CAFE MANAGEMENT SYSTEM

(SWEET BLISS)

FULL PROJECT REPORT

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1. Problem Description

Running a café or bakery requires managing several things such as:

- Menu management
- Taking multiple customer orders
- Billing
- Tracking sales analytics
- Managing expenses
- Storing customer feedback

Most small cafés still use manual paperwork which is slow, error-prone, and difficult to maintain.

So the objective of this project is to create a simple, terminal-based Café Management System using Python that automates these tasks.

The system uses **CSV files** for data storage and includes analytics features using **NumPy** and **Matplotlib.**

2. Abstract

This project is a **Python-based Café and Bakery Management System** designed to streamline café operations. It provides features like:

- Displaying menu and menu charts
- Taking multiple-item customer orders
- Auto-generating bills
- Maintaining total sales data
- Recording daily expenses
- Displaying sales analytics graphs

- Accepting customer feedback

The system is lightweight, console-based, and uses **CSV files** for persistent storage, making it easy to use and modify.

3. Project Features

1. Menu Management

- Loads menu data from `menu.csv`
- Displays menu in the terminal
- Shows menu as a horizontal bar graph using Matplotlib

2. Multi-Item Order System

- Customer can order any number of items in one order
- Automatically calculates prices
- Stores order entries is saved permanently in `orders.csv`

3. Bill Generator

- Generates a detailed bill with:
    - Order ID
    - Item names
    - Quantity
    - Line totals
    - Final total amount

4. Sales Analytics

Uses NumPy for:

- Total sales
- Average order value
- Maximum order value

Displays sales chart (item-wise quantities) using Matplotlib.

5. Expense Tracker

- Add expenses (butter, sugar, etc.)
- Store them in `expenses.csv`
- Compute total monthly expenses

6. Customer Feedback Module

Stores:

- Customer name
- Rating
- Feedback is saved in `feedback.csv`

4. Technology Stack

Programming Language

- Python 3

Libraries Used

- **csv** – file handling
- **numpy** – analytics & calculations
- **matplotlib** – graphs & visualizations

Data Storage

- CSV files (`menu.csv`, `orders.csv`, `expenses.csv`, `feedback.csv`)

5. System Architecture

Modules in the project

1. **main.py** – It shows the menu to the user when the program starts (1–9 options). It keeps the program running inside a loop until the user selects Exit.

2. **menu.py** – Reads the menu from `menu.csv`. Shows menu items in the terminal in neat format .Uses matplotlib to create a horizontal bar graph of menu items vs. their prices.

3. **orders.py** – Lets the customer order more than one item at the same time.

4. **bill.py** – Prints a clean and readable bill for the customer.

5. **analytics.py** – It tells you how much you earned and what sells the most.

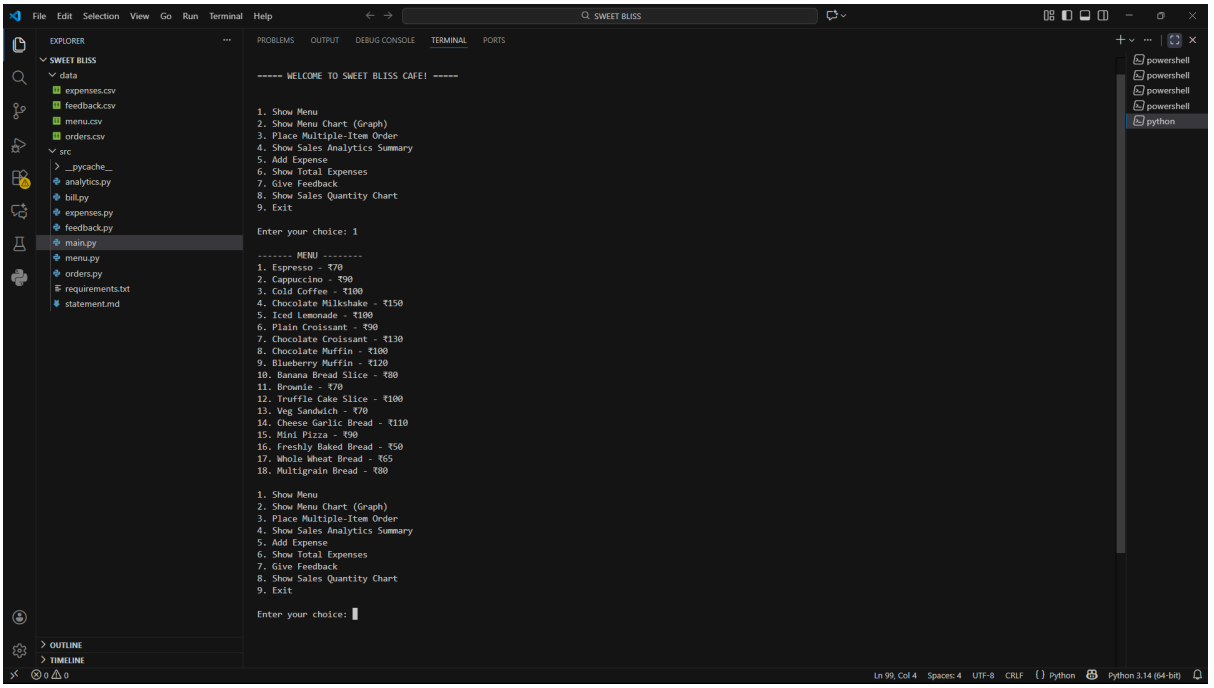
6. **expenses.py** – It helps track how much money the café is spending.

