Project 3: Song Database JavaFX

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# Building Song Database

This writing contains information for solution of Song Database built using JavaFX as directed by Project 3 assignment. The objective of this project was to utilize the skills and tools gained from the beginning of the course to the now module 13 learnings. The task is to database that stores songs entered and have a bit of fun doing it.

## Design and Analysis:

The program was created to meet minimum requirements of this project. The program was very challenging compared to the initial two projects. Much of the programming was relatively new, the programmer utilized every resource to place the logic with new tools learned from module 12.

### General Programming Design

Program organization follows with the main program SongDB including (1) Write up of program objectives (2) All needed imports (3) Variable callouts underneath the class Song DB (3b) The start to the staging which houses the initial GUI introduction (4) Static void call for JavaFX launch used for IDE with logic to fill array list & read in file (5) Method to use the read in file and make the array list match internal JavaFX array list (6) More methods to be used as the actions for the button clicking and the Combobox logic. There is a Song.java class which feeds into the DB file as well. The Song.java file has the same toString and set/get methods we are familiar with using song default, name, code, description, artist, album and price.

Structure of entire code is one whole class to store, a mixture of for’s, if’s, objects, a write out, a read in, collections array lists and much of the new JavaFX interfaces we learned. Within callouts, small arithmetic was used to complete desired action placed by user and general logic to help store the items in the correct places using the array list and Combobox features. Methods and class call outs were used wherever possible as to reduce the redundancies of the algorithm, shorten huge lines of code in main body and make the code look neater. It should be said that the code could do some work to reduce the number of lines inputted in it see Figure 1.

One thing that is noticed is how the buttons hold the changes to the GUI. Each time the accept is pressed it clears and places a new GUI. It seemed to work well this way after the structure was built in the staging. It was surprising to see how well it worked, thoughts of erroring were nerve wrecking. There are a total of eleven commands the user interfaces with. From the beginning of the program to read in a file, using the add/edit/delete/accept/cancel commands and the final exit which will write out the saved information into to a “.txt” file.

### Alternatives

There were other approaches that were made evident upon research of the project. It was tempting to use the “swing” version though as mentioned in the instructions, it would have set the timeline back a bit. Most of the structure of the program came from the help of the assignment 12 setup. There are many reuses of code to set the “textfield” as empty could be placed in method to reduce the huge lines of code. There is most likely a better way to reset the GUI to the desired next interface after the command. It just happened to work the way it was inputted. There is some curiosity how others have done it. Instead of using the array list as a collection tool, the use of the Hashmap would have worked as well perhaps. The edit command was actually a monster to setup and spent a lot of time. mostly due to the small knowledge of the JavaFX capability with the GUI.

One huge problem was the main method “static array list”. Two array lists named song and list were setup. List was used in the main method and needed to be labelled static. Unsure why but it seems like in IDE it worked to read in and place in the song array from communication with the method readSongFromListArrayToSongArray(). When placing in Java command prompt it did not work. There are different ways to tackling this problem and would want to see other options as alternative (V\_Singh, 2014).

### Learning Outcomes

The learning curve on this project was very substantial, this was a whole new level of different tools one is used to. (1) The benefit of learning how to interface with a GUI was huge (2) It strengthened the confidence in understanding the use of the Class and write/read statements (3) Improved the use of the methods and how else they can be used with the functionality with commands/buttons (4) How the user can interface with GUI and background program.

The code was completed with a weeks’ worth of time left which gave the programmer time to clean up other areas to be improved.

## Wrap Up:

This project challenged students in many ways. Not only were they building a new program, they were also challenged to incorporate very new tools gained while working through the module 12 introduction to JavaFX. The learning outcomes were very useful for future real-world applications.

# References

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# Appendix A

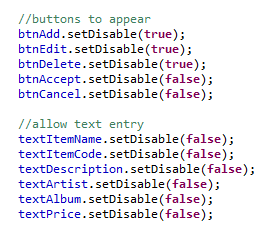


Figure . Code above was used plenty of times on the button action events