

Journal/Blog Module 05

1. Summarize what you've learned about the topics in Module 5.
2. Which of the definition of structure do you prefer to use? Why? Do you think you can use it in all possible instances? Try to make a structure using it (any kind of entity you want to use).
3. Why do you think a structure can never have an instance of itself?
4. When should you use '->' (structure pointer operator) and '.' (dot operator) when accessing a structure member?
5. What problems have you encountered in answering the exercise? How were you able to resolve them?
6. Have you encountered segmentation fault in structures/lists? If you haven't, list some reasons (at least two) why a segmentation fault would occur.

Exercise 05

Create a program that implements a music playlist using structures and files. The program must continue to run until the user picks exit.

Functionalities:

1. Create **two structures**. One for the **playlist** with the details: **name, song count, array of songs (size 10)** and one for the **song** with the details: **title, artist, album**.
2. The program must load the data each time it is ran and must save the data each time the user picks exit.

(a) Save Data

- You must check whether there is a data to be saved. If there are none, simply print a prompt saying so. Also, save count as 0 so that you will be able to keep track if file is empty.
- The format of the saved data must follow this:

Total Count of the Playlists	2
Name of Playlist 1	Taylor Swift
Number of Songs in Playlist 1	2
Title of Song 1	Sparks Fly
Artist of Song 1	Taylor Swift
Album of Song 1	Speak Now
Title of Song 1	Invisible String
Artist of Song 1	Taylor Swift
Album of Song 1	folklore
Name of Playlist 2	Favorites
Number of Songs in Playlist 2	0

(b) Load Data

- You must check whether the file exists. If the file exists, check if the count is 0. If the count is not 0, read each of the data in the file and save it in the array of structures.

3. Create a menu that shows:

(a) Add Playlist

- The user can put up to 10 playlists in the system. Make sure to check if the system is not yet full.
- If the system is not yet full, ask for the details of the playlist, and initialize the song count to 0. Remember to check that the name of the playlist is unique. If the name already exists, it musn't be added to the system.
- If the system is full, simply say that it is.

(b) Add Song to Playlist

- Make sure to check if there a playlist to add to. Ask which playlist to add the song to. If the playlist exists and it doesn't have 10 songs yet, ask for the details of the song. Else, print the appropriate prompts.

(c) Remove Song from Playlist

- Make sure to check if there is a playlist to remove from. Ask which playlist to remove songs from. If the playlist exists, and it isn't empty, ask which song to remove. If found, remove the song. Else, print the appropriate prompts.

(d) **View a Playlist**

- Make sure to check if there is a playlist to print. Ask which playlist to print. If the playlist exists, print all the details about it along with the songs. Else, print the appropriate prompts.

(e) **View all Data**

- This simply prints all of the available data in the system. Both the playlists and songs. Make sure to check if there is data to print.

(f) **Exit**

- When the user picks this, the program terminates.

4. Each choices except for the exit must be implemented inside a function. You also need to put `save()` and `load()` inside a function.