7. **feedback.py** – It stores customer reviews so the café can improve later.

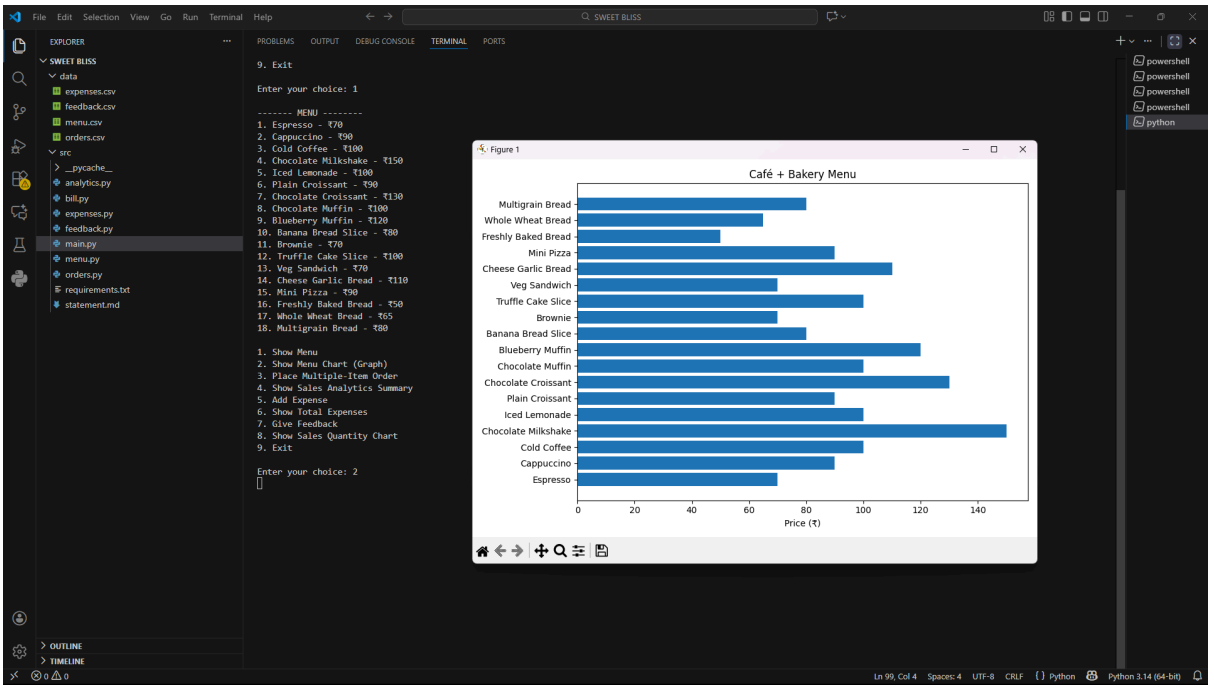
7. Screenshots / Outputs

You will need to take screenshots from your terminal:

