# Database- Day -1: MySQL Activity

## SQL Lesson 1: SELECT queries 101

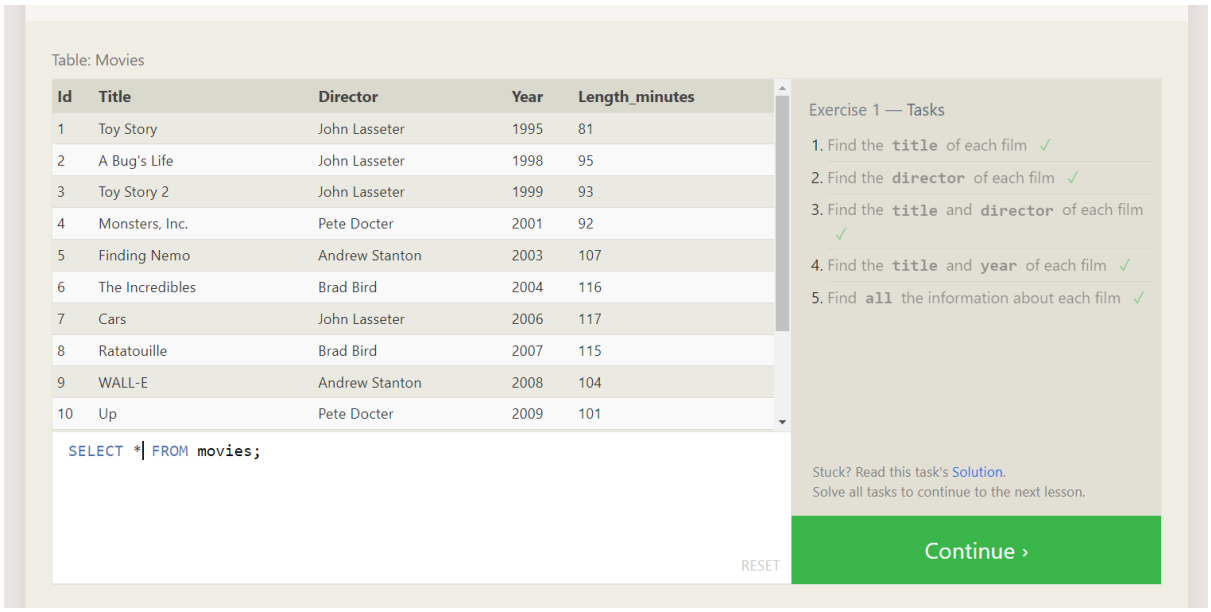


Table: Movies

| 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 ›

## SQL Lesson 2: Queries with constraints (Pt. 1)

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 where id between 1 and 5;
```

RESET

Exercise 2 — Tasks

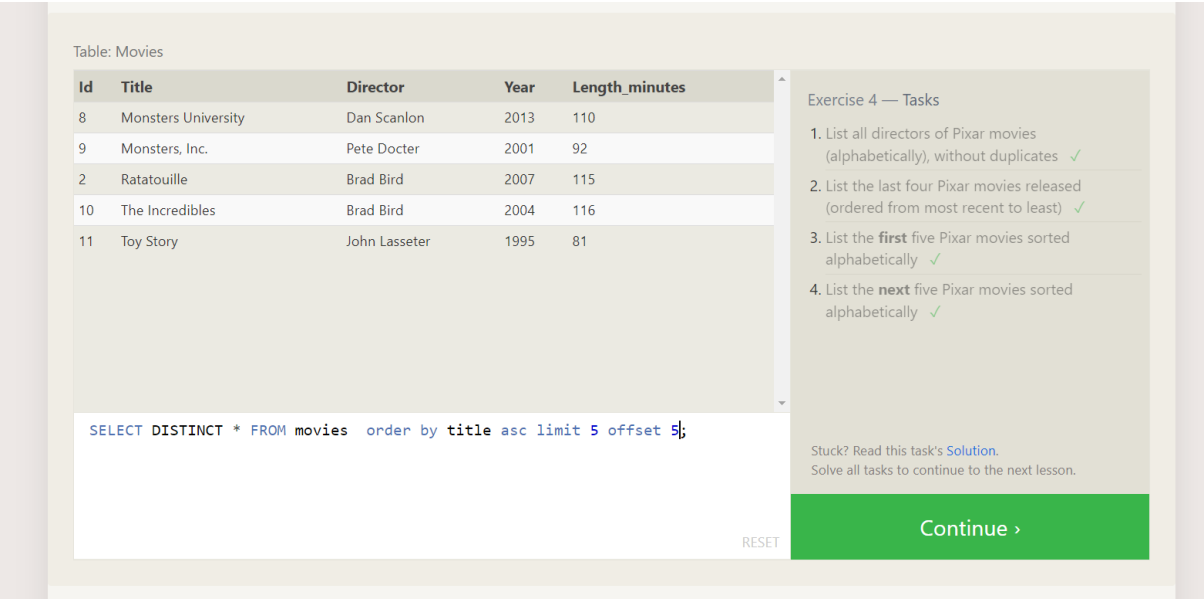
1. Find the movie with a row `id` of 6 ✓
2. Find the movies released in the `year`s between 2000 and 2010 ✓
3. Find the movies **not** released in the `year`s between 2000 and 2010 ✓
4. Find the first 5 Pixar movies and their release `year` ✓

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

Continue ›

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


# SQL Lesson 4: Filtering and sorting Query results



# SQL Review: Simple SELECT Queries

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 = '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

Find SQL Bolt useful? Please consider

# SQL Lesson 6: Multi-table queries with JOINs

Query Results

| Id | Title | Director | Year | Length_minutes | Movie_id | Rating | Domestic_sales | International_sa |
|---|---|---|---|---|---|---|---|---|
| 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 |

