README section:

Imports:

Pymysql: Link to download https://pypi.org/project/PyMySQL/

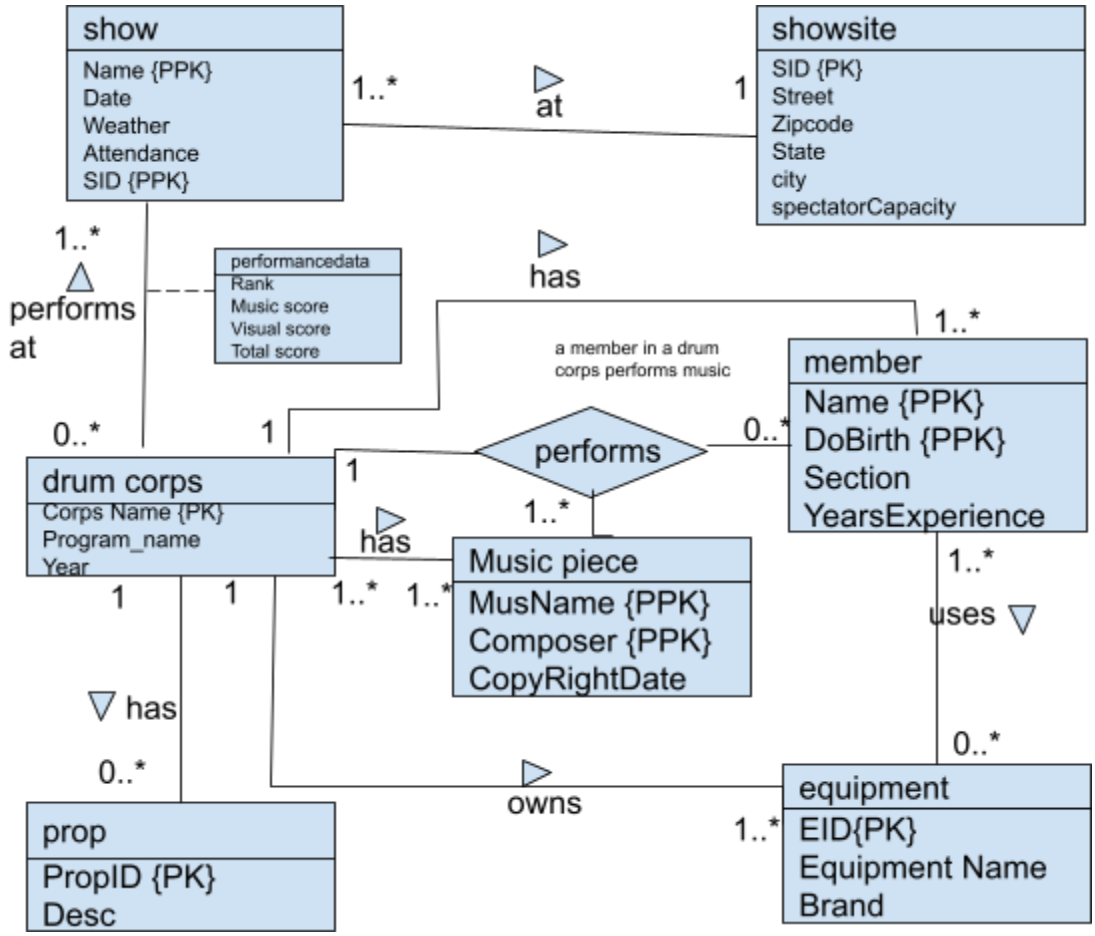
Software:

Python: I use anaconda navigator, link to download
https://docs.anaconda.com/anaconda/install/index.html

