PROJECT – 3

Build a python program developing an Expense Tracker application that allows users to manage their expenses efficiently.

PROGRAM:

```python
import json
from datetime import datetime

# File to store expenses
EXPENSE_FILE = 'expenses.json'

# Load expenses from file
def load_expenses():
    try:
        with open(EXPENSE_FILE, 'r') as file:
            return json.load(file)
    except FileNotFoundError:
        return []

# Save expenses to file
def save_expenses(expenses):
    with open(EXPENSE_FILE, 'w') as file:
        json.dump(expenses, file, indent=4)

# Add a new expense
def add_expense(date, amount, description, category):
    expense = {
        'date': date,
```

```python
        'amount': amount,
        'description': description,
        'category': category
    }
    expenses = load_expenses()
    expenses.append(expense)
    save_expenses(expenses)
    print("Expense added successfully!")

# View expenses
def view_expenses():
    expenses = load_expenses()
    if not expenses:
        print("No expenses recorded.")
        return
    for expense in expenses:
        print(expense)

# Summarize expenses
def summarize_expenses():
    expenses = load_expenses()
    summary = {}
    for expense in expenses:
        month = expense['date'][:7]  # YYYY-MM
        category = expense['category']
        amount = float(expense['amount'])

        if month not in summary:
            summary[month] = {}

        if category not in summary[month]:
```

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```python
        summary[month][category] = 0

      summary[month][category] += amount

   for month, categories in summary.items():
      print(f"\nSummary for {month}:")
      for category, total in categories.items():
         print(f"  {category}: ${total:.2f}")

# User Interface
def main():
   while True:
      print("\nExpense Tracker Menu")
      print("1. Add Expense")
      print("2. View Expenses")
      print("3. Summarize Expenses")
      print("4. Exit")

      choice = input("Choose an option: ")

      if choice == '1':
         date = input("Enter date (YYYY-MM-DD): ")
         amount = input("Enter amount: ")
         description = input("Enter description: ")
         category = input("Enter category: ")
         add_expense(date, amount, description, category)

      elif choice == '2':
         view_expenses()

      elif choice == '3':
```

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```
        summarize_expenses()

    elif choice == '4':
        break

    else:
        print("Invalid choice. Please try again.")

if __name__ == "__main__":
    main()
```

PROCESS FOR OUTPUT:

Running the Program
Expense Tracker Menu
1. Add Expense
2. View Expenses
3. Summarize Expenses
4. Exit
Choose an option:

Adding an Expense
Enter date (YYYY-MM-DD): 2024-05-23
Enter amount: 20.50
Enter description: Lunch
Enter category: Food
Expense added successfully!

Viewing Expenses
If you choose option 2 ("View Expenses"), the program will

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display all recorded expenses:
[{'date': '2024-05-23', 'amount': '20.50', 'description': 'Lunch', 'category': 'Food'}]
If no expenses are recorded, it will display:
No expenses recorded.

Summarizing Expenses
Summary for 2024-05:
Food: $20.50
Transportation: $10.00
Entertainment: $15.00

Exiting the Program
If you choose option 4 ("Exit"), the program will terminate, and you will be returned to the command prompt with no additional output.

Error Handling
If you enter an invalid option in the menu, the program will prompt you to try again:
Invalid choice. Please try again.

OUTPUT:

Expense Tracker Menu
1. Add Expense
2. View Expenses
3. Summarize Expenses
4. Exit
Choose an option: 1
Enter date (YYYY-MM-DD): 2024-05-23

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Enter amount: 20.50
Enter description: Lunch
Enter category: Food
Expense added successfully!

Expense Tracker Menu
1. Add Expense
2. View Expenses
3. Summarize Expenses
4. Exit
Choose an option: 1
Enter date (YYYY-MM-24): 2024-05-24
Enter amount: 10.00
Enter description: Bus fare
Enter category: Transportation
Expense added successfully!

Expense Tracker Menu
1. Add Expense
2. View Expenses
3. Summarize Expenses
4. Exit
Choose an option: 2
[{'date': '2024-05-23', 'amount': '20.50', 'description': 'Lunch', 'category': 'Food'},
 {'date': '2024-05-24', 'amount': '10.00', 'description': 'Bus fare', 'category': 'Transportation'}]

Expense Tracker Menu
1. Add Expense
2. View Expenses

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3. Summarize Expenses
4. Exit
Choose an option: 3

Summary for 2024-05:
  Food: $20.50
  Transportation: $10.00

Expense Tracker Menu
1. Add Expense
2. View Expenses
3. Summarize Expenses
4. Exit
Choose an option: 4