CSCE 156 – Computer Science II

Lab 7.0 - SQL I - Worksheet

Names _____

For each question, write an SQL query to get the specified result. You are highly encouraged to use a GUI SQL tool such as MySQL Workbench and keep track of your queries in an SQL script so that lab instructors can verify your work. If you do, write your queries in the script file provided rather than hand-writing your queries here.

Simple Queries

1. List all albums in the database.
2. List all albums in the database from newest to oldest.
3. List all bands in the database that begin with "The".
4. List all songs in the database in alphabetic order.
5. Write a query that gives just the `albumId` of the album "Nevermind".

Simple Aggregate Queries

6. Write a query to determine how many musicians are in the database.
7. Write a (nested) query to list the old(est) albums in the database.
8. Write a query to find the total running time (in seconds) of all tracks on the album *Rain Dogs* by Tom Waits

Join Queries

9. Write a query list all albums in the database along with the album's band, but only include the album title, year and band name.
10. Write a query that lists all albums and all tracks on the albums for the band Nirvana.
11. Write a query that list all bands along with all their albums in the database *even if they do not have any.*

Grouped Join Queries

12. Write a query list all bands along with a *count* of how many albums they have in the database (as you saw in the previous query, some should have zero).
13. Write a query that lists all albums in the database along with the number of tracks on them.
14. Write the same query, but limit it to albums which have 12 or more tracks on them.
15. Write a query to find all musicians that are not in any bands.
16. Write a query to find all musicians that are in more than one band.

Advanced Activities

1. SQL supports basic arithmetic operations (`+, -, /, *, %`) in its queries. Design an SQL query that calculates the total running time for a particular album (identified by AlbumID) by selecting two columns: minutes and seconds which both should be whole integers. Then create a query that returns the running time as a string in the format, "mm:ss" (hint/warning: string formatting is specific to particular databases and is not standard SQL; for MySQL see the `LPAD` and `CONCAT` functions).
2. Read up on the syntax for creating a view–a stored query that creates a virtual table that can be queried as if it were an actual table in the database. Create a view in your album database to "flatten" the album and song data into one accessible table; include the following columns: `albumId, albumTitle, bandId, trackNumber, songId, songTitle`.