```
from datetime import datetime
import pandas as pd
import numpy as np
import csv

def add_expense():
    # to excute date properly the below step written
    while True:
        user_input = input('Enter date of the expense in yyyy-mm-dd')
        try:
            user_date  = datetime.strptime(user_input,"%Y-%m-%d")
            break
        except ValueError:
            print("Invalid date. Enter date in yyyy-mm-dd format.")
    # Category should be within the list so the below list written
    category = [
        "Food",
        "Travel",
        "Entertainment",
        "Utility"]

    for c in category:
        print(f"{c}")

    choice = input("Select your category: ")
    while choice not in category:
        choice = input(f"Choose one of: {', '.join(category)}: ")

    amount = input('Enter the expense amount')
    description = input('Enter the expense description')

    expenses_dict = {'date': user_input, 'category': choice, 'amount':
amount, 'description': description}
    return expenses_dict

def view_expenses():
    # Function to check and fill missing data
    def get_valid_input(field_name):
        while True:
            user_input = input(f"Please enter {field_name}: ")
            if user_input.strip():  # Ensure the input is not empty
                return user_input
            else:
                print(f"{field_name} cannot be empty. Please try
again.")

    # Read the CSV file
    filename = 'Expense Tracker.csv'  # Replace with your file name
    with open(filename, 'r') as file:
        csv_reader = csv.DictReader(file)
        for row in csv_reader:
            # Check for missing data and ask the user to input the 
missing values
            if any(not row[column] for column in row):
                print("Found missing data. Please provide the missing 
information.")

                if not row['date']:
                    row['date'] = get_valid_input('date')
                if not row['category']:
                    row['category'] = get_valid_input('category')
                if not row['amount']:
                    row['amount'] = get_valid_input('amount')
                if not row['description']:
                    row['description'] = 
get_valid_input('description')

            # Now, print the updated row
            print(row)

def budget_tracker():
    budget = float(input('What is your monthly budget?'))
    all_expenses = load_data()
    total_expenses = all_expenses['amount'].sum()
    balance = budget - total_expenses
    if balance < 0:
        print('You have exceeded your budget!')
    else:
        print(f'You have {balance} left for the month')

def save_data(expenses=None):
    try:
        new_data = pd.DataFrame([expenses])
        try:
            all_expenses = load_data()
            all_expenses = pd.concat([all_expenses, new_data], 
ignore_index=True)
            all_expenses.to_csv('Expense Tracker.csv', index = False)
            print("Expenses saved")
        except FileNotFoundError:
            all_expenses = new_data
            all_expenses.to_csv('Expense Tracker.csv', index = False)
            print("Expenses saved")
    except:
        try:
            all_expenses = load_data()
            all_expenses.to_csv('Expense Tracker.csv', index = False)
            print("Expenses saved")
        except FileNotFoundError:
            print("No data to be saved")

def load_data():
    all_expenses = pd.read_csv('Expense Tracker.csv')
    return all_expenses

def menu():
    menu_detail = {1:'Add expense', 2:'View expenses', 3:'Track
budget', 4:'Save expenses', 5:'Exit'}
    for a,b in menu_detail.items():
        print(f'{a}.{b}')
    while True:
        choice = int(input("Select any one option: "))
        while choice not in range(1,6):
            choice = int(input(f"Choose between 1 to 5"))

        if choice == 1:
            expenses = add_expense()
        elif choice == 2:
            view_expenses()
        elif choice == 3:
            budget_tracker()
        elif choice == 4:
            try:
                save_data(expenses)
            except NameError:
                save_data()
        else:
            break5:

menu()
```

```
1.Add expense
2.View expenses
3.Track budget
4.Save expenses
5.Exit
```

```
Select any one option:  2
```

```
{'date': '01-03-2025', 'category': 'Food', 'amount': '100',
'description': 'Lunch'}
{'date': '2025-03-06', 'category': 'Travel', 'amount': '200',
'description': 'Thane west'}
{'date': '2025-1-1', 'category': 'Food', 'amount': '500',
'description': 'Biryani'}
{'date': '2020-2-1', 'category': 'Entertainment', 'amount': '100',
'description': 'Movie'}
```

```
{'date': '2025-2-2', 'category': 'Utility', 'amount': '50',
'description': 'Medical expense'}
```