Hands-on Lab: Simple SELECT Statements



Estimated time needed: 20 minutes

In this lab, you will learn one of the most commonly used statements of SQL (Structured Query Language), the SELECT statement. The SELECT statement is used to select data from a database.

Objectives

After completing this lab, you will be able to:

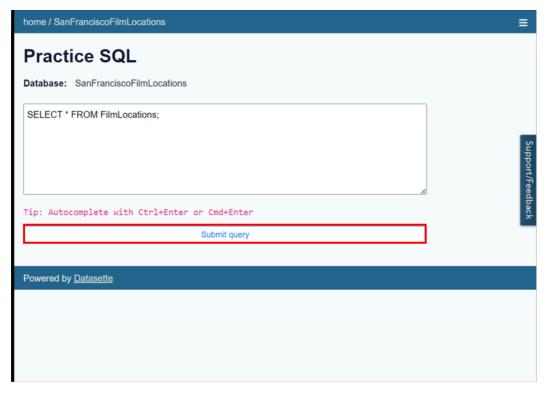
- Query a database to obtain a response as a result set
- · Retrieve all or selected columns of a dataset
- · Apply criteria commands to filter the result set

Software Used in this Lab

In this lab, you will use Datasette, an open source-tool for exploring and publishing data. You can visit the <u>Datasette GitHub repository here</u>.

Working with Datasette

The Datasette tool offers a platform to input and execute SQL queries. By clicking the Submit query button, you can execute the SQL query.



Database Used in this Lab

The database used in this lab comes from the following dataset source: Film Locations in San Francisco under a PDDL: Public Domain Dedication and License.

Exploring the Database

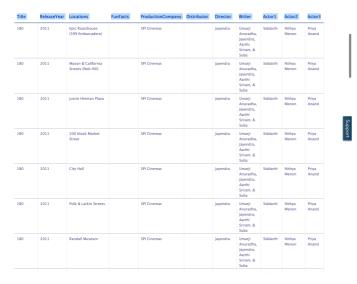
Let's first explore the SanFranciscoFilmLocations database using the Datasette tool:

- 1. If the first statement listed below is not already in the Datasette textbox on the right, then copy the code below by clicking on the little copy button on the bottom right of the code block below and then paste it into the textbox of the Datasette tool using either Ctrl+V or right-click in the text box and choose Paste.
- 1. :
- SELECT * FROM FilmLocations;

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Practice SQL
Database: SanFranciscoFilmLocations
1 SELECT * FROM FilmLocations;
Tip: Autocomplete with Ctrl+Enter or Cmd+Enter

- 2. Click Submit Query.
- 3. Now, you can scroll down the table and explore all the columns and rows of the FilmLocations table to get an overall idea of the table contents.



4. These are the column attribute descriptions from the FilmLocations table:

```
1. 1
2. 2
3. 3
4. 4
5. 5
6. 6
7. 7
8. 8
9. 9
11. 11
12. 12
13. 13
```

 FilmLocations(Title: 3.

titles of the films,

ReleaseYear:

time of public release of the films, locations of San Francisco where the films were shot, 4. Locations:

FunFacts: funny facts about the filming locations, companies who produced the films, companies who distributed the films, ProductionCompany: 6. 7. Distributor: Director: people who directed the films, 9. Writer: people who wrote the films, person 1 who acted in the films, 10. Actor1: 11. Actor2: person 2 who acted in the films, 12. Actor3: person 3 who acted in the films

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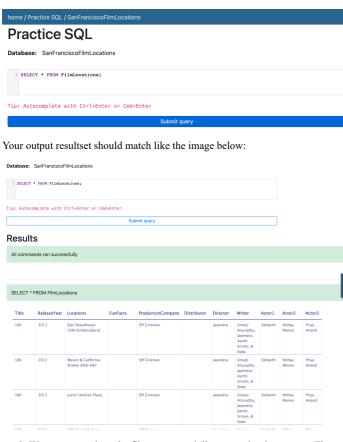
Using SELECT statement

Now, let's go through some examples of SELECT queries.

- 1. Suppose we want to retrieve details of all the films from the FilmLocations table. The details of each film record should contain all the columns. The query statement for this is:
- 1. 1
- SELECT * FROM FilmLocations;

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Copy the solution code above and paste it to the textbox of the Datasette tool. Then click Submit query.

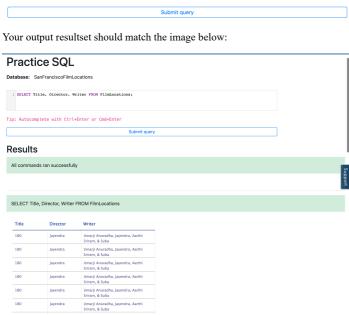


- 2. We want to retrieve the film names and director and writer names. The query now would be:
- 1. 1
- SELECT Title, Director, Writer FROM FilmLocations;

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Copy the solution code above and paste it to the textbox of the Datasette tool. Then click **Submit query**.





