import datetime

from collections import defaultdict

class ExpenseTracker:

def \_\_init\_\_(self):

self.expenses = defaultdict(list) # Initialize dictionary with a list

def add\_expense(self):

try:

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

date = datetime.datetime.strptime(date\_str, "%Y-%m-%d").date()

category = input("Enter category: ").strip()

amount = float(input("Enter amount: ")) # Converts input to float

description = input("Enter description: ").strip()

self.expenses[date].append({

"category": category,

"amount": amount,

"description": description

})

print("Expense added successfully!\n")

except ValueError:

print("Invalid input. Please enter the date in YYYY-MM-DD format and amount as a number.\n")

def view\_expenses(self):

if not self.expenses:

print("No expenses recorded.\n")

return

for date, expenses in sorted(self.expenses.items()):

print(f"Date: {date}")

for expense in expenses:

print(f" - Category: {expense['category']}, Amount: {expense['amount']:.2f}, Description: {expense['description']}")

print()

def view\_monthly\_summary(self):

try:

year = int(input("Enter year (YYYY): "))

month = int(input("Enter month (MM): "))

total\_amount = sum(

expense["amount"]

for date, expenses in self.expenses.items()

if date.year == year and date.month == month

for expense in expenses

)

print(f"Total amount spent in {year}-{month:02d}: {total\_amount:.2f}\n")

except ValueError:

print("Invalid input. Please enter a valid year and month.\n")

def view\_category\_wise\_expenditure(self):

category = input("Enter category: ").strip().lower()

total\_amount = sum(

expense["amount"]

for expenses in self.expenses.values()

for expense in expenses

if expense["category"].lower() == category

)

print(f"Total amount spent on {category}: {total\_amount:.2f}\n")

def main():

tracker = ExpenseTracker()

while True:

print("\nExpense Tracker")

print("1. Add Expense")

print("2. View Expenses")

print("3. View Monthly Summary")

print("4. View Category-wise Expenditure")

print("5. Exit")

choice = input("Enter your choice: ").strip()

if choice == "1":

tracker.add\_expense()

elif choice == "2":

tracker.view\_expenses()

elif choice == "3":

tracker.view\_monthly\_summary()

elif choice == "4":

tracker.view\_category\_wise\_expenditure()

elif choice == "5":

print("Exiting program. Goodbye!")

break

else:

print("Invalid choice. Please enter a number between 1 and 5.\n")

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

main()