```
SELECT * FROM movies Inner join Boxoffice on movies.Id = Boxoffice.Movie_id
order by rating desc;
```

RESET

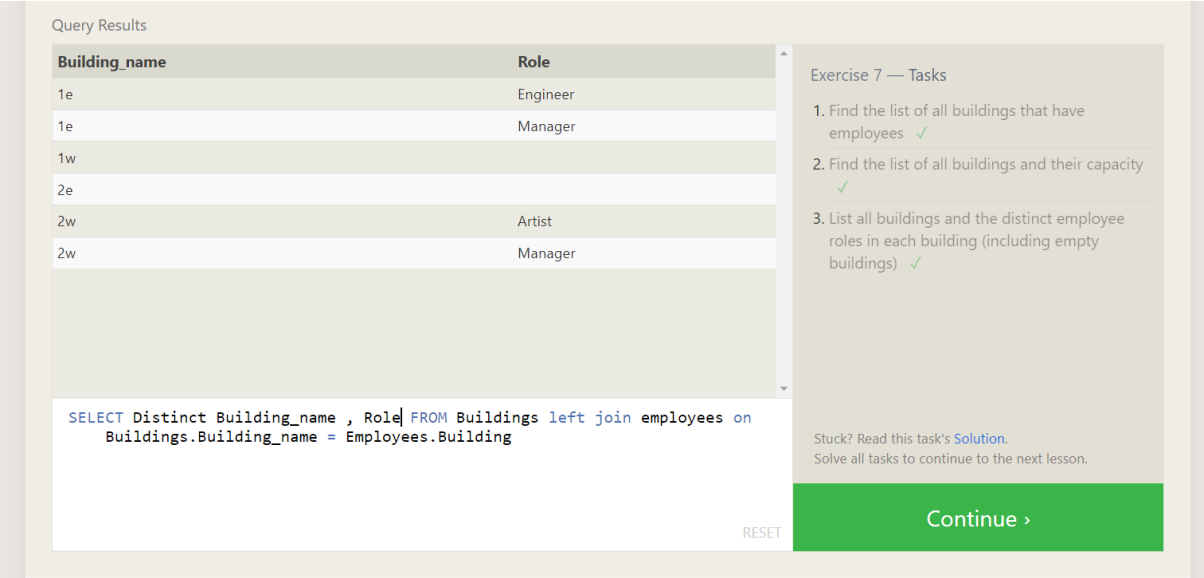
Exercise 6 — Tasks

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.

Continue ›

# SQL Lesson 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
```

