

SQLBolt - Learn SQL - SQL Lesson 1: Introduction

Table: Movies

Id	Title	Director	Year	Length_minutes
1	Toy Story	John Lasseter	1995	81
2	A Bug's Life	John Lasseter	1998	95
3	Toy Story 2	John Lasseter	1999	93
4	Monsters, Inc.	Pete Docter	2001	92
5	Finding Nemo	Andrew Stanton	2003	107
6	The Incredibles	Brad Bird	2004	116
7	Cars	John Lasseter	2006	117
8	Ratatouille	Brad Bird	2007	115
9	WALL-E	Andrew Stanton	2008	104
10	Up	Pete Docter	2009	101

Exercise 1 — Tasks

- Find the **title** of each film ✓
- Find the **director** of each film ✓
- Find the **title** and **director** of each film ✓
- Find the **title** and **year** of each film ✓
- Find **all** the information about each film ✓

SELECT FROM movies;

Stuck? Read this task's [Solution](#).
Solve all tasks to continue to the next lesson.

Continue >

SQLBolt - Learn SQL - SQL Lesson 2: Queries with constraints

Table: Movies

Id	Title	Director	Year	Length_minutes
1	Toy Story	John Lasseter	1995	81
2	A Bug's Life	John Lasseter	1998	95
3	Toy Story 2	John Lasseter	1999	93
4	Monsters, Inc.	Pete Docter	2001	92
5	Finding Nemo	Andrew Stanton	2003	107

Exercise 2 — Tasks

- Find the movie with a row **id** of 6 ✓
- Find the movies released in the **year** s between 2000 and 2010 ✓
- Find the movies **not** released in the **year** s between 2000 and 2010 ✓
- Find the first 5 Pixar movies and their release **year** ✓

SELECT * FROM movies WHERE ID<=5

Stuck? Read this task's [Solution](#).
Solve all tasks to continue to the next lesson.

Continue >

Next - SQL Lesson 3: Queries with constraints (Pt. 2)

SQLBolt - Learn SQL - SQL Lesson 3: Queries with constraints (Pt. 2)

Table: Movies

Id	Title	Director	Year	Length_minutes
9	WALL-E	Andrew Stanton	2008	104
87	WALL-G	Brenda Chapman	2042	97

Exercise 3 — Tasks

- Find all the Toy Story movies ✓
- Find all the movies directed by John Lasseter ✓
- Find all the movies (and director) not directed by John Lasseter ✓
- Find all the WALL-* movies ✓

SELECT * FROM movies where title like "WALL%"

Stuck? Read this task's [Solution](#).
Solve all tasks to continue to the next lesson.

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https://sqlbolt.com/lesson/filtering_sorting_query_results

SQLBolt - Learn SQL - SQL Lesson 4: Filtering and Sorting

Table: Movies

Id	Title	Director	Year	Length_minutes
6	Monsters University	Dan Scanlon	2013	110
3	Monsters, Inc.	Pete Docter	2001	92
1	Ratatouille	Brad Bird	2007	115
8	The Incredibles	Brad Bird	2004	116
7	Toy Story	John Lasseter	1995	81

Exercise 4 — Tasks

1. List all directors of Pixar movies (alphabetically), without duplicates ✓
2. List the last four Pixar movies released (ordered from most recent to least) ✓
3. List the first five Pixar movies sorted alphabetically ✓
4. List the next five Pixar movies sorted alphabetically ✓

SELECT * FROM movies order by title asc limit 5 offset 5

RESET

Continue >

SQLBolt - Learn SQL - SQL Lesson 5: Filtering and Sorting

Table: North_american_cities

City	Country	Population	Latitude	Longitude
Chicago	United States	2718782	41.878114	-87.629798
Houston	United States	2195914	29.760427	-95.369803

Review 1 — Tasks

1. List all the Canadian cities and their populations ✓
2. Order all the cities in the United States by their latitude from north to south ✓
3. List all the cities west of Chicago, ordered from west to east ✓
4. List the two largest cities in Mexico (by population) ✓
5. List the third and fourth largest cities (by population) in the United States and their population ✓

SELECT * FROM north_american_cities where country="United States" order by population desc limit 2 offset 2

RESET

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SQLBolt - Learn SQL - SQL Lesson 6: Multi-table queries with JOINS