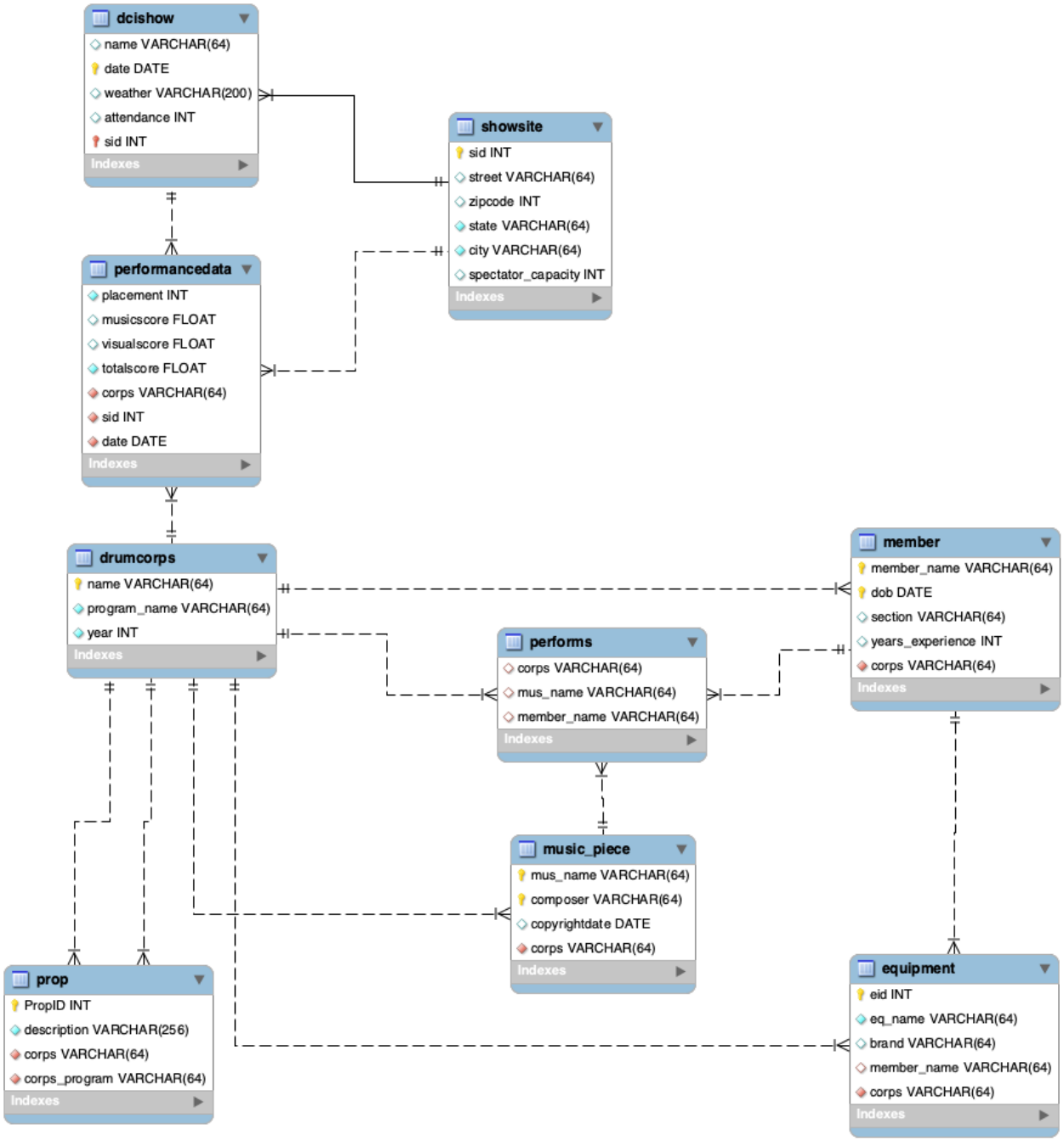
MySQL Workbench: Link to download
https://dev.mysql.com/downloads/workbench/

Technical Specifications: My host language was python and I used pymysql as my connector to my database