RESET

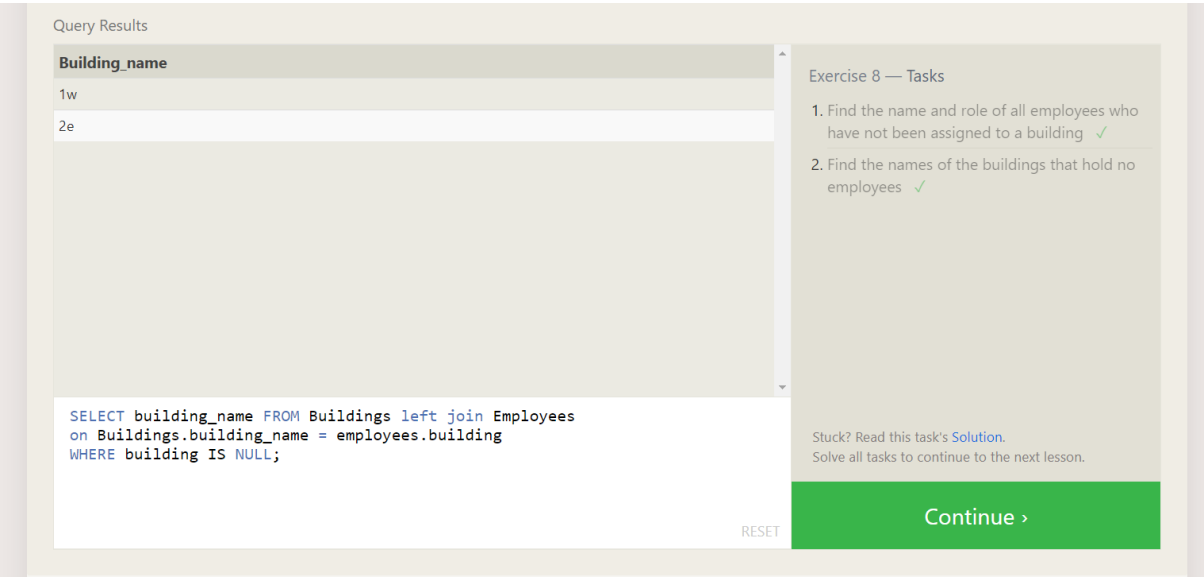
Exercise 7 — Tasks

1. Find the list of all buildings that have employees ✓
2. Find the list of all buildings and their capacity ✓
3. 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 ›

# SQL Lesson 8: A short note on NULLs



Query Results

| Building_name |
|---|
| 1w |
| 2e |

```
SELECT building_name FROM Buildings left join Employees
on Buildings.building_name = employees.building
WHERE building IS NULL;
```

