

Assignment 1

This program uses the `fgets()` function to read input from the command line. This function is used to read a line from the input stream and store it in a buffer. This program uses `fgets()` to read the artist name and song title entered by the user.

The program uses a simple bubble sorting algorithm to sort songs by artist and title. The algorithm iterates over the list of artists and their songs, comparing adjacent items and swapping them if they are out of order. Bubble sort was probably chosen for its simplicity, but it is not the most efficient sorting algorithm for large datasets.

The shuffle algorithm implemented in the program is the modified Fisher-Yates shuffle (also known as the Knuth shuffle). The algorithm works by going through a list of songs in reverse order and randomly selecting a song from all remaining unshuffled songs. The selected song will replace the currently mixed song. This process repeats until all songs are shuffled. This program uses the `srand()` and `rand()` functions to implement the shuffle algorithm and generate random numbers used to select songs to shuffle. The mixed songs are stored in separate arrays called playlists.