Software Assignment

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***Abstract*—In the assignment, we had to make a Music Player in python.**

Process

1) I used the numpy module to randomly permute or shuffle the playlist of songs.
2) I have also used two more libraries, pygame and os.
3) To make UI, I have taken help of the online sources and customised it.
4) I have created two buttons in my UI, which are pause and next buttons.
5) By clicking on the pause button, the song will pause, if the song was playing or will resume, if the song was already paused.
6) By clicking the next button, current song will terminate and next song will start playing.

Numpy.Random.Shuffle

The np.random.shuffle function in NumPy is used to randomly permute or shuffle the elements of an array in place. In terms of probability, np.random.shuffle can be seen as a process that generates a random permutation of the elements in the array, where each possible permutation is equally likely.

Let's consider an array with N elements. When you apply np.random.shuffle to this array, it randomly reorders the elements, creating a new permutation. The number of possible permutations of N elements is N!, which is the factorial of N. Each of these permutations has an equal probability of being generated.

In our case we have 20 songs so we have 20! ways to permute the array of 20 songs each and each permutation will get a uniform probability of getting selected of $\frac{1}{20!}$

Snap of My Music Player