RESET

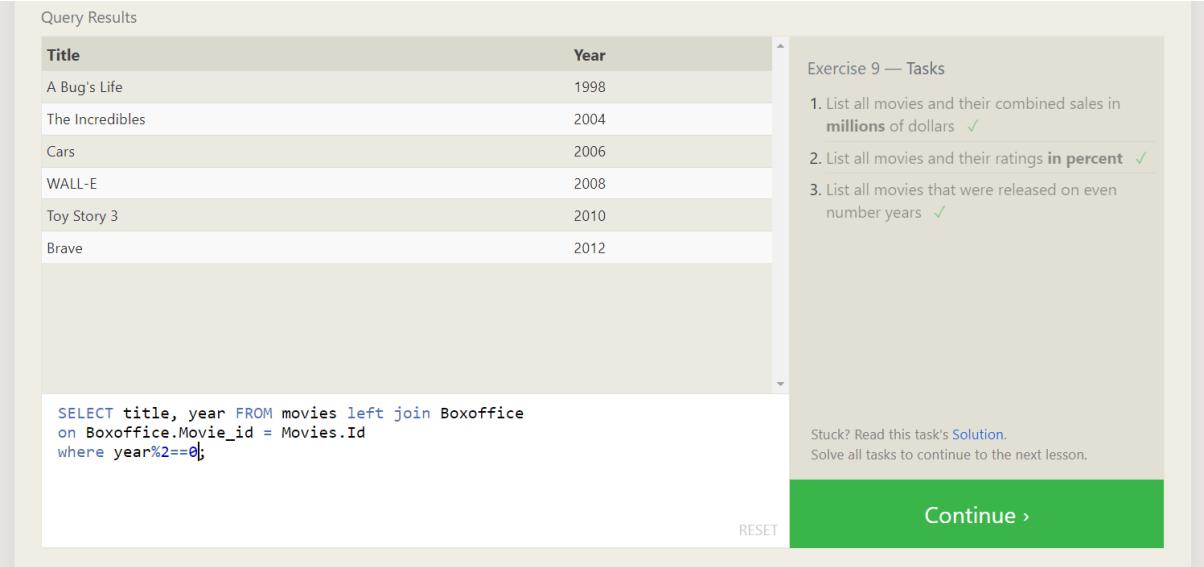
Exercise 8 — Tasks

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 ›

# SQL Lesson 9: Queries with expressions



Query Results

| Title | Year |
|---|---|
| A Bug's Life | 1998 |
| The Incredibles | 2004 |
| Cars | 2006 |
| WALL-E | 2008 |
| Toy Story 3 | 2010 |
| Brave | 2012 |

```
SELECT title, year FROM movies left join Boxoffice
on Boxoffice.Movie_id = Movies.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 ›

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

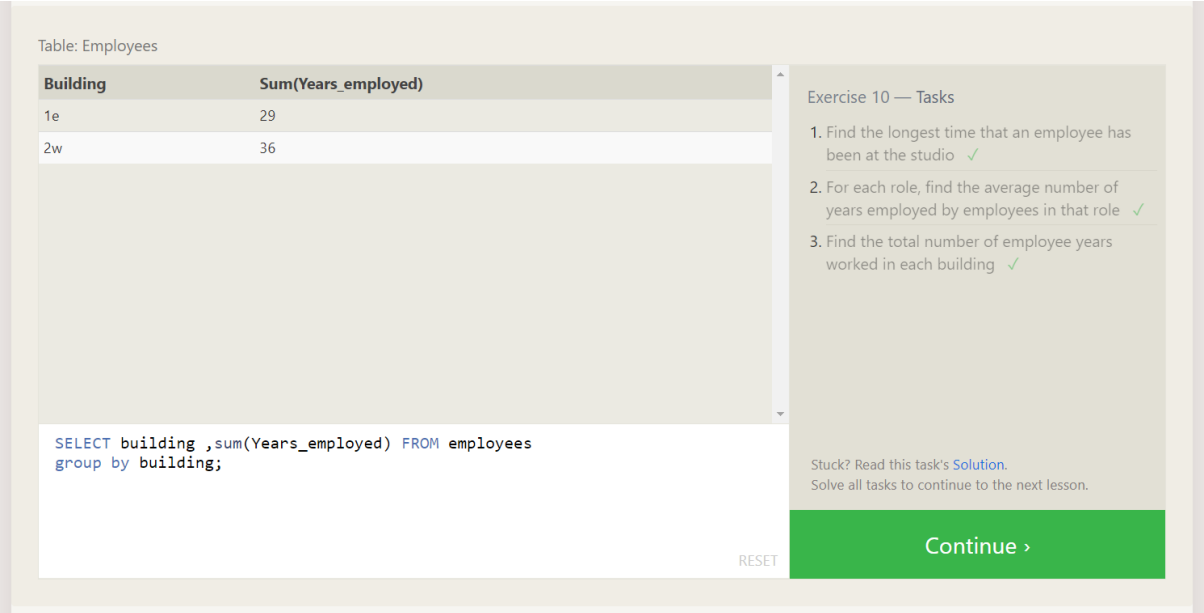


Table: Employees

| Building | Sum(Years_employed) |
|---|---|
| 1e | 29 |
| 2w | 36 |

```
SELECT building ,sum(Years_employed) 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 ›

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

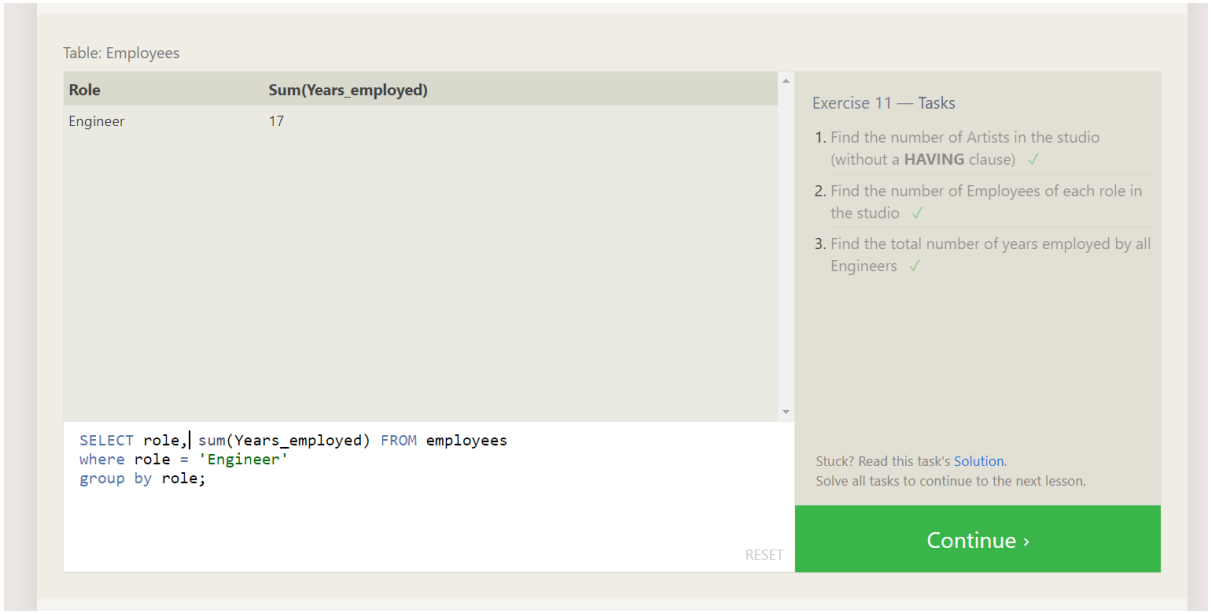


Table: Employees

| Role | Sum(Years_employed) |
|---|---|
| Engineer | 17 |

```
SELECT role, sum(Years_employed) FROM employees
where role = 'Engineer'
group by role;
```

