Music Player Code Report - AI1110

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I. Introduction

This report provides an overview and analysis of the Python code for a music player implemented using the Tkinter and Pygame Modules. It also includes a song shuffling function.

II. Code Explanation

A. Music Player

- The code starts by importing the necessary modules: Tkinter and Pygame.
- It initializes the Pygame mixer using `mixer.init()`.
- The `playSong()` function is defined to play a song. It checks the index of the song in the `songShuffler` module and loads and plays the corresponding song using the Pygame mixer.
- The code then creates a GUI using Tkinter. It creates a window titled "Music Player" with a fixed size.
- Several buttons are defined: "play", "next", "stop", "pause", and "resume". These buttons are associated with specific commands to control the music playback using the Pygame mixer functions.
- The "song" label displays the current song playing in the music player.
- The GUI layout is organized using the grid system, and the buttons are placed in different rows and columns within the root window.
- Finally, the GUI is updated and the main event loop is started using `root.update()` and `root.mainloop()`.

B. Randomizer

- The function takes two arguments, `start` and `end`, representing the range of numbers to be shuffled.
- It initializes an array called `songs` with `None` values to store the shuffled songs.
- A separate array called `visited` is initialized to keep track of which numbers have been visited.
- The function uses a while loop to generate a random song number between `start` and `end` (inclusive).
- It checks if the generated song number has already been visited. If so, it generates a new random number until an unvisited number is found.
- Once an unvisited number is found, it is added to the `songs` array and marked as visited in the `visited` array.
- The process continues until all the songs have been added to the `songs` array.
- Finally, the shuffled `songs` array is returned.

III. Conclusion

The code provides a basic implementation of a music player using the Tkinter and Pygame libraries in Python. It also includes a song shuffling function that generates a random permutation of numbers within a given range. This function can be used to shuffle the songs played by the music player, adding variety to the playlist.