#### Estimated time needed: 20 minutes

In this lab, you will learn some commonly used DML (Data Manipulation Language) statements of SQL other than SELEC INSERT statement, which is used to insert new rows into a table. Next, you will learn the UPDATE statement which is used existing rows in the table. Lastly, you will learn the DELETE statement which is used to remove rows from a table.

## How does the syntax of an INSERT statement look?

```
INSERT INTO table_name (column1, column2, ...)
VALUES (value1, value2, ...)
;
```

## How does the syntax of an UPDATE statement look?

```
UPDATE table_name
SET column1 = value1, column2 = value2, ...
WHERE condition
;
```

## How does the syntax of a DELETE statement look?

```
DELETE FROM table_name
WHERE condition
;
```

## Software Used in this Lab

In this lab, you will use <u>Datasette</u>, an open source multi-tool for exploring and publishing data.

## Database Used in this Lab

The dataset used in this lab is an internal database.

## **Objectives**

After completing this lab, you will be able to:

- Insert new rows into a table
- · Update data in existing rows of the table
- Remove rows from a table

# Database: Instructors 1 SELECT \* FROM Instructor; Tip: Autocomplete with Ctrl+Enter or Cmd+Enter Submit query

- 2. Click Submit Query.
- 3. Now you can scroll down the table and explore all the columns and rows of the Instructor table to get an overall ic

ins_id	lastname	firstname	city	country
1	Ahuja	Rav	Toronto	CA
2	Chong	Raul	Toronto	CA
3	Vasudevan	Hima	Chicago	US

4. These are the column attribute descriptions from the **Instructor** table:

```
Instructor (
   ins_id:      unique identification number of the instructors,
   lastname:      last name of the instructors,
      first name of the instructors,
      city:      name of the cities where instructors are located,
      country:      two-letter country code of the countries where instructors are located
)
```

## **Exercise 1: INSERT**

In this exercise, you will first go through some examples of using INSERT in queries and then solve some exercise proble

## Task A: Example exercises on INSERT

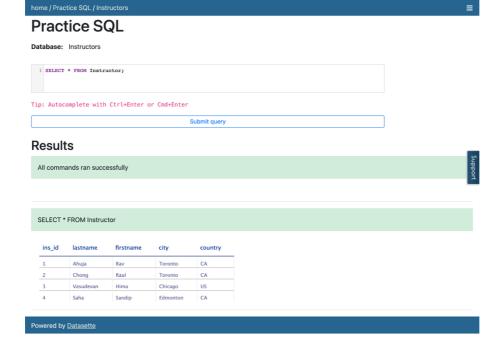
Let us go through some examples of INSERT related queries:

- 1. In this example, suppose we want to insert a new single row into the **Instructor** table.
  - 1. Problem:

Insert a new instructor record with id 4 for Sandip Saha who lives in Edmonton, CA into the "Instructor" to

2. Solution:

```
INSERT INTO Instructor(ins_id, lastname, firstname, city, country)
VALUES(4, 'Saha', 'Sandip', 'Edmonton', 'CA');
```



- 2. In this example, suppose we want to insert some new multiple rows into the **Instructor** table.
  - 1. Problem:

Insert two new instructor records into the "Instructor" table. First record with id 5 for John Doe who lives record with id 6 for Jane Doe who lives in Dhaka, BD.

2. Solution:

```
INSERT INTO Instructor(ins_id, lastname, firstname, city, country)
VALUES(5, 'Doe', 'John', 'Sydney', 'AU'), (6, 'Doe', 'Jane', 'Dhaka', 'BD');
```

- 3. Copy the solution code above by clicking on the little copy button on the bottom right of the codeblock below of the Datasette tool. Then click **Submit query**.
- 4. Copy the code below by clicking on the little copy button on the bottom right of the codeblock below and parasette tool. Then click **Submit query**.

```
SELECT * FROM Instructor;
```

5. Your output resultset should look like the image below:

ins_id	lastname	firstname	city	country
1.	Ahuja	Rav	Toronto	CA
2	Chong	Raul	Toronto	CA
3	Vasudevan	Hima	Chicago	US
4	Saha	Sandip	Edmonton	CA
5	Doe	John	Sydney	AU
6	Doe	Jane	Dhaka	BD

Powered by Datasette

## Task B: Practice exercises on INSERT

Now, let us practice creating and running some INSERT related queries.

## 1. Problem:

Insert a new instructor record with id 7 for Antonio Cangiano who lives in Vancouver, CA into the "Instructor" t

#### **▼** Hint

Follow example 1 of the INSERT exercise.