RESET

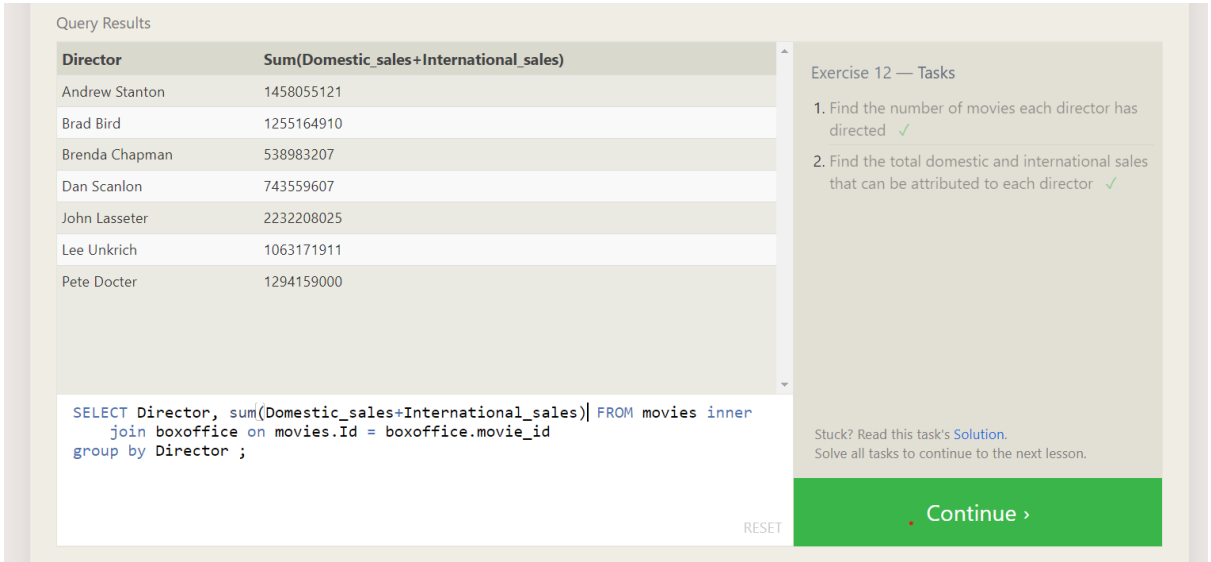
Exercise 11 — Tasks

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 ›

# SQL Lesson 12: Order of execution of a Query



Query Results

| Director | Sum(Domestic_sales+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+International_sales) FROM movies inner
    join boxoffice on movies.Id = boxoffice.movie_id
group by Director ;
```

RESET

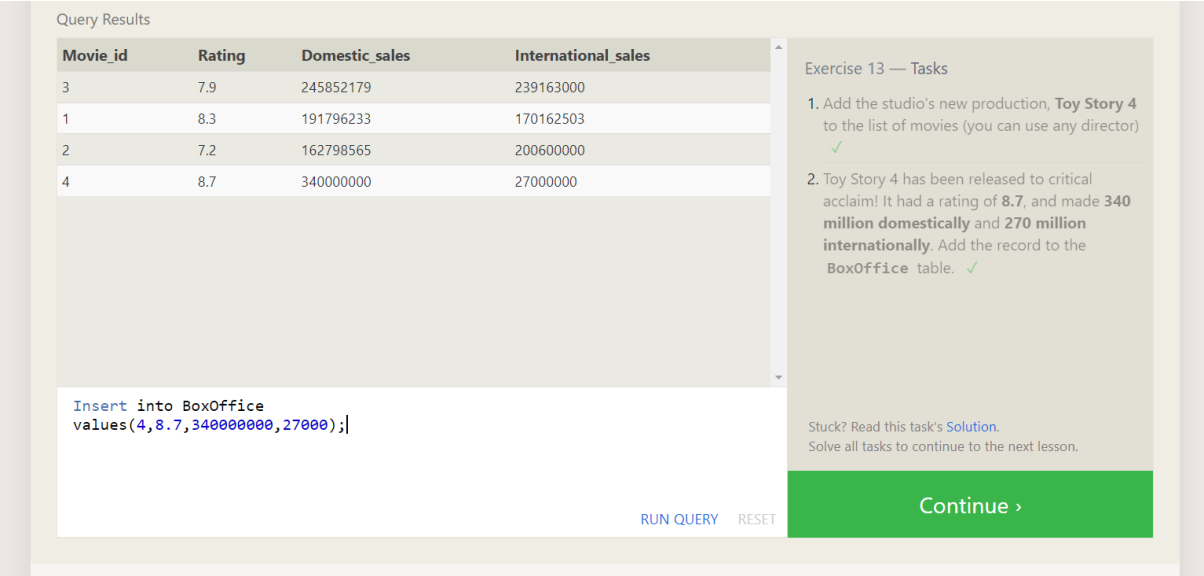
Exercise 12 — Tasks

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 ›

# SQL Lesson 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 |
| 4 | 8.7 | 340000000 | 27000000 |