5. Do not forget to put documentation in your code.

Sample run:

```
Successfully loaded data!

===== MENU =====
[1] Add Playlist
[2] Add Song to Playlist
[3] Remove Song from Playlist
[4] View a Playlist
[5] View All Data
[6] Exit

Enter choice: 3

There are no playlists yet!
-----
===== MENU =====
[1] Add Playlist
[2] Add Song to Playlist
[3] Remove Song from Playlist
[4] View a Playlist
[5] View All Data
[6] Exit

Enter choice: 1

Enter playlist name: Taylor <3

Successfully added playlist!
-----
===== MENU =====
[1] Add Playlist
[2] Add Song to Playlist
[3] Remove Song from Playlist
[4] View a Playlist
[5] View All Data
[6] Exit

Enter choice: 1

Enter playlist name: Favorites <3

Successfully added playlist!
-----
===== MENU =====
[1] Add Playlist
[2] Add Song to Playlist
```

```
[3] Remove Song from Playlist
[4] View a Playlist
[5] View All Data
[6] Exit

Enter choice: 1

Enter playlist name: Taylor <3

Playlist name already exists!
-----
===== MENU =====
[1] Add Playlist
[2] Add Song to Playlist
[3] Remove Song from Playlist
[4] View a Playlist
[5] View All Data
[6] Exit

Enter choice: 5

PLAYLIST: Taylor <3
SONG COUNT: 0

PLAYLIST: Favorites <3
SONG COUNT: 0
-----
===== MENU =====
[1] Add Playlist
[2] Add Song to Playlist
[3] Remove Song from Playlist
[4] View a Playlist
[5] View All Data
[6] Exit

Enter choice: 2

THE PLAYLISTS AVAILABLE ARE:
  [0] Taylor <3
  [1] Favorites <3

Enter playlist number: 3

Invalid playlist!
-----
===== MENU =====
[1] Add Playlist
[2] Add Song to Playlist
[3] Remove Song from Playlist
[4] View a Playlist
[5] View All Data
[6] Exit

Enter choice: 2

THE PLAYLISTS AVAILABLE ARE:
  [0] Taylor <3
  [1] Favorites <3

Enter playlist number: 0
```

```
Enter song title: Sparks Fly
Enter song artist: Taylor Swift
Enter song album: Speak Now

Successfully added song to playlist!
-----
===== MENU =====
[1] Add Playlist
[2] Add Song to Playlist
[3] Remove Song from Playlist
[4] View a Playlist
[5] View All Data
[6] Exit

Enter choice: 2

THE PLAYLISTS AVAILABLE ARE:
    [0] Taylor <3
    [1] Favorites <3

Enter playlist number: 0

Enter song title: Invisible String
Enter song artist: Taylor Swift
Enter song album: folklore

Successfully added song to playlist!
-----
===== MENU =====
[1] Add Playlist
[2] Add Song to Playlist
[3] Remove Song from Playlist
[4] View a Playlist
[5] View All Data
[6] Exit

Enter choice: 5

PLAYLIST: Taylor <3
SONG COUNT: 2
    SONG TITLE: Sparks Fly
    SONG ARTIST: Taylor Swift
    SONG ALBUM: Speak Now

    SONG TITLE: Invisible String
    SONG ARTIST: Taylor Swift
    SONG ALBUM: folklore

PLAYLIST: Favorites <3
SONG COUNT: 0
-----
===== MENU =====
[1] Add Playlist
[2] Add Song to Playlist
[3] Remove Song from Playlist
[4] View a Playlist
[5] View All Data
[6] Exit

Enter choice: 4
```

```
THE PLAYLISTS AVAILABLE ARE:
  [0] Taylor <3
  [1] Favorites <3

Enter playlist number: 0

PLAYLIST: Taylor <3
SONG COUNT: 2
  SONG TITLE: Sparks Fly
  SONG ARTIST: Taylor Swift
  SONG ALBUM: Speak Now

  SONG TITLE: Invisible String
  SONG ARTIST: Taylor Swift
  SONG ALBUM: folklore
-----
===== MENU =====
[1] Add Playlist
[2] Add Song to Playlist
[3] Remove Song from Playlist
[4] View a Playlist
[5] View All Data
[6] Exit

Enter choice: 3

THE PLAYLISTS AVAILABLE ARE:
  [0] Taylor <3
  [1] Favorites <3

Enter playlist number: 1
Playlist is still empty!
-----
===== MENU =====
[1] Add Playlist
[2] Add Song to Playlist
[3] Remove Song from Playlist
[4] View a Playlist
[5] View All Data
[6] Exit

Enter choice: 3

THE PLAYLISTS AVAILABLE ARE:
  [0] Taylor <3
  [1] Favorites <3

Enter playlist number: 0

THE SONGS AVAILABLE ARE:
  [0] Sparks Fly by Taylor Swift
  [1] Invisible String by Taylor Swift

Enter song number to delete: 3
Invalid song number!
-----
===== MENU =====
[1] Add Playlist
[2] Add Song to Playlist
[3] Remove Song from Playlist
[4] View a Playlist
```

```
[5] View All Data
[6] Exit

Enter choice: 3

THE PLAYLISTS AVAILABLE ARE:
  [0] Taylor <3
  [1] Favorites <3

Enter playlist number: 0

THE SONGS AVAILABLE ARE:
  [0] Sparks Fly by Taylor Swift
  [1] Invisible String by Taylor Swift

Enter song number to delete: 0
Successfully deleted song!
-----
===== MENU =====
[1] Add Playlist
[2] Add Song to Playlist
[3] Remove Song from Playlist
[4] View a Playlist
[5] View All Data
[6] Exit

Enter choice: 3

THE PLAYLISTS AVAILABLE ARE:
  [0] Taylor <3
  [1] Favorites <3

Enter playlist number: 0

THE SONGS AVAILABLE ARE:
  [0] Invisible String by Taylor Swift

Enter song number to delete: 0
Successfully deleted song!
-----
===== MENU =====
[1] Add Playlist
[2] Add Song to Playlist
[3] Remove Song from Playlist
[4] View a Playlist
[5] View All Data
[6] Exit

Enter choice: 5

PLAYLIST: Taylor <3
SONG COUNT: 0

PLAYLIST: Favorites <3
SONG COUNT: 0
-----
```