CISC 699 Final Applied Project in Computer Information Sciences

Project Proposal Document

Project Title: MUSICON, a music player emulator

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Project Proposal from GRAD 695:

MUSICON project is a software artifact, allowing users to play, pause, resume, and skip audio files as they wish. MUSICON starts with the display of its functions via an infinite loop for the user's comfort and usability. The major functionalities cover letting users check their permissions supported by the backend MySQL database. It allows users to create their own account and super users provide relevant access and the features available will be decided based upon the permissions. Superusers are responsible for any sort of maintenance related to DB w.r.t adding, deleting, and updating users and songs as and when items are available to be put in DB. MUSICON allows users to group the songs of their liking and place them under one category named playlist. Each user can create 1 or many playlists. Users are allowed to play audio files in any order which can be the sequential, random, or looped way. These modes are applicable to single audio files or multiple audio files via creating a playlist. It can mine the DB present in the backend to well assist users with their choice made from the existing menu options. It is an interactive music player emulator that requests user interaction at each, and every choice made. MUSICON is well supported by a tightly connected, fully relational database in the back end. The interactive menu is printed below:

```
---------------------------- MUSICON ----------------------------
0.   Menu
1.   Add a new song to library
2.   Delete a song from library
3.   Show songs in library
4.   Search by song name or artist
5.   Play a song present in Library
6.   Create a playlist
7.   Show all playlists
8.   Add songs to the playlist
9.   Play songs in playlist
10.  Show recently played songs
11.  Exit
-----------------------------------------------------------------

please enter your user name: user1
checking for existance of user in DB
```

Addendum for CISC 699:

MUSICON is a software application that doesn't let users run only few sets of options, the new feature to this application is listed as below:

1. Provide music mixes to users based on their past usage of the application to play songs.
2. Provide music recommendations to users based on artist.
3. Provide music recommendations to users based on genre.
4. Provide music recommendations to users based on album.
5. Add support to run just a single song in loop mode.

MUSICON is not just a software that runs only mp3 or audio files, it would allow an addition to run AM/FM from the application.

1. Users can select the FM/AM based on location.
2. Users can select the FM/AM based on frequency after picking the location.
3. Users can select any station based on category (sports/news/traffic)

MUSICON will be capable of adding support to play podcasts category for their daily purpose of audio to listen.

1. Users can select their favorite podcasts from the available in the database.
2. Users can select by podcasters.
3. Users can select by category (investment, education, meditation, sleep etc.).

The application and their categories are not only limited to the above-mentioned list but will be many more as the application goes on.

Tech Stack:

- Python as Programming Language (Python3)
- Jupyter Notebook (from Anaconda Navigator)
- Python for music mixer (pygame)
- MySQL for DB storage (pymysql)
- Pandas DF for data operations (Pandas)
- Many more python libraries on the development