

# SQL bolt Task

## 1. Select Query

properties of each movie. To continue onto the next lesson, alter the query to find the exact information we need for each task.

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

```
SELECT * FROM movies;
```

Exercise 1 — Tasks

1. Find the **title** of each film ✓
2. Find the **director** of each film ✓
3. Find the **title** and **director** of each film ✓
4. Find the **title** and **year** of each film ✓
5. Find **all** the information about each film ✓

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Solve all tasks to continue to the next lesson.

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## 2. Query with constraints pt.1

Using the right constraints, find the information we need from the **Movies** table for each task below.

Table: Movies

Title	Year
Toy Story	1995
A Bug's Life	1998
Toy Story 2	1999
Monsters, Inc.	2001
Finding Nemo	2003

```
SELECT title,year FROM movies limit 5;
```

Exercise 2 — Tasks

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

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Solve all tasks to continue to the next lesson.

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### 3. Query with constraints pt.2

AND/OR ...;

Table: Movies

Title
WALL-E
WALL-G

```
SELECT title FROM movies where title LIKE 'WALL%';
```

Exercise 3 — Tasks

1. Find all the Toy Story movies ✓
2. Find all the movies directed by John Lasseter ✓
3. Find all the movies (and director) not directed by John Lasseter ✓
4. Find all the WALL-\* movies ✓

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Solve all tasks to continue to the next lesson.

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### 4. Filtering and Sorting Query Results

Table: Movies

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

```
SELECT * FROM movies ORDER BY title LIMIT 5 OFFSET 5;
```

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 ✓

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Next – [SQL Review: Simple SELECT Queries](#)  
Previous – [SQL Lesson 3: Queries with constraints \(Pt. 2\)](#)

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### 5. Simple Select Queries

lesson to learn about queries that span multiple tables.

Table: North\_american\_cities

City
Chicago
Houston

```
Select city from north_american_cities where country="United States" ORDER BY Population desc limit 2 offset 2
```

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 ✓

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Solve all tasks to continue to the next lesson.

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## 6. Multi table Query with JOINS

Query Results

Title
WALL-E
Toy Story 3
Toy Story
Up
Finding Nemo
Monsters, Inc.
Ratatouille
The Incredibles
Toy Story 2
Monsters University

```
SELECT title FROM movies JOIN boxoffice ON boxoffice.movie_id = movies.id ORDER BY boxoffice.rating DESC;
```

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 ✓

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Next — SQL Lesson 7: OUTER JOINS

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## 7. Outer Joins

Query Results

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

```
SELECT distinct building_name,role 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) ✓

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

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## 8. A short note on NULLS

Query Results

Building_name
1w
2e

```
SELECT building_name FROM buildings left join employees ON employees .building= buildings.building_name 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 ✓

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## 9. Queries with expression

Query Results

Title
A Bug's Life
The Incredibles
Cars
WALL-E
Toy Story 3
Brave

```
SELECT title FROM movies where (((year%2)==0))
```

Exercise 9 — Tasks

1. List all movies and their combined sales in **millions** of dollars ✓
2. List all movies and their ratings in **percent** ✓
3. List all movies that were released on even number years ✓

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Next – SQL Lesson 10: Queries with aggregates (Pt. 1)

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## 10. Queries with aggregates (pt.1)

shared data, which will give us an opportunity to use aggregate functions to summarize some high-level metrics about the teams. Go ahead and give it a shot.

Table: Employees

Building	Sum(Years_employed)
1e	29
2w	36

```
SELECT building,sum(years_employed) FROM employees Group by building ;
```

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 ✓

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Solve all tasks to continue to the next lesson.

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## 11. Queries with aggregates (pt.2)

Table: Employees

Sum(Years\_employed)

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 ✓

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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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## 12. Order of execution of query

Query Results

Director	(Sum(Domestic_sales)+ Sum(International_sales))
Andrew Stanton	1458055121
Brad Bird	1255164910
Brenda Chapman	538983207
Dan Scanlon	743559607
John Lasseter	2232208025
Lee Unkrich	1063171911
Pete Docter	1294159000

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 ✓

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SELECT director,(sum(domestic\_sales)+ sum(international\_sales)) FROM movies  
join boxoffice ON movies.id=boxoffice.movie\_id group by director;

## 13. Inserting Rows

Query Results

Movie_Id	Rating	Domestic_sales	International_sales
3	7.9	245852179	239163000
1	8.3	191796233	170162503
2	7.2	162798565	200600000
11	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. ✓

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[RUN QUERY](#) [RESET](#)

## 14.Updating Rows

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 8 is incorrect! The title should be "Toy Story 3" and it was directed by **Lee Unkrich** ✓

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[RUN QUERY](#) [RESET](#)

Next — [SQL Lesson 15: Deleting rows](#)

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## 15.Deleting Rows

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. ✓

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

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## 16. Creating Tables

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

Table: Database

Name	Version	Download_count
SQLite	3.9	92000000
MySQL	5.5	512000000
Postgres	9.4	384000000

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 downloaded
 This table has no constraints. ✓

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## 17. Altering Tables



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

Table: Movies

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

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[RUN QUERY](#) [RESET](#)

## 18. Dropping Tables

Query Results

	<b>ID</b>	<b>Title</b>	<b>Director</b>	<b>Year</b>	<b>Length_minutes</b>
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Exercise 18 — Tasks

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

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Next – [SQL Lesson X: To infinity and beyond!](#)

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# 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.

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