#### **▼** Solution

```
INSERT INTO Instructor(ins_id, lastname, firstname, city, country)
VALUES(7, 'Cangiano', 'Antonio', 'Vancouver', 'CA');
SELECT * FROM Instructor;
```

## ▼ Output

```
I INSERT INTO Instructor(ins_id, lastname, firstname, city, country)

VALUES(7, 'Cangiano', 'Antonio', 'Vancouver', 'CA');

4 SELECT * FROM Instructor;

Tip: Autocomplete with Ctrl+Enter or Cmd+Enter

Submit query
```

#### Results

All commands ran successfully

INSERT INTO Instructor(ins\_id, lastname, firstname, city, country)
VALUES(7, 'Cangiano', 'Antonio', 'Vancouver', 'CA')
1 row affected

SELECT \* FROM Instructor

ins_id	lastname	firstname	city	country
1	Ahuja	Rav	Toronto	CA
2	Chong	Raul	Toronto	CA
3	Vasudevan	Hima	Chicago	US
4	Saha	Sandip	Edmonton	CA
5	Doe	John	Sydney	AU
6	Doe	Jane	Dhaka	BD
7	Cangiano	Antonio	Vancouver	CA

#### ▼ Solution

```
INSERT INTO Instructor(ins_id, lastname, firstname, city, country)
 VALUES(8, 'Ryan', 'Steve', 'Barlby', 'GB'), (9, 'Sannareddy', 'Ramesh', 'Hyderabad', 'IN');
 SELECT * FROM Instructor;
Output
  1 INSERT INTO Instructor(ins_id, lastname, firstname, city, country)
2 VALUES(8, 'Ryan', 'Steve', 'Barlby', 'GB'), (9, 'Sannareddy', 'Ramesh', 'Hyderabad', 'IN');
  4 SELECT * FROM Instructor;
Tip: Autocomplete with Ctrl+Enter or Cmd+Enter
Results
  All commands ran successfully
  INSERT INTO Instructor(ins_id, lastname, firstname, city, country)
  VALUES(8, 'Ryan', 'Steve', 'Barlby', 'GB'), (9, 'Sannareddy', 'Ramesh', 'Hyderabad', 'IN')
  2 rows affected
  SELECT * FROM Instructor
   ins id lastname
                     firstname
                                city
                                           country
                     Sandip
      Cangiano Antonio Vancouver CA
```

# **Exercise 2: UPDATE**

In this exercise, you will first go through some examples of using UPDATE in queries and then solve some exercise problem.

## Task A: Example exercises on UPDATE

Let us go through some examples of UPDATE related queries:

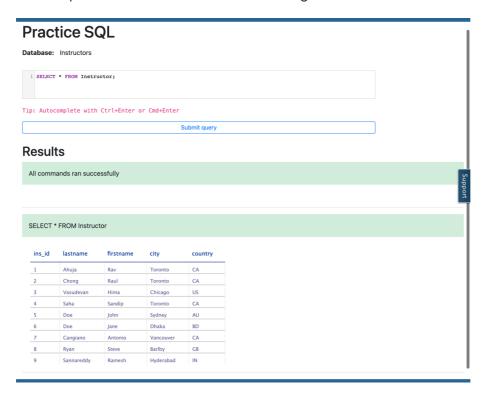
- 1. In this example, we want to update one column of an existing row of the table.
  - 1. Problem:

Update the city for Sandip to Toronto.

2. Solution:

SEELET A TROTT THIS CITACTOR,

5. Your output resultset should look like the image below:



- 2. In this example, we want to update multiple columns of an existing row of the table.
  - 1. Problem:

Update the city and country for Doe with id 5 to Dubai and AE respectively.

2. Solution:

```
UPDATE Instructor
SET city='Dubai', country='AE'
WHERE ins_id=5;
```

- 3. Copy the solution code above by clicking on the little copy button on the bottom right of the codeblock below of the Datasette tool. Then click **Submit query**.
- 4. Copy the code below by clicking on the little copy button on the bottom right of the codeblock below and pa Datasette tool. Then click **Submit query**.

```
SELECT * FROM Instructor;
```

5. Your output resultset should look like the image below:

1	Ahuja	Rav	Toronto	CA
2	Chong	Raul	Toronto	CA
3	Vasudevan	Hima	Chicago	US
4	Saha	Sandip	Toronto	CA
5	Doe	John	Dubai	AE
6	Doe	Jane	Dhaka	BD
7	Cangiano	Antonio	Vancouver	CA
8	Ryan	Steve	Barlby	GB
9	Sannareddy	Ramesh	Hyderabad	IN

## Task B: Practice exercises on UPDATE

Now, let us practice creating and running some UPDATE related queries.

## 1. Problem:

Update the city of the instructor record to Markham whose id is 1.

## **▼** Hint

Follow example 1 of the UPDATE exercise.