Query Results

Id	Title	Director	Year	Length_minutes	Movie_id	Rating	Domestic_sales	International_sales
9	WALL-E	Andrew Stanton	2008	104	9	8.5	223808164	297503696
11	Toy Story 3	Lee Unkrich	2010	103	11	8.4	415004880	648167031
1	Toy Story	John Lasseter	1995	81	1	8.3	191796233	170162503
10	Up	Pete Docter	2009	101	10	8.3	293004164	438338580
5	Finding Nemo	Andrew Stanton	2003	107	5	8.2	380843261	555900000
4	Monsters, Inc.	Pete Docter	2001	92	4	8.1	289916256	272900000

Exercise 6 — Tasks

1. Find the domestic and international sales for each movie ✓
2. Show the sales numbers for each movie that did better internationally rather than domestically ✓
3. List all the movies by their ratings in descending order ✓

SELECT * FROM Movies inner join Boxoffice on Boxoffice.Movie_id=Movies.id order by Rating desc

RESET

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Next - SQL Lesson 7: OUTER JOINS

Previous - SQL Review: Simple SELECT Queries

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SQLBolt - Learn SQL - SQL Lesson 6: Multi-table queries with JOINs

1w 32 Engineer Dan B. 1e 2
2e 16 Engineer Sharon F. 1e 6
2w 20 Engineer Dan M. 1e 4
Engineer Malcom S. 1e 1
Artist Tylar S. 2w 2
Artist Sherman D. 2w 8

Query Results

ROLE	Building_name
Engineer	1e
Manager	1e
	1w
	2e
Artist	2w
Manager	2w

SELECT DISTINCT ROLE,Building_name FROM (SELECT * FROM BUILDINGS LEFT JOIN employees ON BUILDINGS.Building_name=Employees.Building)

Exercise 7 — Tasks

- Find the list of all buildings that have employees ✓
- Find the list of all buildings and their capacity ✓
- List all buildings and the distinct employee roles in each building (including empty buildings) ✓

Stuck? Read this task's Solution.
Solve all tasks to continue to the next lesson.

Continue >

Next - SQL Lesson 8: A short note on NULLS
Previous - SQL Lesson 6: Multi-table queries with JOINs

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SQLBolt - Learn SQL - SQL Lesson 8: A short note on NULLS

1e 24 Engineer Becky A. 1e 4
1w 32 Engineer Dan B. 1e 2
2e 16 Engineer Sharon F. 1e 6
2w 20 Engineer Dan M. 1e 4
Engineer Malcom S. 1e 1
Artist Tylar S. 2w 2

Query Results

Building_name
1w
2e

SELECT Building_name FROM (SELECT * FROM Buildings LEFT JOIN Employees ON Buildings.Building_name=Employees.Building) WHERE name IS NULL

Exercise 8 — Tasks

- Find the name and role of all employees who have not been assigned to a building ✓
- Find the names of the buildings that hold no employees ✓

Stuck? Read this task's Solution.
Solve all tasks to continue to the next lesson.

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Next - SQL Lesson 9: Queries with expressions
Previous - SQL Lesson 8: OUTER JOINs

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SQLBolt - Learn SQL - SQL Lesson 9: Queries with expressions

5	Finding Nemo	Andrew Stanton	2003	107	3	7.9	245852179	239163000
6	The Incredibles	Brad Bird	2004	116	6	8	261441092	370001000
7	Cars	John Lasseter	2006	117	0	8.5	773810164	707513606

Query Results

Id	Title	Director	Year	Length_minutes
2	A Bug's Life	John Lasseter	1998	95
6	The Incredibles	Brad Bird	2004	116
7	Cars	John Lasseter	2006	117
9	WALL-E	Andrew Stanton	2008	104
11	Toy Story 3	Lee Unkrich	2010	103
13	Brave	Brenda Chapman	2012	102

SELECT * FROM MOVIES where year%2=0

Exercise 9 — Tasks

- List all movies and their combined sales in millions of dollars ✓
- List all movies and their ratings in percent ✓
- List all movies that were released on even number years ✓

Stuck? Read this task's Solution.
Solve all tasks to continue to the next lesson.

