Hardware Assignment Report

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1 Aim

Aim of this assignment is to make a python script which can make a playlist of songs and shuffle them. The songs must be shuffled such that each song in the playlist is played before it gets looped.

2 Overview

- Use of numpy library is allowed to randomize playlist.
- The songs must be played through either terminal or GUI.
- Tkintker library has been used in the program to make the window.
- PyGame library has been used to play audio files.
- Soundfile library is used for reading and writing audio files. It provides a simple interface to access and manipulate audio data from various file formats, such as WAV, FLAC, OGG, and more.
- os module has been used to search file directory so as to play music from any desired music folder.

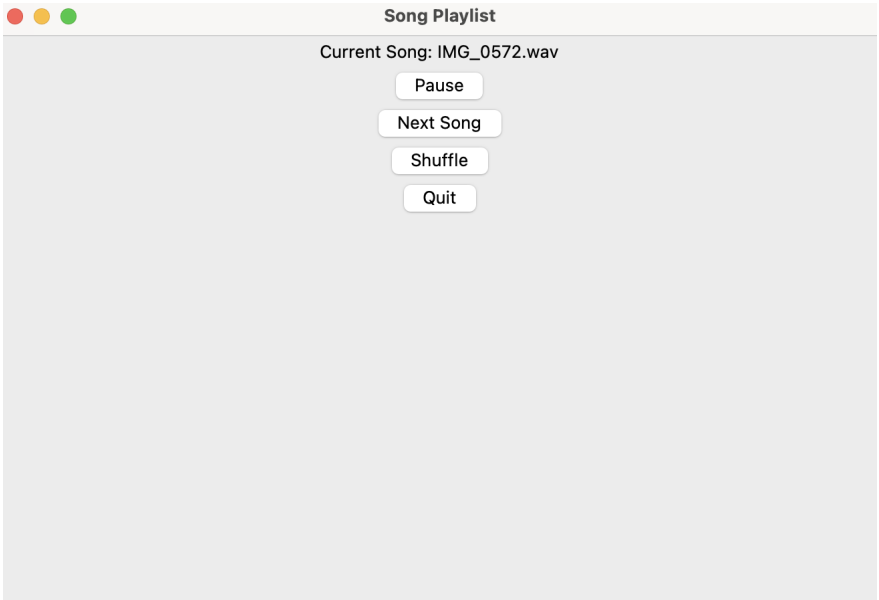

Figure 1: Interface of the Music Shuffler

3 Working

1. The program scans the default folder and makes a list of all the .wav files present in it.
2. shuffle function in the program randomizes the order of the music files.
3. Because the function only randomizes the order, there is no repetition of songs in the playlist, which is one of the conditions of the assignment.
4. File managing is done completely through os module functions.
5. Audio file playback is handled entirely through PyGame module functions.

3.1 Shuffle function

1. It replaces two elements with the second element to be replaced taken from randint function of numpy.random.
2. As it replaces the elements, there is no repetition in the playlist.
3. This function is executed whenever the playlist reaches the last song and user presses next song button.

4 Notes

- All of this code can easily be converted into a terminal script, as the functions are not part of the tkinter library.
- The program can be used to play .wav files present in any directory.
- This can be used to play .wav audio formats in a shuffled way, if the playback functions are changed accordingly.