## **▼** Solution

```
UPDATE Instructor
SET city='Markham'
WHERE ins_id=1;
SELECT * FROM Instructor;
```

## **▼** Output

1	Ahuja	Rav	Markham	CA
2	Chong	Raul	Toronto	CA
3	Vasudevan	Hima	Chicago	US
4	Saha	Sandip	Toronto	CA
5	Doe	John	Dubai	AE
6	Doe	Jane	Dhaka	BD
7	Cangiano	Antonio	Vancouver	CA
8	Ryan	Steve	Barlby	GB
9	Sannareddy	Ramesh	Hyderabad	IN

#### 2. Problem:

Update the city and country for Sandip with id 4 to Dhaka and BD respectively.

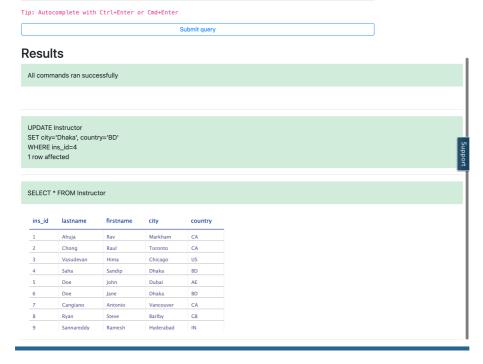
#### ▼ Hint

Follow example 2 of the UPDATE exercise.

## **▼** Solution

```
UPDATE Instructor
SET city='Dhaka', country='BD'
WHERE ins_id=4;
SELECT * FROM Instructor;
```

# ▼ Output SELECT \* FROM Instructor;



# **Exercise 3: DELETE**

In this exercise, you will first go through an example of using DELETE in a query and then solve an exercise problem by using DELETE in a query and then solve an exercise problem by using DELETE in a query and then solve an exercise problem by using DELETE in a query and then solve an exercise problem by using DELETE in a query and then solve an exercise problem by using DELETE in a query and then solve an exercise problem by using DELETE in a query and then solve an exercise problem by using DELETE in a query and then solve an exercise problem by using DELETE in a query and then solve an exercise problem by using DELETE in a query and then solve an exercise problem by using DELETE in a query and then solve an exercise problem by using DELETE in a query and then solve an exercise problem by using DELETE in a query and then solve an exercise problem by using DELETE in a query and the problem by using DELETE in a query and the problem by using DELETE in a query and the problem by using DELETE in a query and the problem by using DELETE in a query and the problem by using DELETE in a query and DELETE in a que

Remove the instructor record of Doe whose id is 6.

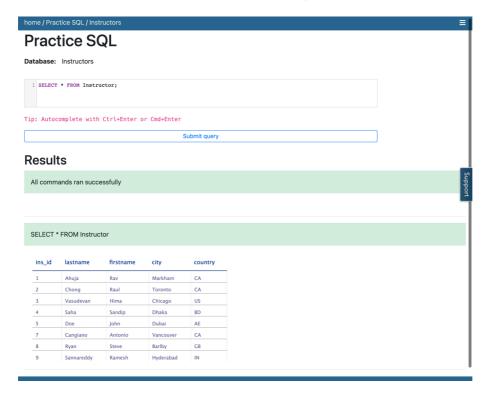
2. Solution:

```
DELETE FROM instructor
WHERE ins_id = 6;
```

- Copy the solution code above by clicking on the little copy button on the bottom right of the codeblock below of Custom SQL query of the Datasette tool. Then click Submit query.
- 4. Copy the code below by clicking on the little copy button on the bottom right of the codeblock below and pa Datasette tool. Then click **Submit query**.

```
SELECT * FROM Instructor;
```

5. Your output resultset should look like the image below:



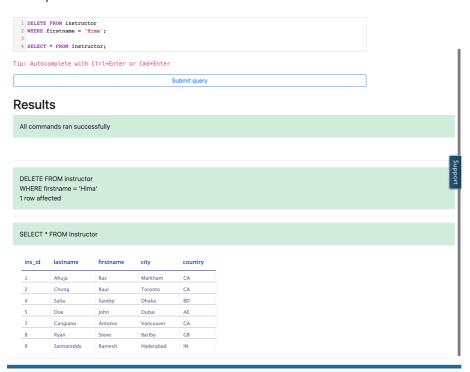
## Task B: Practice exercise on DELETE

Now, let us practice creating and running a DELETE related query.

1. Problem:

Remove the instructor record of Hima.

## ▼ Output



Congratulations! You have completed this Lab.

# Author(s)

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# Other Contributor(s)

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# Changelog

Date	Version	Changed by	Change Description
2020-12-23	1.1	Steve Ryan	ID Review
2020-11-30	1.0	Sandip Saha Joy	Initial version created