Assignment 1

Problem Statement: Music Festival Schedule Management

Dataset:music_festival.txt

Concert: Imagine Dragons, Rock, 2024-11-15, 08:00 PM, 1
Workshop: Guitar Masterclass by John Mayer, Blues, 2024-11-15, 02:00 PM, 2
Panel Discussion: Women in Music, Talk, 2024-11-16, 11:00 AM, 3
DJ Set: DJ Snake, EDM, 2024-11-16, 10:00 PM, 4
Concert: Taylor Swift, Pop, 2024-11-17, 09:00 PM, 1
Talk: Music Production Tips, Talk, 2024-11-17, 03:00 PM, 2
Concert: Coldplay, Alternative Rock, 2024-11-18, 08:30 PM, 1

Description

[Type of Event]: [Event Name], [Genre], [Date], [Time], [Stage Number]

Type of Event:Category of the event (e.g., Concert, Workshop, Panel Discussion, DJ Set, Talk).

Event Name:Name of the event or the performing artist/band (e.g., Imagine Dragons, Guitar Masterclass by John Mayer).

Genre:Music genre of the event (e.g., Rock, Blues, EDM, Pop, Talk).

Date:Scheduled date of the event in YYYY-MM-DD format (e.g., 2024-11-15, 2024-11-16).

Time:Start time of the event in 12-hour format with AM/PM (e.g., 08:00 PM, 11:00 AM).

Stage Number:Stage number where the event will be held (e.g., 1, 2, 3, 4).

Tasks

1. **Find the total number of events and print the number of unique genres.**

2. **Insert a new event titled "Concert: The Weeknd" with the genre *R&B*, scheduled for *2024-11-19* at *10:00 PM* on *Stage 2*.**

3. **Find the total number of events for each genre.**

4. **If an artist/band is unavailable due to emergency reasons, remove all their scheduled events.**

   - Prompt the user to enter the artist/band's name and remove their events from the schedule.

5. **Find the number of events scheduled at each time slot.**

6. **Display the total number of events along with a summary of events grouped by genre. For each genre, list the event type and artist/band name.**

7. **Due to an unforeseen emergency, delete all the sessions for the day.**

8. **Sort the events based on the names of the artists/bands and display them.**

   - The output should be alphabetically sorted by artist/band names.

Optional Tasks

1. **Update the timing of a particular event to a post-lunch session.**

   - Assume lunch ends at 1:00 PM. Prompt the user to enter the event type, artist/ band name, and new time.

2. **Sort the events as per the event time and write the sorted data to a new file.**

   - Create a new file with events sorted by time.

Methodology

- **Load the Dataset:** Load the dataset from a file into a variable for easier manipulation.
- **Data Exploration:** Explore the dataset.
- **Detailed Analysis:** Make sure you understand the significance of each column and row in the dataset.

Implementation

- **Language:** Python 3.10 or above
- **Use data structures:** Utilize lists, sets, and dictionaries.
- **Use/write appropriate functions:** Implement specific functions for each task.
- **Make use of operators, loops, and conditionals.**

Subproblem 1

```
Enter subquestion number to access its solution, or enter 0 to exit.
Enter choice: 1
Total events: 7
Unique genres: 6
```

Subproblem 2

```
Enter subquestion number to access its solution, or enter 0 to exit.
Enter choice: 2
Enter event type: Concert
Enter artist/band name: The Weekend
Enter genre: R&B
Enter date (YYYY-MM-DD): 2024-11-19
Enter time (HH:MM AM/PM): 10:00 PM
Enter stage number: 2
New event inserted.
```

```
☰ music_festival.txt
   1    Concert: Imagine Dragons, Rock, 2024-11-15, 08:00 PM, 1
   2    Workshop: Guitar Masterclass by John Mayer, Blues, 2024-11-15, 02:00 PM, 2
   3    Panel Discussion: Women in Music, Talk, 2024-11-16, 11:00 AM, 3
   4    DJ Set: DJ Snake, EDM, 2024-11-16, 10:00 PM, 4
   5    Concert: Taylor Swift, Pop, 2024-11-17, 09:00 PM, 1
   6    Talk: Music Production Tips, Talk, 2024-11-17, 03:00 PM, 2
   7    Concert: Coldplay, Alternative Rock, 2024-11-18, 08:30 PM, 1
   8    Concert: The Weekend, R&B, 2024-11-19, 10:00 PM, 2
   9
```