```
Insert into BoxOffice
values(4,8.7,340000000,27000);
```

RUN QUERY RESET

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.

Continue ›

# SQL Lesson 14: Updating rows

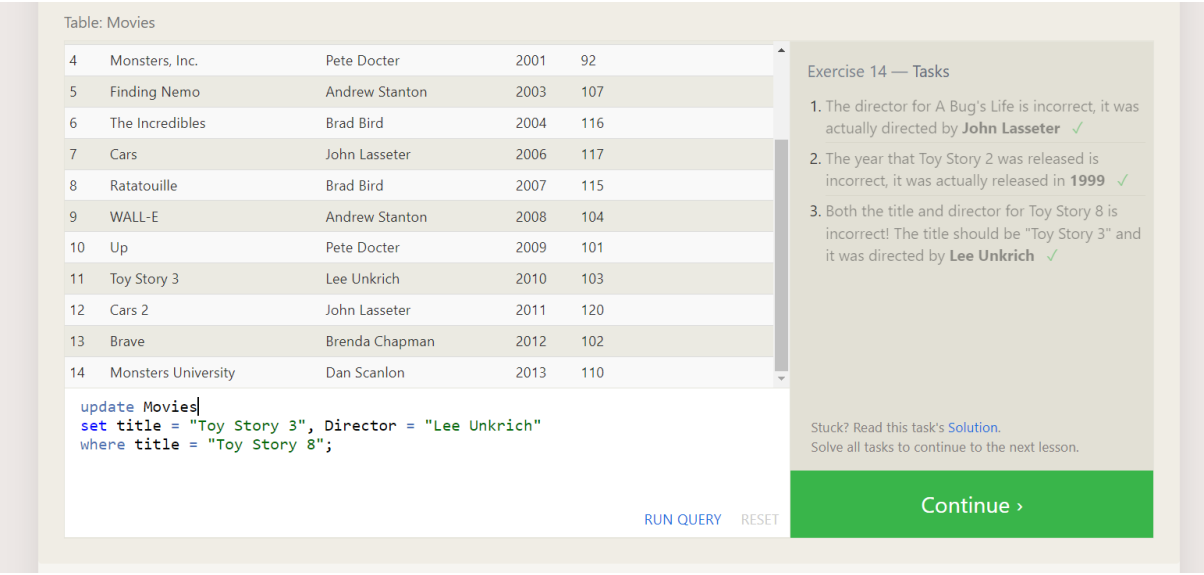


Table: Movies

| | | | | |
|---|---|---|---|---|
| 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 |

