

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 >

Next – SQL Lesson 2: Queries with constraints (Pt. 1)  
Previous – Introduction to SQL

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9

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** ✓

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)

Previous – SQL Lesson 1: SELECT queries 101

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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

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 ✓

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

Continue >

Next – [SQL Lesson 4: Filtering and sorting Query results](#)

Previous – [SQL Lesson 2: Queries with constraints \(Pt. 1\)](#)

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## Exercise

There are a few concepts in this lesson, but all are pretty straight-forward to apply. To spice things up, 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

Title
Monsters University
Monsters, Inc.
Ratatouille
The Incredibles
Toy Story

```
SELECT Title from Movies ORDER BY Title ASC 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 ✓

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

RESET

Continue >

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
```

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 ✓

Stuck? Read this task's [Solution](#).  
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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5	Finding Nemo	Andrew Stanton	2003	107	3	7.9	245852179	239163000
6	The Incredibles	Brad Bird	2004	116	6	8	261441092	370001000
7	Toy Story 2	John Lasseter	1999	93	8	7.9	235022124	287588888

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 Where Rating ORDER BY Rating DESC
```

RESET

Continue >

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.

Next – [SQL Lesson 7: OUTER JOINS](#)  
Previous – [SQL Review: Simple SELECT Queries](#)

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Engineer	Malcolm 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

Continue >

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.

Next – SQL Lesson 8: A short note on NULLs

Previous – SQL Lesson 6: Multi-table queries with JOINS

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Artist	Tylar S.	2w	2
--------	----------	----	---

Query Results

Building\_name

1w

2e

```
SELECT Building_name FROM Buildings LEFT JOIN Employees ON Employees
.Building = Building_name where Building 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 >

Next – [SQL Lesson 9: Queries with expressions](#)

Previous – [SQL Lesson 7: OUTER JOINS](#)

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6	The Incredibles	Brad Bird	2004	1.16	6	8	261441092	570001000
---	-----------------	-----------	------	------	---	---	-----------	-----------

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 >

Next – [SQL Lesson 10: Queries with aggregates \(Pt. 1\)](#)

Previous – [SQL Lesson 8: A short note on NULLs](#)

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Table: Employees

SUM(Years_employed)	Building
29	1e
36	2w

SELECT SUM(Years\_employed), Building 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.

Continue >

Next – SQL Lesson 11: Queries with aggregates (Pt. 2)

Previous – SQL Lesson 9: Queries with expressions

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Table: Employees

SUM(Years_employed)	Role
17	Engineer

```
SELECT SUM(Years_employed), Role AS [Role] 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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13	Brave	Brenda Chapman	2012	102
14	Monsters University	Dan Scanlon	2013	110

Query Results

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

SELECT SUM(Domestic\_sales) + SUM (International\_sales), Director FROM Movies INNER JOIN Boxoffice ON Boxoffice.Movie\_id = Movies.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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4	Toy Story 4	Govind Hardy	2010	118	15	8.7	34000000	27000000
					15	8.7	34000000	27000000
					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	34000000	27000000
15	8.7	34000000	27000000
15	8.7	340000000	270000000
4	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 >

Next — SQL Lesson 14: Updating rows

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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.	John Lasseter	2001	92
5	Finding Nemo	John Lasseter	2003	107
6	The Incredibles	John lasseter	2004	116
7	Cars	John lasseter	2006	117
8	Ratatouille	John lasseter	2007	115
9	WALL-E	John lasseter	2008	104
10	Up	John lasseter	2009	101
11	Toy Story 3	Lee Unkrich	2010	103
12	Cars 2	John lasseter	2011	120
13	Brave	John lasseter	2012	102
14	Monsters University	John lasseter	2013	110

|

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** ✓

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

[Continue >](#)

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

#### 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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EXERCISE

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

Table: Database

Missing table...

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 >

Next – SQL Lesson 17: Altering tables

Previous – SQL Lesson 15: Deleting rows

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

```
ALTER TABLE Movies
ADD COLUMN Language Text DEFAULT English
```

RUN QUERY RESET

### 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 >

Next – [SQL Lesson 18: Dropping tables](#)  
Previous – [SQL Lesson 16: Creating tables](#)

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### Query Results

<b>Id</b>	<b>Title</b>	<b>Director</b>	<b>Year</b>	<b>Length_minutes</b>
-----------	--------------	-----------------	-------------	-----------------------

Table dropped

```
DROP TABLE IF EXISTS Boxoffice
```

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 &gt;

Next – [SQL Lesson X: To infinity and beyond!](#)  
Previous – [SQL Lesson 17: Altering tables](#)

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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.

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 database](#).

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