Developer Documentation

SONGS

This is a generic program which means it involves the user to create a database where the songs can be stores. Each song has an explicit information attached to it for example: Song Title, Name of the Artist(s), Genre (rock, pop, hip-hop, jazz, classical, etc.), The year of Release, Name of the Album where this song belongs to or it's just a single, and lastly the Duration of the song(mm:ss).

The program is able to:

- Load existing database into memory.
- Add a new Song entry to the database.
- Create a new database if it doesn't exist already.
- save the database (from the memory) into a file.
- Display all songs of a user selected artist.
- Display all details of the songs of a user selected album.
- List all songs that were released in a user selected year.
- List all songs (title, performer, album, release year) of a user selected genre.

The program uses File Handling, Dynamic Memory allocation, Enumerations, Structures, Arrays and many more. The program has been divided into 2 modules: 1 .h file and the other .c file. Dot H file contains most of the Functions, Enumerations, Dynamic allocation, Arrays and Structures.

The functions that has been used are:

1. **main_menu :** This function prints the Main Menu on the Screen and takes the integer value to turn on the switch to decide for the options. User can choose only one at a time.
2. **second_menu:** This Second menu is for the Search of the items already present in the Database by category and orderly. It works the same way as the Main Menu works taking the integer value to turn on the second switch.
3. Which again decides for the options. Not all options are for search it can take the user back to the Main Menu or help it to exit from the Program.
4. **open_write() :** Open write function helps us to open and append the file. We can read and write both. The last added value if always saved so we always start from the last position.
5. **open_read() :** Open read function helps us to open and read the file only. We cannot write on it.
6. **null_check:** Null check functions whether the file pointer points to the dynamically allocated memory or not. Or it is pointing nowhere. The Error message will show that File Pointer Points nowhere.
7. **adding_song:** Adding song function helps us to add the song to the database sophistically. It takes in the value with help of scanf so it cannot take spaces. It helps to the information to the database as well as create if it doesn't exist already. Following are all added.

- Title of the Song.
- Artist(s).
- Genre of the Song.
- Name of the Album.
- Release Date of the Song.
- Length of the Song.

8. **Check :** Check for Y as Yes and N as No to confirm user for the further action with help of enumeration.
9. **search_engine :** Search engine function has the algorithm with increases the length of array with addition of new character variable . Which helps us to compare the character with Database to find out the stores values according to other search categories.
10. **search_artist :** Search Artist function goes into the Search Engine to to go to the file and print all the songs associated with one of the user inputted artist.

11. **search_album_name :** Search Artist function goes into the Search Engine to go to the file and print all the songs associated with one of the Album Name inserted by the user.

12. **search_genre :** Search Genre function goes into the Search Engine to go to the file and print all the songs associated with one of the user inputted Genre.
13. **search_release :** Search Artist function goes into the Search Engine to go to the file and print all the songs associated with one of the user inputted Year in which they were released.