```
update Movies
set title = "Toy Story 3", Director = "Lee Unkrich"
where title = "Toy Story 8";
```

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 ›

# SQL Lesson 15: Deleting rows

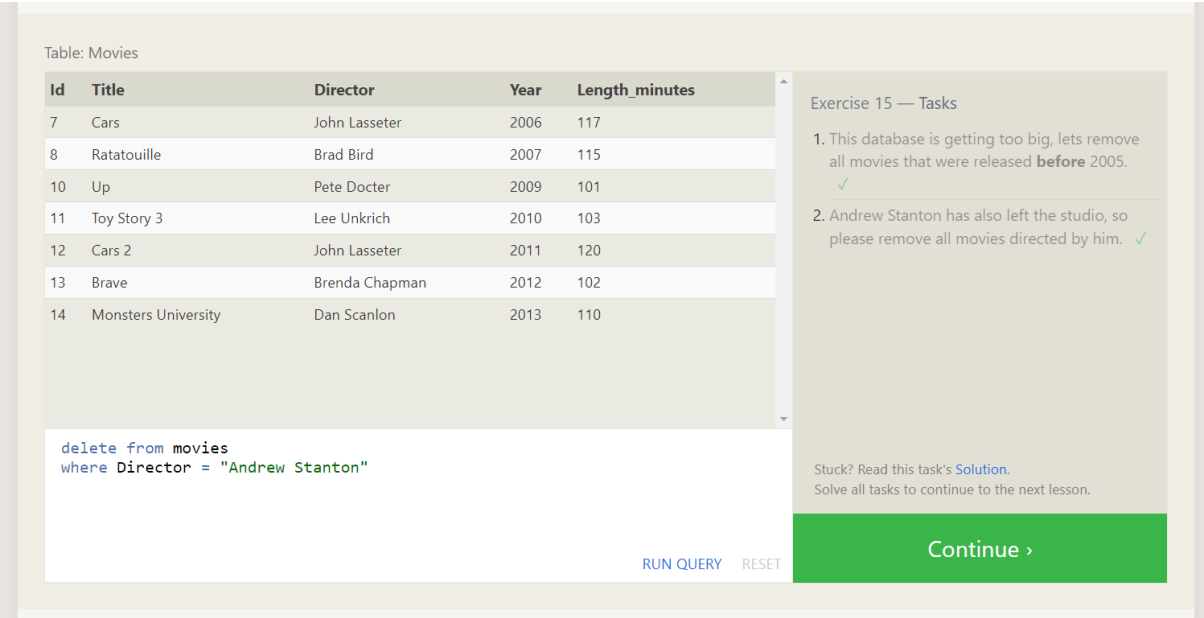


Table: Movies

| 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 |

```
delete from movies
where Director = "Andrew Stanton"
```

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 ›

# SQL Lesson 16: Creating tables

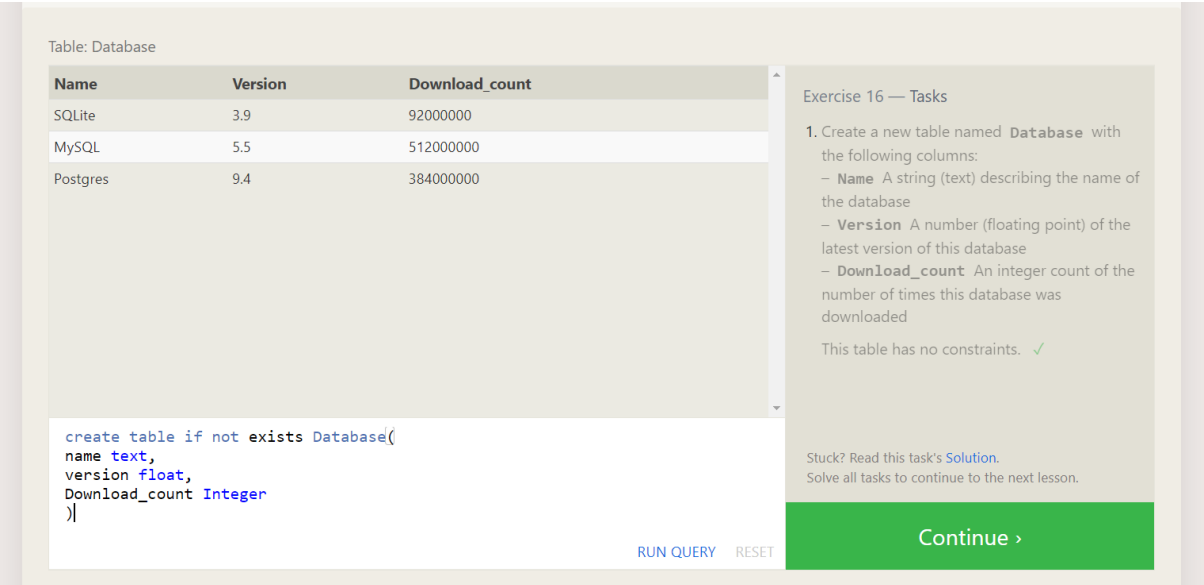


Table: Database

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