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Next - SQL Lesson 10: Queries with aggregates (Pt. 1)
Previous - SQL Lesson 8: A short note on NULLS

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metrics about the teams. Go ahead and give it a shot.

Table: Employees

Building	Sum(Years_employed)
1e	29
2w	36

Exercise 10 — Tasks

1. Find the longest time that an employee has been at the studio. ✓
2. For each role, find the average number of years employed by employees in that role. ✓
3. Find the total number of employee years worked in each building. ✓

SELECT distinct building, sum(Years_employed) FROM employees group by building

RESET

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Next - SQL Lesson 11: Queries with aggregates (Pt 2)
Previous - SQL Lesson 9: Queries with expressions

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For this exercise, you are going to dive deeper into **Employee** data at the film studio. Think about the different clauses you want to apply for each task.

Table: Employees

Role	Sum(Years_employed)
Engineer	17

Exercise 11 — Tasks

1. Find the number of Artists in the studio (without a HAVING clause). ✓
2. Find the number of Employees of each role in the studio. ✓
3. Find the total number of years employed by all Engineers. ✓

SELECT role, sum(Years_employed) FROM employees where role="Engineer"

RESET

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Next - SQL Lesson 12: Order of execution of a Query
Previous - SQL Lesson 10: Queries with aggregates (Pt 1)

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Query Results

Id	Title	Director	Year	Length_minutes	Movie_id	Rating	Domestic_sales	International_sales
3	Toy Story 2	John Lasseter	1999	93	9	8.5	223808164	297503696
4	Monsters, Inc.	Pete Docter	2001	92	11	8.4	415004880	648167031
5	Finding Nemo	Andrew Stanton	2003	107	1	8.3	191796233	170162503
6	The Incredibles	Brad Bird	2004	116	7	7.2	244082962	217900167
7	Cars	John Lasseter	2006	117	10	8.3	293004164	438338580

Exercise 12 — Tasks

1. Find the number of movies each director has directed. ✓
2. Find the total domestic and international sales that can be attributed to each director. ✓

SELECT *, sum(Domestic_sales+International_sales) FROM movies left join Boxoffice on Movies.id=boxoffice.Movie_id group by Director

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Next - SQL Lesson 13: Inserting rows

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2	A Bug's Life	John Lasseter	1998	95	1	8.3	191796233	170162503
3	Toy Story 2	John Lasseter	1999	93	2	7.2	16278565	200600000
15	plcooo	John Lasseter	2019	91	16	8.7	340000000	270000000
16	Toy Story 4	John Lasseter	2019	91				

Query Results

Movie_id	Rating	Domestic_sales	International_sales
3	7.9	245852179	239163000
1	8.3	191796233	170162503
2	7.2	16278565	200600000
16	8.7	340000000	270000000

Exercise 13 — Tasks

1. Add the studio's new production, **Toy Story 4** to the list of movies (you can use any director) ✓
2. Toy Story 4 has been released to critical acclaim! It had a rating of 8.7, and made **340 million domestically** and **270 million internationally**. Add the record to the **BoxOffice** table. ✓

Stuck? Read this task's Solution.
Solve all tasks to continue to the next lesson.

RUN QUERY RESET Continue >

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Exercise

It looks like some of the information in our **Movies** database might be incorrect, so go ahead and fix them through the exercises below.

Table: Movies

4	Monsters, Inc.	Pete Docter	2001	92
5	Finding Nemo	Andrew Stanton	2003	107
6	The Incredibles	Brad Bird	2004	116
7	Cars	John Lasseter	2006	117
8	Ratatouille	Brad Bird	2007	115
9	WALL-E	Andrew Stanton	2008	104
10	Up	Pete Docter	2009	101
11	Toy Story 3	Lee Unkrich	2010	103
12	Cars 2	John Lasseter	2011	120
13	Brave	Brenda Chapman	2012	102
14	Monsters University	Dan Scanlon	2013	110

Exercise 14 — Tasks

1. The director for A Bug's Life is incorrect, it was actually directed by **John Lasseter**. ✓
2. The year that Toy Story 2 was released is incorrect, it was actually released in **1999**. ✓
3. Both the title and director for Toy Story 3 is incorrect! The title should be **Toy Story 3** and it was directed by **Lee Unkrich**. ✓

Stuck? Read this task's Solution.
Solve all tasks to continue to the next lesson.