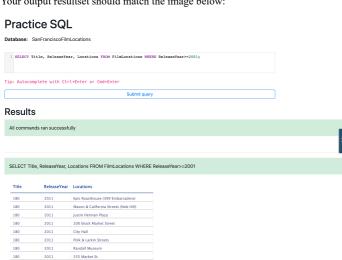
- 3. We want to retrieve film names along with filming locations and release years. But we also want to restrict the output resultset to retrieve only the film records released in 2001 and onwards (release years after 2001, including 2001).
- 1. 1
- SELECT Title, ReleaseYear, Locations FROM FilmLocations WHERE ReleaseYear>=2001;



Copy the solution code above and paste it to the textbox of the Datasette tool. Then click **Submit query**.



Your output resultset should match the image below:



Practice exercises on the SELECT statement

- 1. Retrieve the fun facts and filming locations of all films.
- ▼ Click here for a hint

Follow example 2 of SELECT, where records containing details of some particular columns have been retrieved.

- ▼ Click here for the solution

 - 1. SELECT Locations, FunFacts FROM FilmLocations;

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lacktriangledown Click here for the output

Practice SQL

Database: SanFranciscoFilmLocations

1 SELECT Locations, FunFacts FROM FilmLocations;

Tip: Autocomplete with Ctrl+Enter or Cmd+Enter

Submit query

Results

All commands ran successfully

SELECT Locations, FunFacts FROM FilmLocations

Locations	FunFacts
Epic Roasthouse (399 Embarcadero)	
Mason & California Streets (Nob Hill)	
Justin Herman Plaza	
200 block Market Street	
City Hall	

Polk & Larkin Streets	
Randall Museum	
555 Market St.	

2. Retrieve the names of all films released in the 20th century and before (release years before 2000 including 2000), along with filming locations and release years.

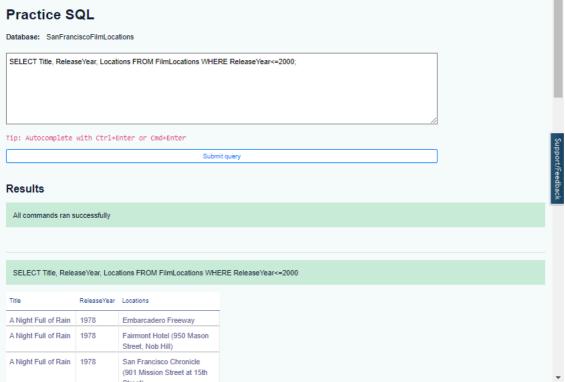
▼ Click here for a hint

Follow example 3 of SELECT, where we restricted the output resultset to retrieve only the film records with certain release years. Use WHERE clause comparison operator <=, which means **Less than or equal to**.

- ▼ Click here for the solution
 - 1. 1
 - 1. SELECT Title, ReleaseYear, Locations FROM FilmLocations WHERE ReleaseYear<=2000;

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▼ Click here for the output



- 3. Retrieve the names, production company names, filming locations, and release years of the films not written by James Cameron.
- lacktriangle Click here for a hint

Use WHERE clause comparison operator <>, which means Not equal to.

- ▼ Click here for the solution
 - 1. :
 - 1. SELECT Title, ProductionCompany, Locations, ReleaseYear FROM FilmLocations WHERE Writer<>"James Cameron";

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▼ Click here for the output

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Practice SQL

Database: SanFranciscoFilmLocations

1 SELECT Title, ProductionCompany, Locations, ReleaseYear FROM F.

Tip: Autocomplete with Ctrl+Enter or Cmd+Enter

Submit query

Results

All commands ran successfully

SELECT Title, ProductionCompany, Locations, ReleaseYear FROM Film

Title	ProductionCompany	Locations	ReleaseYear
180	SPI Cinemas	Epic Roasthouse (399 Embarcadero)	2011
180	SPI Cinemas	Mason & California Streets (Nob Hill)	2011
180	SPI Cinemas	Justin Herman Plaza	2011
180	SPI Cinemas	200 block Market	2011

		Street	
180	SPI Cinemas	City Hall	2011
180	SPI Cinemas	Polk & Larkin Streets	2011
180	SPI Cinemas	Randall Museum	2011
100			2011

Conclusion

Congratulations on completing this lab!

You are now able to:

- Query a database using SELECT statements
- Retrieve all or selected columns of data
 Filter the query response to meet a defined criteria

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