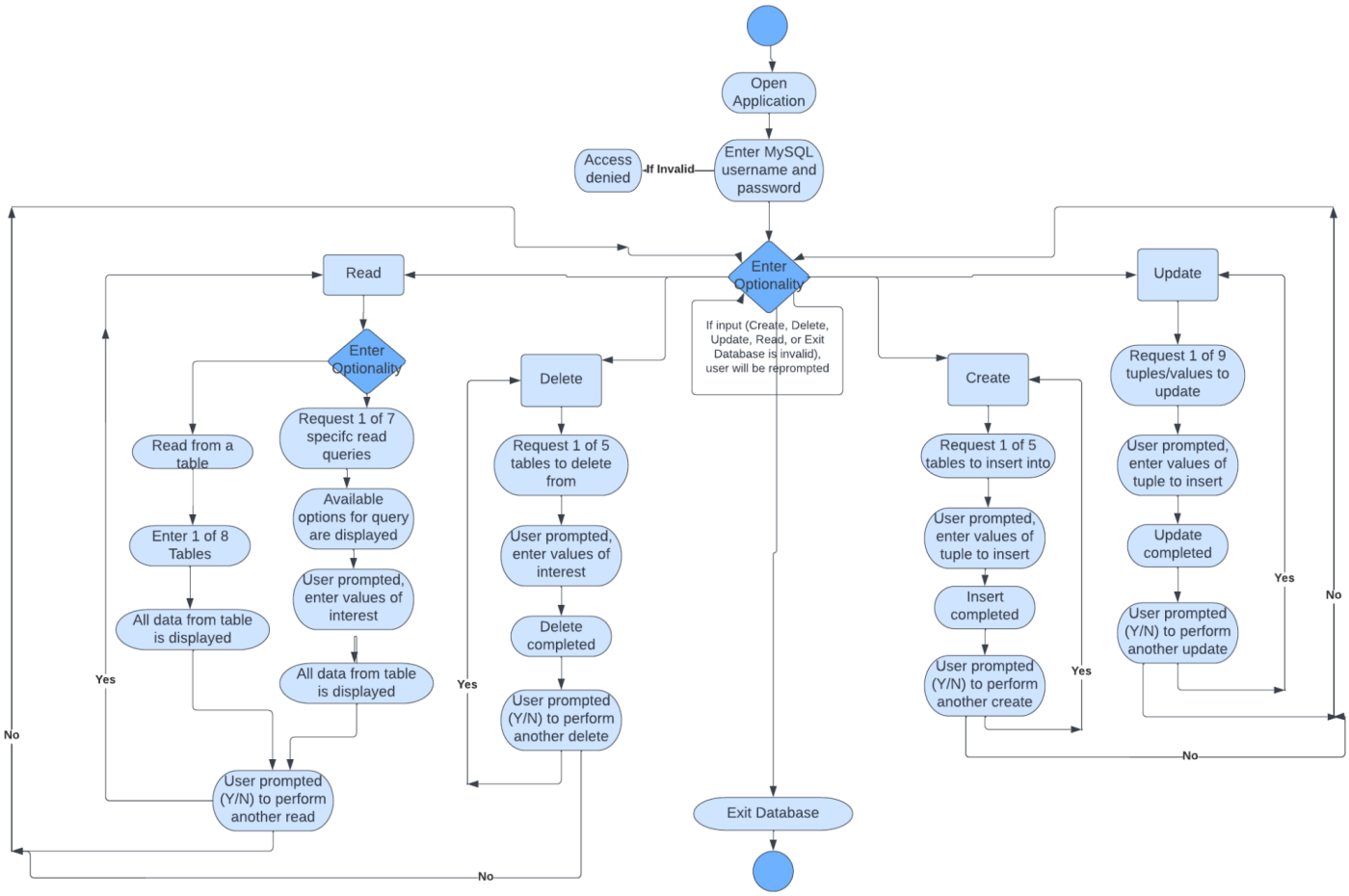
UML Diagram:



Logical Design:



System Flow:



User commands: User will be prompted to either enter a text response (with listed options), or a numerical value (range of acceptable values listed). If a user inputs an invalid choice for any of the CRUD operations, the system will re-prompt the user.

Lessons Learned:

In general my main takeaways were procedure creation and database to application connection. I had a lot of difficulty with homework 7 and creating procedures, triggers, prepared statements, etc. In this project I inevitably had immense practice with creating procedures as I had 9 tables to create CRUD operations for, and I was working alone. Throughout this process I learned some intricacies of mySQL such as specific MySQL errors related to creating and calling procedures. Additionally, working with the database connection application was

extremely fruitful for me, and I learned that utilizing mySQL capabilities via my host language was much easier than I expected. I know that this practice will be useful to me in the future. I have spent the past week pretty much fully immersing myself into this project and I have come to be pretty comfortable with these two skills.

Though I had started the project much prior, I left myself about the past week to really delve into the meat of the work. In terms of time management, I wish I had left myself more time, because as I learned, creating many procedures, and fine-tuning the front-end code can be a very long and tedious process. If I had more time I might have been able to check through my application many more times, and ensure that it is fully operational and completely error-free.

In my original plan for this project, I had hoped to utilize data from many years of drum corps through my own pre-existing csv file and manual inputs, but this came to be a large obstacle for me. The table import wizard was not working for me, so I attempted to insert tuples manually, but ran into issues with primary keys not existing for inserting tuples into tables with incomplete data. I also attempted using my host language, which I am more comfortable with, to iterate through my data and more specifically insert data into tables, but once again ran into many issues. In the end, I couldn't get this data import to work, so I had to stick to manual inserts through MySQL.

To my knowledge, all of my code is operational.

Future Work:

For context DCI is a relatively large activity, but public data surrounding active drum corps, shows, and members are rare and largely inaccessible. I am extremely involved in this activity, and I would like to provide a way to allow drum corps fans and members to access data and keep data updated as seasons progress. Having a fully operational database application for drum corps data could be useful to administration and leadership in the activity to improve organization and even optimize success through analysis of past seasons.

One functionality that I would have loved to include is data visualization. Many people in the activity have misguided conceptions about indicators for success, and I believe that available visualizations would give fans and members an accessible way to understand drum corps data. Some ideas I have for visualizations:

- Comparison dot plots for multiple drum corps showing scores vs. time
- Correlation heatmap comparing total score (success) with attributes such as prop usage, modern music, or average member years of experience

- Generate map with scaled colors representing the prevalence of drum corps shows in different states

Currently my database is only operational for one year at a time. It is extremely important to me to be able to compare multiple years, so eventually I would like to redesign my schema to allow for many years of available drum corps data.