHighlight(block, flags) {
12 ...    //some gibberish function
13 ...    if (!!flags) {
14 ...        try {
15 ...            const someString = "123";
16 ...            if (block.abc.className.search(/\bno\-\highlight\b/ !== -1))
17 ...                return processBlock(block.__proto__.function, true, 0xff);
18 ...        } catch (e) {
19 ...            for (let idx = 0 / 2; idx ≤ classes.length; idx++) {
20 ...                if (checkConditions(classes[i]) === undefined) return /\d+[\s/]/g;
21 ...            }
22 ...        }
23 ...    }
24 ...}
```



# Application Data Flow

## 1. Load Data

Program starts, checks for `budget_data.json`, and loads existing records.

## 2. User Input

User selects an action (Add Expense, Set Budget) via the main menu.

## 3. Processing

Python validates inputs (e.g., non-negative numbers) and updates lists.

## 4. Save Data

Data is aggregated and written back to JSON for permanent storage.



# JSON Structure

The application relies on a structured JSON format to maintain state. This lightweight approach ensures portability and human-readability.

- 🔑 **Total Budget:** Stored as a float value.
- ☰ **Expenses:** A dictionary object mapping categories to aggregated amounts.
- 🔄 **Auto-Save:** The `save_data()` function triggers automatically after every critical update.





# Future Enhancements

## Visual Reporting

Implement Matplotlib or similar libraries to generate pie charts and bar graphs, visualizing spending habits directly within the application.

## GUI Development

Transition from the Command Line Interface (CLI) to a Graphical User Interface (GUI) using Tkinter or PyQt for a more modern user experience.

# Questions?

Thank you for reviewing the Python Budget Tracker project.



# Image Sources



[https://elements-resized.envatousercontent.com/elements-video-cover-images/alc4ee92-0d4a-47ea-913b-791ab69ba57d/video\\_preview/video\\_preview\\_0000.jpg?w=500&cf\\_fit=cover&q=85&format=auto&s=efaf5d5e060e9dda7f5fb4f3e7ee468ad7d9c7b5e40c64f1f7875567419deced](https://elements-resized.envatousercontent.com/elements-video-cover-images/alc4ee92-0d4a-47ea-913b-791ab69ba57d/video_preview/video_preview_0000.jpg?w=500&cf_fit=cover&q=85&format=auto&s=efaf5d5e060e9dda7f5fb4f3e7ee468ad7d9c7b5e40c64f1f7875567419deced)

Source: [elements.envato.com](https://elements.envato.com)

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Source: [plainenglish.io](https://plainenglish.io)

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[https://img.freepik.com/premium-vector/json-file-format-icon-json-file-format-3d-render-icon-json-file-format-document-color-icon-vector\\_300191-1312.jpg?semt=ais\\_incoming&w=740&q=80](https://img.freepik.com/premium-vector/json-file-format-icon-json-file-format-3d-render-icon-json-file-format-document-color-icon-vector_300191-1312.jpg?semt=ais_incoming&w=740&q=80)

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