

Exercise

We will be using a database with data about some of Pixar's classic movies for most of our exercises. This first exercise will only involve the **Movies** table, and the default query below currently shows all the 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;
```

RESET

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 ✓

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

Continue >

convention, it helps people distinguish SQL keywords from column and tables names, and makes the query easier to read.

Exercise

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

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

```
SELECT * FROM movies where id between 1 and 5;
```

RESET

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.

Continue >

Table: Movies

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

```
SELECT * FROM movies where title like "%WALL%";
```

RESET

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 ✓

Stuck? Read this task's [Solution](#).
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Continue >

Next – [SQL Lesson 4: Filtering and sorting Query results](#)
Previous – [SQL Lesson 2: Queries with constraints \(Pt. 1\)](#)

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We've gone and scrambled the **movies** table for you in the exercise to better mimic what kind of data you might see in real life. Try and use the necessary keywords and clauses introduced above in your queries.

Table: Movies

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

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

RESET

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 ✓

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

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

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Try and write some queries to find the information requested in the tasks you know. You may have to use a different combination of clauses in your query for each task. Once you're done, continue onto the next lesson to learn about queries that span multiple tables.

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

```
SELECT * FROM north_american_cities where country like "united states" order
by population desc limit 2 offset 2;
```

RESET

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.

Continue >

Next — SQL Lesson 6: Multi-table queries with JOINS

Previous — SQL Lesson 4: Filtering and sorting Query results

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Table: Movies (Read-Only)

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

Table: Boxoffice (Read-Only)

Movie_id	Rating	Domestic_sales	International_sales
5	8.2	380843261	555900000
14	7.4	268492764	475066843
8	8	206445654	417277164
12	6.4	191452396	368400000
3	7.9	245852179	239163000
6	8	261441092	370001000

Query Results

Title	Rating
WALL-E	8.5
Toy Story 3	8.4
Toy Story	8.3
Up	8.3
Finding Nemo	8.2
Monsters, Inc.	8.1
Ratatouille	8
The Incredibles	8
Toy Story 2	7.9
Monsters University	7.4

```
SELECT title ,rating FROM movies inner join boxoffice on movies.id =
boxoffice.movie_id order by 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 ✓

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

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	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;
```

RESET

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 >

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 buildings left join employees on buildings
    .building_name = employees.building where name is null ;
```

RESET

Exercise 8 — Tasks

1. Find the name and role of all employees who have not been assigned to a building ✓
2. 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.

Continue >

2	A Bug's Life	John Lasseter	1998	95	14	7.4	268492764	475066843
3	Toy Story 2	John Lasseter	1999	93	8	8	206445654	417277164
4	Monsters, Inc.	Pete Docter	2001	92	12	6.4	191452396	368400000
5	Finding Nemo	Andrew Stanton	2003	107	3	7.9	245852179	239163000
6	The Incredibles	Brad Bird	2004	116	6	8	261441092	370001000
7	WALL-E	Andrew Stanton	2008	117	9	8.5	223000000	387500000

Query Results

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

```
select title from movies inner join boxoffice on movies.id = boxoffice
        .movie_id where year % 2 = 0;
```

RESET

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 ✓

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

Continue >

For this exercise, we are going to work with our **Employees** table. Notice how the rows in this table have 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	'Total Number Of Employees Years'
1e	29
2w	36

```
select building, sum(years_employed) as ['total number of employees years']
  from employees group by building;
```

RESET

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 ✓

Stuck? Read this task's [Solution](#).

Solve all tasks to continue to the next lesson.

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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 enter deeper into the **employees** data at the film studio. Think about the different clauses you want to apply for each task.

Table: Employees

Total Number Of Years Employed By All Engineers

17

```
select sum(years_employed) as [total number of years employed by all
engineers] from employees group by role having role = "Engineer"
```

RESET

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 ✓

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

Continue >

Next – [SQL Lesson 12: Order of execution of a Query](#)
Previous – [SQL Lesson 10: Queries with aggregates \(Pt. 1\)](#)

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6	The Incredibles	Brad Bird	2004	116	6	8	261441092	370001000
7	Toy Story	John Lasseter	2006	117	6	6.5	2232208025	287501600

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

```
select Director, sum(domestic_sales)+sum(international_sales) from movies
inner join boxoffice on movies.id = boxoffice.movie_id group by director
;
```

RESET

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 ✓

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

Continue >

Next – [SQL Lesson 13: Inserting rows](#)
Previous – [SQL Lesson 11: Queries with aggregates \(Pt. 2\)](#)

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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	162798565	200600000
15	Toy Story 4	John Lasseter	2017	110	15	8.7	340000000	270000000

Query Results

Movie_id	Rating	Domestic_sales	International_sales
3	7.9	245852179	239163000
1	8.3	191796233	170162503
2	7.2	162798565	200600000
15	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 >

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

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

|

RUN QUERY RESET

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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Solve all tasks to continue to the next lesson.

Continue >

Next — SQL Lesson 15: Deleting rows

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downright easy to irrevocably remove data, so always read your **DELETE** statements twice and execute once.

Exercise

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

|

RUN QUERY RESET

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.

Continue >



Exercise

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

Table: Database

Missing table...

|

RUN QUERY RESET

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. ✓

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

Continue >

Exercise

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

Table: Movies

Id	Title	Director	Year	Length_minutes	Aspect_ratio	Language
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**. ✓

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

Continue >

RUN QUERY RESET

Next – SQL Lesson 18: Dropping tables

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Query Results

Id	Title	Director	Year	Length_minutes

RUN QUERY RESET

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 ✓

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

[Continue >](#)