Subproblem 3

```
Enter subquestion number to access its solution, or enter 0 to exit.
Enter choice: 3
Event count by genre:
Rock: 1
Blues: 1
Talk: 2
EDM: 1
Pop: 1
Alternative Rock: 1
R&B: 1
```

Subproblem 4

```
Enter subquestion number to access its solution, or enter 0 to exit.
Enter choice: 4
Enter artist/band name: Taylor Swift
Events by Taylor Swift removed.
```

```
☰ music_festival.txt
   1    Concert: Imagine Dragons, Rock, 2024-11-15, 08:00 PM, 1
   2    Workshop: Guitar Masterclass by John Mayer, Blues, 2024-11-15, 02:00 PM, 2
   3    Panel Discussion: Women in Music, Talk, 2024-11-16, 11:00 AM, 3
   4    DJ Set: DJ Snake, EDM, 2024-11-16, 10:00 PM, 4
   5    Talk: Music Production Tips, Talk, 2024-11-17, 03:00 PM, 2
   6    Concert: Coldplay, Alternative Rock, 2024-11-18, 08:30 PM, 1
   7    Concert: The Weekend, R&B, 2024-11-19, 10:00 PM, 2
   8
```

Subproblem 5

```
Enter subquestion number to access its solution, or enter 0 to exit.
Enter choice: 5
Event count by time slot:
08:00 PM: 1 event(s)
02:00 PM: 1 event(s)
11:00 AM: 1 event(s)
10:00 PM: 2 event(s)
03:00 PM: 1 event(s)
08:30 PM: 1 event(s)
```

Subproblem 6

```
Enter subquestion number to access its solution, or enter 0 to exit.
Enter choice: 6
Total events: 7

Events grouped by genre:

Rock (1 events):
  - Concert by Imagine Dragons

Blues (1 events):
  - Workshop by Guitar Masterclass by John Mayer

Talk (2 events):
  - Panel Discussion by Women in Music
  - Talk by Music Production Tips

EDM (1 events):
  - DJ Set by DJ Snake

Alternative Rock (1 events):
  - Concert by Coldplay

R&B (1 events):
  - Concert by The Weekend


Enter subquestion number to access its solution, or enter 0 to exit.
Enter choice: ▐
```

Subproblem 7

(Implement subproblem 8 before 7)

```
Enter subquestion number to access its solution, or enter 0 to exit.
Enter choice: 7
All events deleted for the day.
```

```
≡ music_festival.txt
  1 |
```

Subproblem 8

```
Enter subquestion number to access its solution, or enter 0 to exit.
Enter choice: 8
Concert: Coldplay,  Alternative Rock,  2024-11-18,  08:30 PM,  1
DJ Set: DJ Snake,  EDM,  2024-11-16,  10:00 PM,  4
Workshop: Guitar Masterclass by John Mayer,  Blues,  2024-11-15,  02:00 PM,  2
Concert: Imagine Dragons,  Rock,  2024-11-15,  08:00 PM,  1
Talk: Music Production Tips,  Talk,  2024-11-17,  03:00 PM,  2
Concert: The Weeknd,  R&B,  2024-11-19,  10:00 PM,  2
Panel Discussion: Women in Music,  Talk,  2024-11-16,  11:00 AM,  3
```

Submission Mode:

Link is shared by Faculty member for set of students to in the current semester.

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