RUN QUERY RESET Continue >

Next - SQL Lesson 15: Deleting rows
Previous - SQL Lesson 13: Inserting rows

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The database needs to be cleaned up a little bit, so try and delete a few rows in the tasks below.

Table: Movies

id	Title	Director	Year	Length_minutes
7	Cars	John Lasseter	2006	117
8	Ratatouille	Brad Bird	2007	115
10	Up	Pete Docter	2009	101
11	Toy Story 3	Lee Unkrich	2010	103
12	Cars 2	John Lasseter	2011	120
13	Brave	Brenda Chapman	2012	102
14	Monsters University	Dan Scanlon	2013	110

Exercise 15 — Tasks

1. This database is getting too big, lets remove all movies that were released **before 2005**. ✓
2. Andrew Stanton has also left the studio, so please remove all movies directed by him. ✓

Stuck? Read this task's Solution.
Solve all tasks to continue to the next lesson.

RUN QUERY RESET Continue >

Next - SQL Lesson 16: Creating tables
Previous - SQL Lesson 14: Updating rows

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SQL Bolt - Learn SQL - SQL Lesson 15: Creating tables

In this exercise, you'll need to create a new table for us to insert some new rows into.

Name	Version	Download_count
SQLite	3.9	82000000
MySQL	5.5	512000000
Postgres	9.4	184000000

Exercise 16 — Tasks

1. Create a new table named `Database` with the following columns:
 - `Name`: A string (text) describing the name of the database
 - `Version`: A number (floating point) of the latest version of this database
 - `Download_count`: An integer count of the number of times this database was downloadedThis table has no constraints. ✓

Stuck? Read this task's Solution. Save all tasks to continue to the next lesson.

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Next - SQL Lesson 17: Altering tables
Previous - SQL Lesson 15: Creating tables

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SQL Bolt - Learn SQL - SQL Lesson 17: Altering tables

Exercise

Our exercises use an implementation that only support adding new columns, so give that a try below.

Id	Title	Director	Year	Length_minutes	Aspect_ratio	Language
1	Toy Story	John Lasseter	1995	82	default_value	English
2	A Bug's Life	John Lasseter	1998	95	default_value	English
3	Toy Story 2	John Lasseter	1999	93	default_value	English
4	Monsters, Inc.	Pete Docter	2001	92	default_value	English
5	Finding Nemo	Andrew Stanton	2003	107	default_value	English
6	The Incredibles	Brad Bird	2004	118	default_value	English
7	Cars	John Lasseter	2006	117	default_value	English
8	Ratatouille	Brad Bird	2007	115	default_value	English
9	WALL-E	Andrew Stanton	2008	104	default_value	English
10	Up	Pete Docter	2009	101	default_value	English

Exercise 17 — Tasks

1. Add a column named `Aspect_ratio` with a `Float` data type to store the aspect ratio each movie was released in. ✓
2. Add another column named `Language` with a `Text` data type to store the language that the movie was released in. Ensure that the default for this language is `English`. ✓

Stuck? Read this task's Solution. Save all tasks to continue to the next lesson.

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Next - SQL Lesson 18: Dropping tables
Previous - SQL Lesson 16: Creating tables

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SQL Bolt - Learn SQL - SQL Lesson 18: Dropping tables

Query Results

Id	Title	Director	Year	Length_minutes
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Exercise 18 — Tasks

1. We've sadly reached the end of our lessons, let's clean up by removing the `Movies` table. ✓
2. And drop the `BoxOffice` table as well. ✓

Stuck? Read this task's Solution. Save all tasks to continue to the next lesson.


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Next - SQL Lesson X: To infinity and beyond!
Previous - SQL Lesson 17: Altering tables

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SQL Bolt - Learn SQL with simple, interactive exercises.

SQL Lesson X: To infinity and beyond!



You've finished the tutorial!

We hope the lessons have given you a bit more experience with SQL and a bit more confidence to use SQL with your own data.

We've just brushed the surface of what SQL is capable of, so to get a better idea of how SQL can be used in the real world, we'll be adding more articles in the [More Topics](#) part of the site. If you have the time, we recommend that you continue to dive deeper into SQL!

If you need further details, it's also recommended that you read the documentation for the specific