**TASK 4**

In Task-3, you extended the expense tracker to support categories and basic queries. Now you will convert it into a menu-driven console application so users can interact through options (Add, View, Search, Monthly Total, Exit). This improves program structure and user experience, and prepares you for larger CLI tools and automation scripts.

import csv

from datetime import datetime

from io import StringIO

# --- In-memory CSV simulation ---

memory\_file = StringIO()

writer = csv.writer(memory\_file)

writer.writerow(["Date", "Category", "Description", "Amount"])

memory\_file.seek(0)

# --- Helper Functions ---

expenses = []

def save\_expense(date, category, description, amount):

"""Add a new expense (in-memory)."""

expenses.append({

"Date": date,

"Category": category,

"Description": description,

"Amount": amount

})

print("✅ Expense added successfully!")

def view\_expenses():

if not expenses:

print("No expenses found.")

return

print("\n--- All Expenses ---")

for exp in expenses:

print(f"{exp['Date']} | {exp['Category']} | {exp['Description']} | ₹{exp['Amount']}")

def search\_expenses():

keyword = input("Enter category or description keyword: ").lower()

results = [exp for exp in expenses if keyword in exp['Category'].lower() or keyword in exp['Description'].lower()]

if results:

print("\n--- Search Results ---")

for exp in results:

print(f"{exp['Date']} | {exp['Category']} | {exp['Description']} | ₹{exp['Amount']}")

else:

print("No matching records found.")

def monthly\_summary():

if not expenses:

print("No expense data to summarize.")

return

summary = {}

for exp in expenses:

date = datetime.strptime(exp['Date'], "%Y-%m-%d")

month\_key = date.strftime("%Y-%m")

summary[month\_key] = summary.get(month\_key, 0) + float(exp['Amount'])

print("\n--- Monthly Summary ---")

for month, total in summary.items():

print(f"{month}: ₹{total:.2f}")

# --- Main Menu ---

def main():

while True:

print("\n===== Expense Tracker Menu =====")

print("1. Add Expense")

print("2. View All Expenses")

print("3. Search Expense")

print("4. Monthly Summary")

print("5. Exit")

choice = input("Choose an option (1-5): ")

if choice == "1":

date = input("Enter date (YYYY-MM-DD): ")

category = input("Enter category (Food, Travel, etc.): ")

description = input("Enter description: ")

amount = input("Enter amount: ")

save\_expense(date, category, description, amount)

elif choice == "2":

view\_expenses()

elif choice == "3":

search\_expenses()

elif choice == "4":

monthly\_summary()

elif choice == "5":

print("Exiting... Goodbye! 👋")

break

else:

print("Invalid choice! Please enter a number between 1–5.")

if \_\_name\_\_ == "\_\_main\_\_":

main()