

In-class Exercise: Advanced SQL Queries (24 Apr 2023)

CSC105 WEB APPLICATION DEVELOPMENT

Due Date: Wednesday, 26 April 2023, 12:00 PM. Submit on the **SQL Playground**

(<https://sqlworkshop.bsthun.com/>)

Installation Instructions:

1. Register JetBrains Free Education License.
(<https://www.jetbrains.com/community/education/#students>)
 2. Download DataGrip Software.
(<https://www.jetbrains.com/datagrip/download/#section=windows>)
 3. Go to SQL Playground website and start the workshop. (<https://sqlworkshop.bsthun.com/>)
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Instruction: Write the SQL statement to retrieve the data from the database as provided.

Spotify01 – Level 1

1. Show all data from table 'lv1_tracks'.

Description: Show all rows and all columns from table 'lv1_tracks' without any condition and let MySQL use default sorting for the result.

Hint:

- Suggested query: mysql query all rows and columns of a table.
- This will query all rows and all columns from a table.

2. Show first 10 rows of data from table 'lv1_tracks'.

Description: Show first 10 rows and all columns from table 'lv1_tracks' without any condition and let MySQL use default sorting for the result.

Hint:

- Suggested query: mysql query first n rows of a table.
- This will query first 10 rows and all columns from a table.

3. Show only columns of 'name', 'album' and 'artist' of all data from table 'lv1_tracks'.

Description: Show all rows and only columns of 'name', 'album' and 'artist' from table 'lv1_tracks' without any condition and let MySQL use default sorting for the result.

Hint:

- Suggested query: mysql query only specific columns of a table.
- This will query all rows and specific columns from a table.

4. Show only columns of 'name', 'album' and 'artist' of first 10 rows from table 'lv1_tracks'.

Description: Show first 10 rows and only columns of 'name', 'album' and 'artist' from table 'lv1_tracks' without any condition and let MySQL use default sorting for the result.

Hint:

- This will query all rows and specific columns from a table.

5. Show all data from table 'lv1_tracks' sorted by 'name' in ascending order.

Description: Show all rows and all columns from table 'lv1_tracks' without any condition and sort the result by 'name' in ascending order.

Hint:

- Suggested query: mysql query all rows and columns of a table and sort by one column.
- This will query all rows and all columns from a table and sort the result by 'name' in ascending order.

6. Show all data from table 'lv1_tracks' sorted by 'name' in descending order.

Description: Show all rows and all columns from table 'lv1_tracks' without any condition and sort the result by 'name' in descending order.

Hint:

- Suggested query: mysql query all rows and columns of a table and sort by one column.
- This will query all rows and all columns from a table and sort the result by 'name' in descending order.

7. Show the names of songs that start with 'The'.

Description: Show all songs whose names start with 'The' and allow MySQL to use the default sorting for the results.

Hint:

- Use 'LIKE' operator

8. Find the names of songs based on a condition.

Description: Show songs whose names start with 'E' or 'J' and allow MySQL to use the default sorting for the results.

9. Find songs by year.

Description: Show the names of songs released in 2022 and allow MySQL to use the default sorting for the results.

10. Find the names of songs that were released in 2022 and whose names end with 'e'.

Description: Show names of the song that released in 2022 and name ending with 'e' and let MySQL use default sorting for the result.

11. Count all rows.

Description: Show number of songs in table lv1_track and let MySQL use default sorting for the result.

12. Find out the latest year the song was released.

Description: Find out the latest year the song was released and let MySQL use default sorting for the result.

Hint:

- Use 'MIN()' and 'MAX()' functions

13. Find out the year of the oldest song.

Description: Find out the year of the oldest song and let MySQL use default sorting for the result.

Hint:

- Use 'MIN()' and 'MAX()' functions

14. Find the songs with the longest duration.

Description: Show all rows of songs with the longest duration.

Hint:

- Sort by duration to find the songs with the longest duration.

15. Find the song with the shortest duration.

Description: Show all rows of songs that the shortest duration.

Hint:

- Sort by duration to find the songs with the shortest duration.

Spotify02 – Level 2

1. Show first all rows of data from table 'lv2_tracks'.

Description: Show first all rows and all columns from table 'lv2_tracks' without any condition and let MySQL use the default sorting for the results.

2. Show first 10 rows of data from table 'lv2_albums'.

Description: Show first 10 rows and all columns from table 'lv2_albums' without any condition and let MySQL use default sorting for the result.

Hint:

- Suggested query: mysql query first n rows of a table.
- This will query first 10 rows and all columns from a table.

3. Show only name of track and album of all data.

Description: Show only name of track and album of all data and let MySQL use default sorting for the result.

Hint:

- Suggested query: mysql query only specific columns of a table.
- Join table track and album.

4. Who's that artist.

Description: Show the name of only the 3rd artist whose name starts with the letter 'B'. Let MySQL use default sorting for the result.

Hint:

- Use 'LIKE' operator and 'LIMIT' clause.

5. Show only track and album names with the same name.

Description: Show only track and album names with the same name and let MySQL use default sorting for the result.

6. Show the name of the song along with all albums sorted alphabetically by song name.

Description: Show the name of the song along with all albums and sorted a-z by name of song.

7. Find the names of artists who have more than one album.

Description: Find the name of the artist with more albums and how many albums that artist has and let MySQL use default sorting for the result.

Hint:

- Learn more: <https://learnsql.com/blog/how-to-find-duplicate-values-in-sql/>

8. Show name of song that start with 'The'.

Description: Show the name of the artist with the most albums and the number of albums that artist has and sort the number of albums from high to low.

Hint:

- Use 'LIKE' operator.

9. Find the name of a song by a particular artist's name.

Description: Find all the songs of the artist named '闫东炜' and let MySQL use default sorting for the result.

10. Find the name of the artist and album for a given song name.

Description: Find the name of the artist and album for the song 'Wish I Never Loved You'.

11. Show songs from the albums that start with the letter 'P'.

Description: Show the names of the songs in the album starting with the letter 'P' and let MySQL use default sorting for the result.

12. Find songs using two conditions three joins.

Description: Find the names of songs in the albums that start with the letter 'P', or by artists whose names start with the letter 'T'. Use two conditions and join the tables as necessary and let MySQL use default sorting for the result.

13. Find the track names and durations, sorted by name and duration respectively.

Description: Find the names and durations of tracks sorted by name and then by duration.

14. Show the artist's name based on a provided description.

Description: Show the 'name' column from lv2_artists table in ascending order. Filter the results to show only the artists who have published an album before 2023 and have a track popularity less than 10. Each artist name should only be displayed once.

Hint:

- Use 'WHERE' and 'ORDER BY' clauses.

15. Show the names of the artists and their albums.

Description: Show the names of the artists and their albums that start with letter 'A' and were published during the years 2015 to 2020.

Hint:

- Use 'LIKE' operator.

End of In-class Exercise