```
create table if not exists Database(
name text,
version float,
Download_count Integer
)
```

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 ›

# SQL Lesson 17: Altering tables

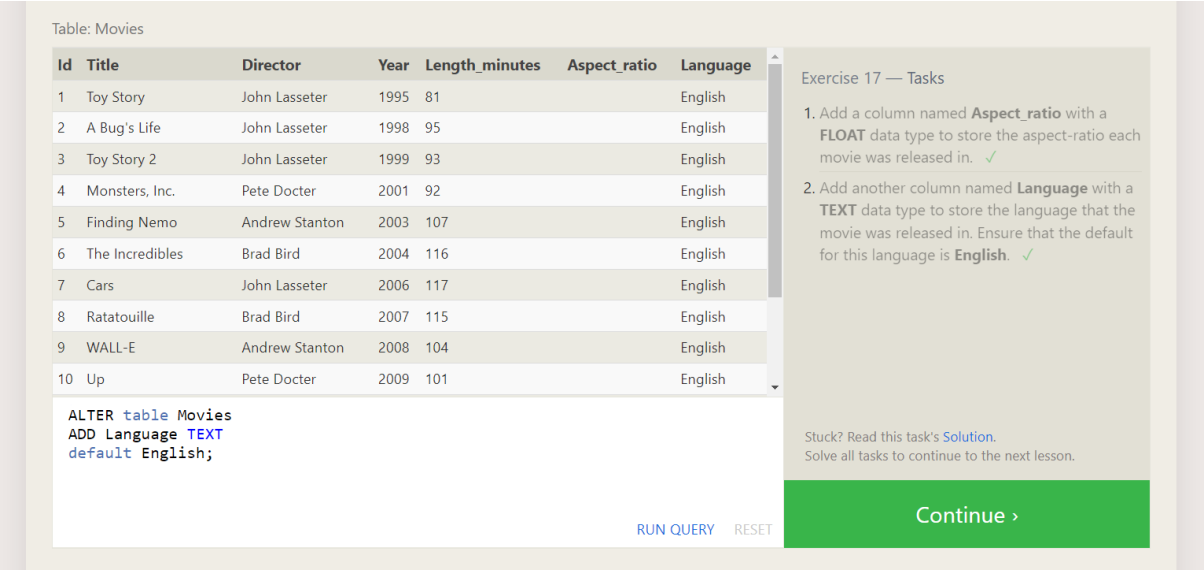


Table: Movies

| 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 |

```
ALTER table Movies
ADD Language TEXT
default English;
```

RUN QUERY RESET

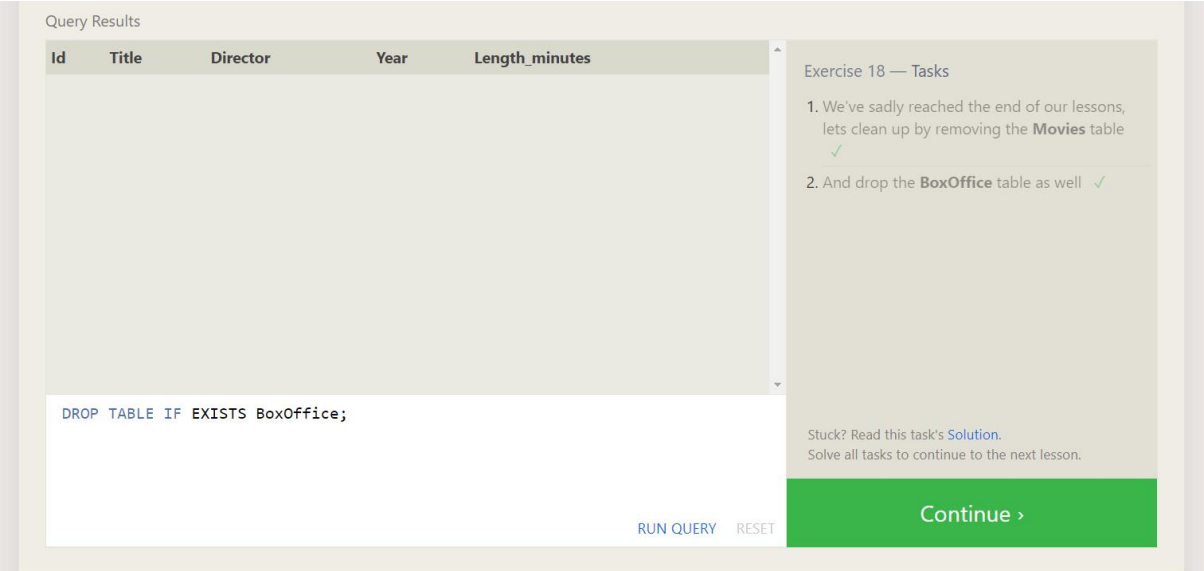
Exercise 17 — Tasks

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 ›

# SQL Lesson 18: Dropping tables



Query Results

| Id | Title | Director | Year | Length_minutes |
|---|---|---|---|---|

```
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 ›

# SQL Lesson X: To infinity and beyond!

SQL Lesson X: To infinity and beyond!

You've finished the tutorial!