

Software Assignment

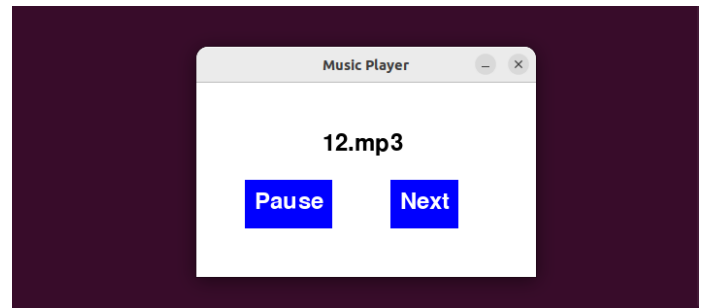
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Abstract—In the assignment, we had to make a Music Player in python.

SNAP OF MY MUSIC PLAYER

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 $\frac{1}{20!}$