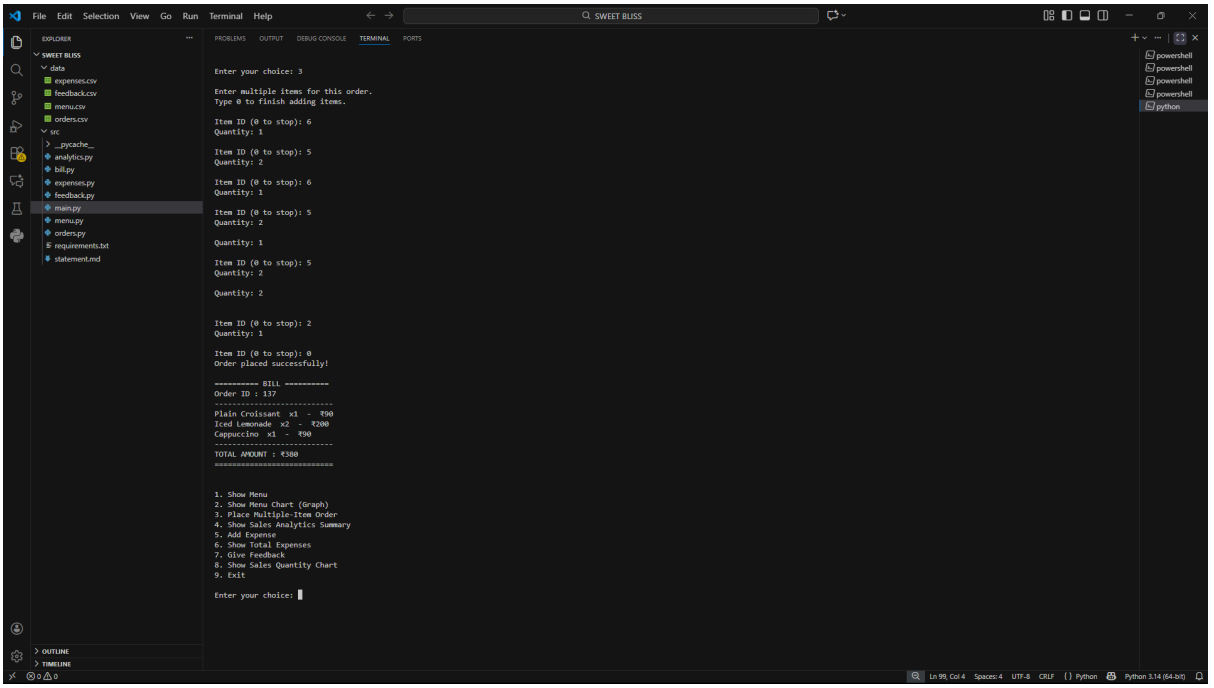
- Menu display



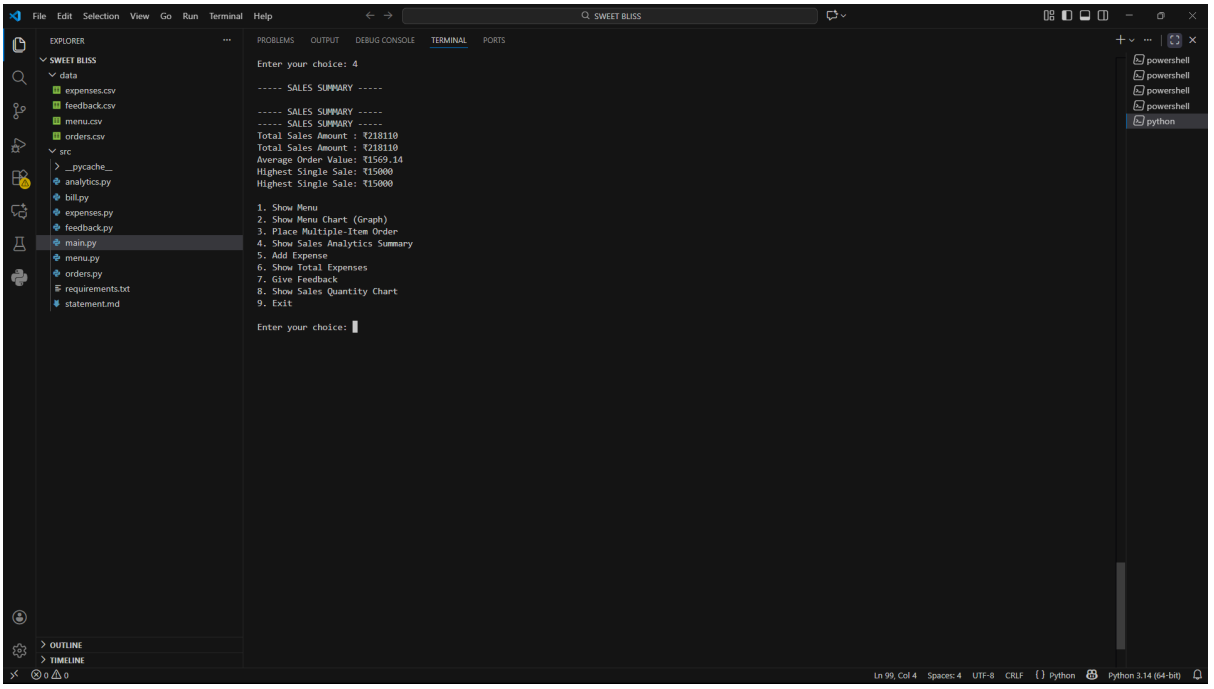
- Menu bar graph



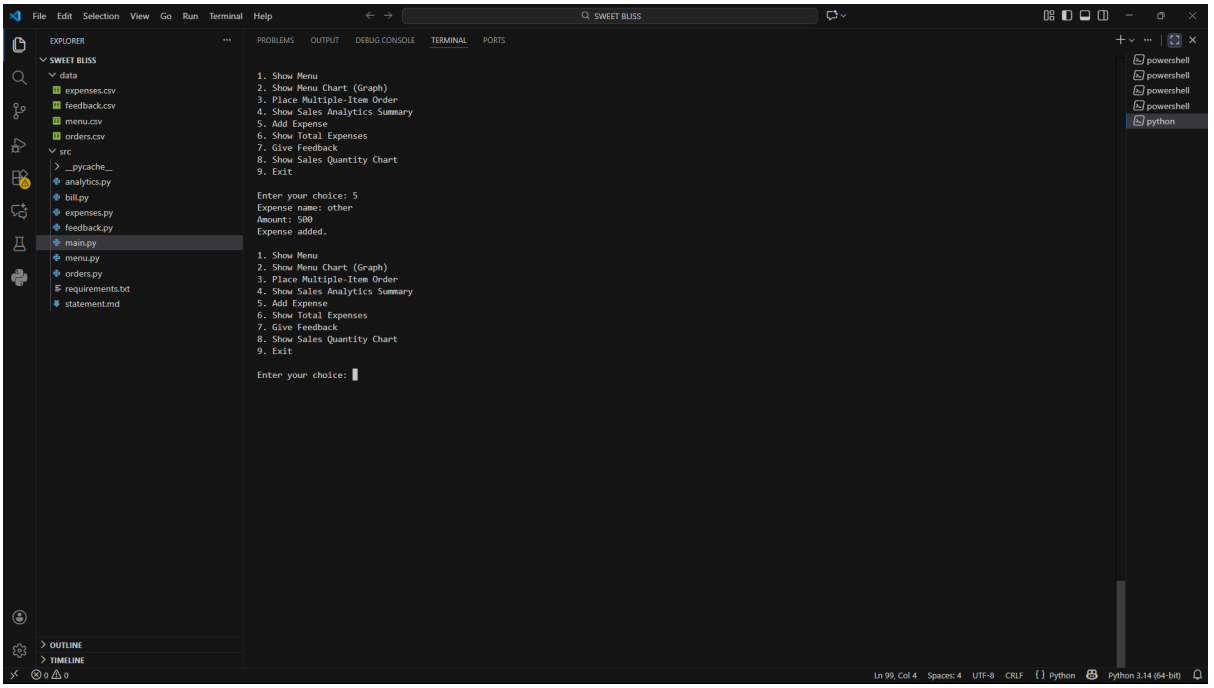
- Order input & Bill Generation



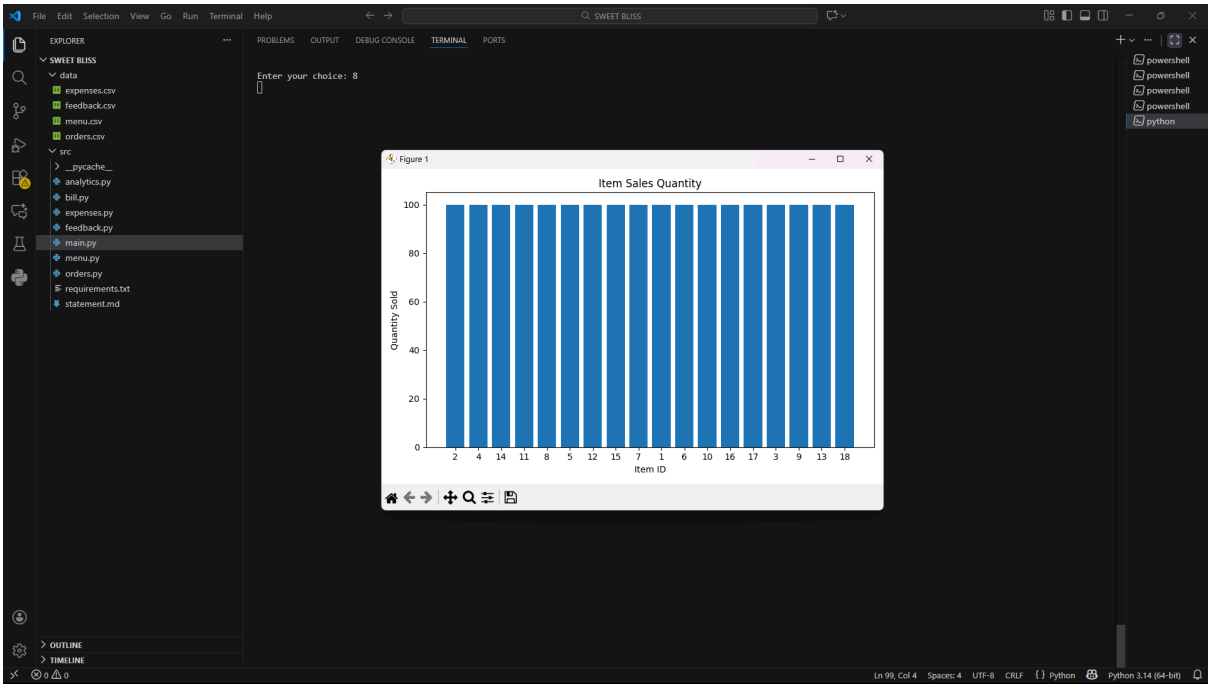
- Sales Summary



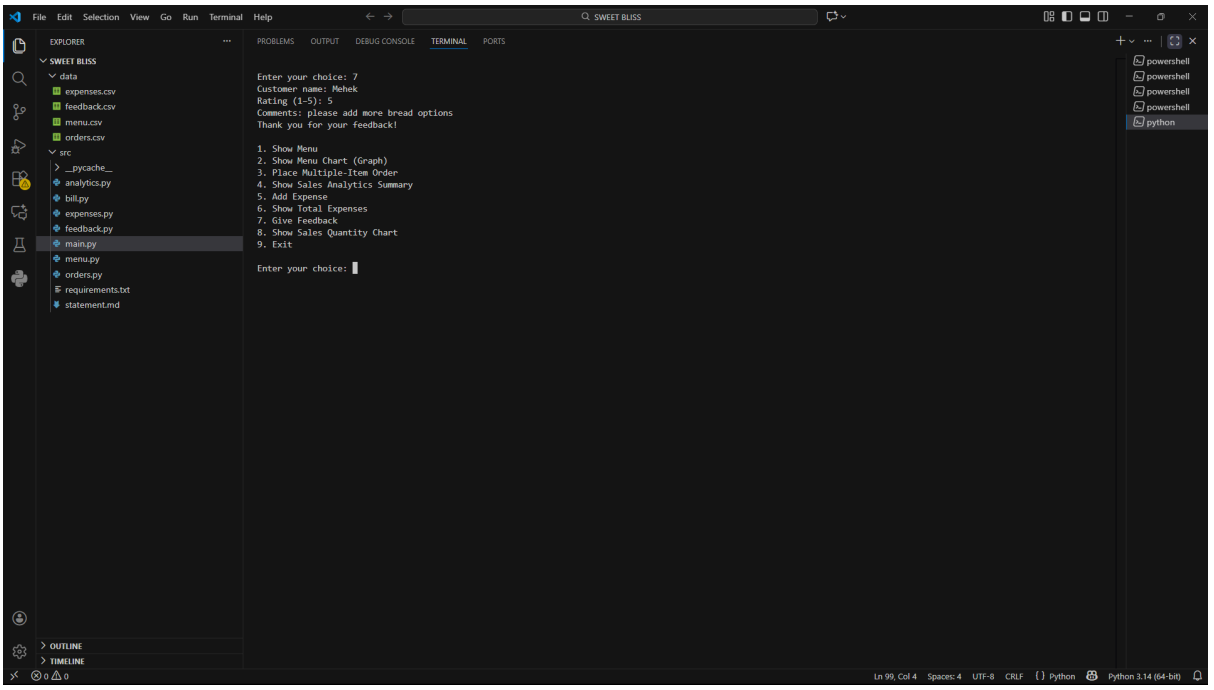
- Expense Adding



- Sales graph



- Feedback entry



9. Conclusion

The Café Management System is an efficient tool for small cafés and bakeries to automate daily operations. It provides accurate billing, maintains sales and expense records, and supports decision-making using analytics and visualizations.

The project demonstrates good use of Python fundamentals, file handling, libraries, modular programming, and real-world application logic.

10. Future Enhancements

- Add GUI using Tkinter or PyQt5
- Add user login & admin dashboard
- Connect to SQL database instead of CSV
- Add PDF bill generation
- Add inventory management

- Add monthly financial reports

11. References

- Python official documentation
- NumPy documentation
- Matplotlib documentation
- Classroom materials