AI 1110 Assignment 1

Name: Shreyas Premkhede
Roll no.: CS22BTECH11053

Abstract—**In this assignment we made a Music player in python which uses numpy module of python to shuffle the songs and play in the loop**

PROCESS

1) I have used numpy module to randomise or shuffle the song with help of customized numpy.random.randint()
2) A list of the played songs is available on the terminal
3) Also the current playing song can be seen in the Media Player.
4) The list is stored in an array called audio files.
5) To shuffle the list using customized randint(), I have created an integer array storing numbers from 0 to 19 and randomizing them.
6) The randomized array numbers operates as the indices of the the audio files that needs to be played, thus, randomizing the songs as well.

WORKING

1) The GUI class in being made, which creates an GUI interface.
2) Using tkinter module the buttons are created for Play,Pause/Resume,Stop and Next.
3) Methods are also implemented for the aforementioned which also consist of labels denoting the current song status.
4) Randomization of the array occurs in the main function created.
5) The randomization of the array is done such that it will generate the numbers such that no two of them are equal.It works as follows-

Let's consider an array with N elements. When you apply this to the 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.

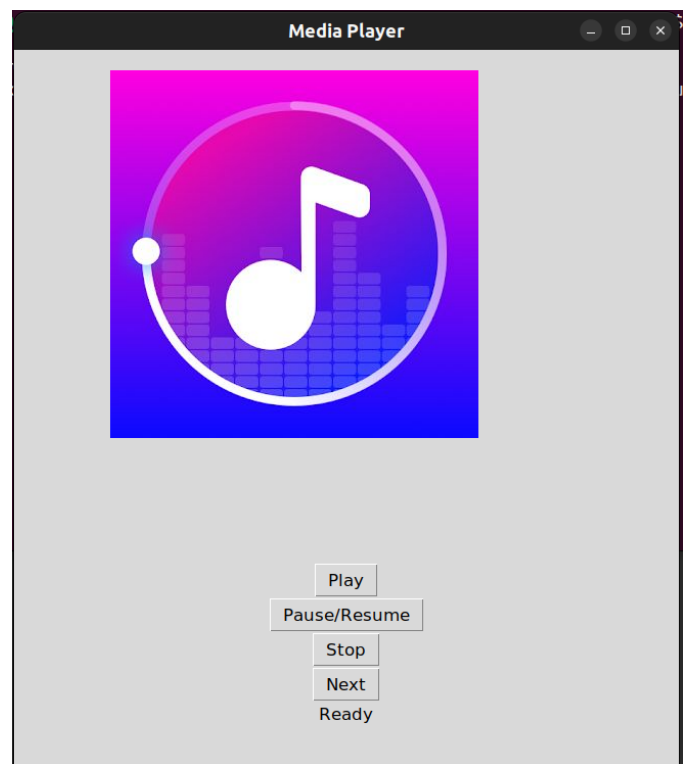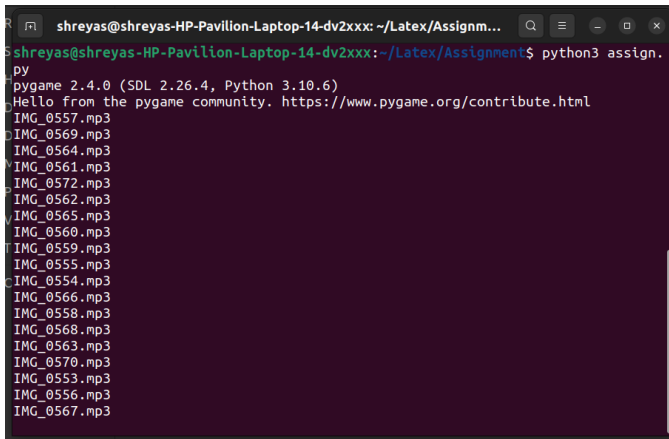In our case we have 20 songs so we have 20! ways to permute the array of 20 songs each and

each permutation will get a uniform probability of getting selected of $\frac{1}{20!}$

SOME SNAPS OF MY MUSIC PLAYER

Fig. 5. This is how My music player looks normally in the new interface created

Fig. 5. Playing songs that are appearing on the linux terminal