Top-Down Design & Algorithm for Expense Tracker

Top-Down Design

The program is divided into major modules:
1. Main Program – Loads expenses, shows menu, handles options.
2. Load Expenses – Reads file and loads data into a list.
3. Save Expenses – Writes expenses list back to file.
4. Add Expense – Takes user input, saves new entry.
5. View Expenses – Displays expenses in a readable list.
6. Show Total Spending – Calculates total amount spent.

Algorithm: Main()

1. Call load_expenses() → expenses list.
2. Loop:
a. Display menu.
b. Take user input.
c. If 1 → add_expense().
d. If 2 → view_expenses().
e. If 3 → show_total().
f. If 4 → exit.
g. Else show 'invalid option'.

Algorithm: load_expenses()

1. Create an empty list.
2. Try opening the file.
3. For each line:
a. Remove newline.
b. Split name and amount.
c. Append tuple.
4. Return list.

Algorithm: save_expenses()

1. Open file in write mode.
2. For each tuple (name, amount):
a. Write "name,amount" to file.

Algorithm: add_expense()

1. Take user input for name.
2. Take input for amount.
3. Append (name, amount).
4. Save list.
5. Print success message.

Algorithm: view_expenses()

1. If list empty → print message.
2. Else print all expenses numbered.

Algorithm: show_total()

1. Sum all amounts.
2. Display total spending.