

GRAD 695 Research Methodology & Writing Applied Project Proposal

Title: MusicOn, a music player emulator

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➤ Motivation

Audio is an important source of communication in our day-to-day life. We need an application that will allow us to play or listen to digital audio files. The music player is the device for playing MP3 and other digital audio files. The MusicOn Player application attempts to emulate the music player. The main goal of this project is to create music player emulator that have basic functionalities to enable users to play music and digital audio files. This product is capable of a feature that allows users to create a playlist using a database to store, update, insert, delete information on the created playlists. The MusicOn emulator application must be able to play a song, create and display a playlist, pause, and resume a long song, and change the song, play the previous or next song.

This application can play songs in multiple modes namely normal, loop, shuffle. This system can perform the features standalone as well as dependent on other features. The product in this project is a Music Player Simulator which can operate based on the user's input and supported by a Postgres SQL Database.

The functionalities of the music player emulator include:

1. Add a new song to library

To add a new song into the existing repository and helps in building the songs database with attributes title, artist, album, year, lyrics.

2. Delete a song from library

Removes any song from the repository based on various inputs from user using attributes like artist, title, year and genre.

3. Show songs in the library

Allows user to show all the attributes of songs present in the repository based on user input.

4. Search songs by artist in library

Lookup feature to search songs in song repository using the artist attribute.

5. Play a Song in library

emulates playing a song by slowly displaying the lyrics of the song selected by user based on the song attribute.

6. Create a playlist

Simulator allows users to create a user choice playlist to play the songs present in the repository by artist, title, year or genre.

7. Show all playlists

Displays all the existing playlists in the repository that users created and all the playlist in the repository from different users.

8. Add songs to the playlist

Allows users to add desired songs into their playlist and save the playlist in the repository.

9. Play songs in playlist

a). Normal Mode

b). Shuffle Mode

c). Loop Mode

Allows the simulator user to play the songs in the created playlist in multiple modes were

normal mode is playing the song user selects, shuffle mode shuffles the songs in the playlist and plays them in the generated shuffled order, Loop mode plays the songs one by one in a serial mode until user decides to stop playing.

10. Show recently played songs

Displays all the recently played songs using the simulator and helps users to add them into their playlists.

11. Exit from application

Helps terminating the simulator and saving all the data in the repository.

In addition to the above, an event logger feature is added to the project to record all events from a user, so that after exiting the application, the system will still know where to continue playing for this user next time. The events are planned to be stored in a database. As a emulator, the interaction between the user and the service will be done through the GUI with appropriate buttons. All the interactions are stored in the database for every user and will be used to resume from the action that is in play.

Skills Required:

I do have enough exposure of Python programming language. However, I am planning to learn the skill to develop GUI in Python. I am also looking to learn event driven behavior for my application.

Software:

Python, Tkinter/PySimple, PostgreSQL