DATA 1201 - Learning Activity 3.1

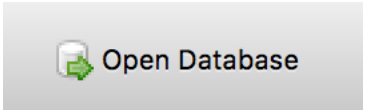
How to retrieve data from a single table

In this learning activity, we will be using the DB Browser to learn how to retrieve data using the SELECT statement. We will learn about the following expressions and clauses:

- The SELECT clause
- Using string expressions
- Using Aliases
- Using DISTINCT keyword

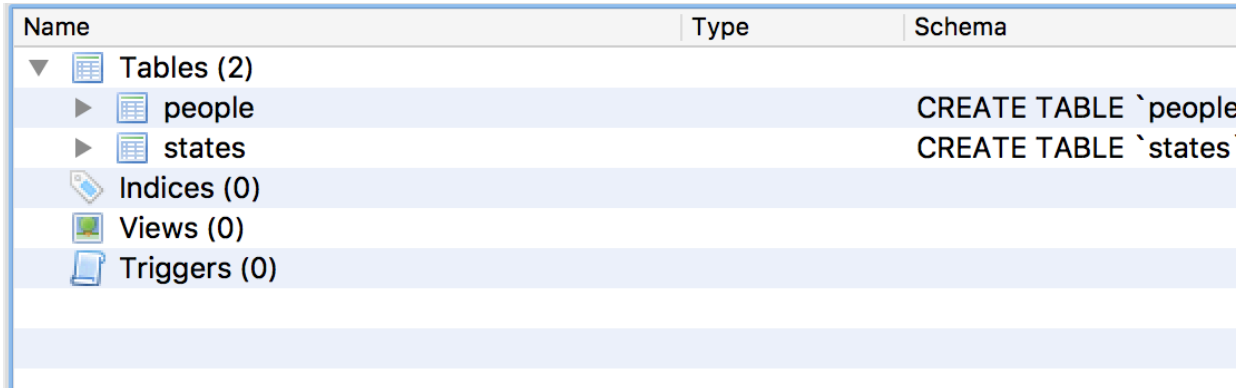
Setup:

Step 1: Download the zip file titled learningActivity3.1 from the learning activity folder under Module 3 on d2l

Step 2: Open DB Browser and use it to open the database file (results.db) by clicking on 

at the toolbar and choosing “results.db”.

Step 3: You should see the database created with two tables [people and states]



This database obtained from a Lynda course link. Here is its description.

database that the course uses includes two tables called, People, and States. The People table contains some information about a thousand people in the U.S., who participated in a fictional quiz competition.

We have their scores, what team they signed up to be a part of, the company they work for, the city and state they live in, an ID number, and whether they opted to get a shirt or a hat for participating in the competition. The States table includes abbreviations and full names of states in the U.S., and information about what census region and division each state is part of. I generated the data in the People table using the Mockaroo website, which is a great way of generating different kinds of data for practicing with databases. And the State information is available from the U.S. Census website.

Exercise 1:

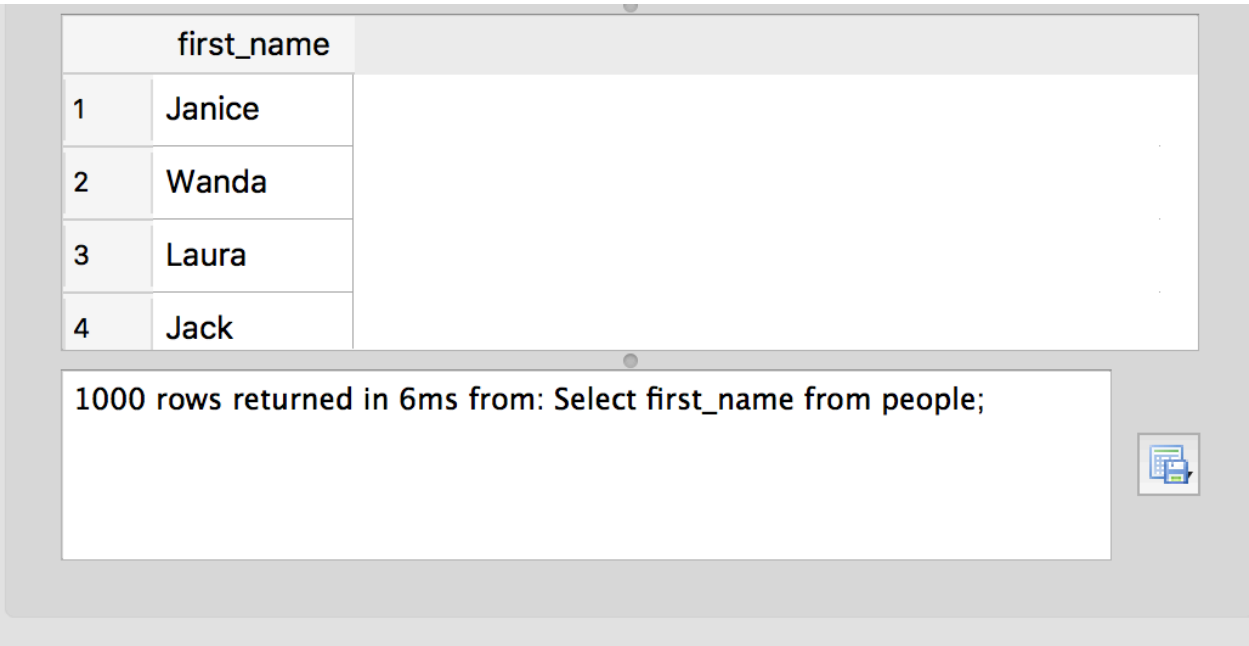
In this exercise, we will start by using a simple SELECT statement to retrieve some data from one of the tables.

Step 1: Click on the "Browse Data" to open the data tab, the fist table "people" is shown. What are the different fields that the table has?

Step 2: Let's say we want to select the list of all first names of the records stored in the database. The way to do this is to use the following simple SELECT statement.

```
Select first_name from people;
```

Try it out yourself. Go to "Execute SQL", copy the statement in the editor then click on run  . You can see the returned data in the results tab.



	first_name
1	Janice
2	Wanda
3	Laura
4	Jack

1000 rows returned in 6ms from: Select first_name from people;

Now, write a query to return the list of last names in the table.

Exercise 2:

Now, let's say we want to return all the data from the table. We use the wildcard * character that return all the data in the table. This is usually do to explore the data rather than retrieve specific results.

Select * from people;

Run the query, how many rows did it return?

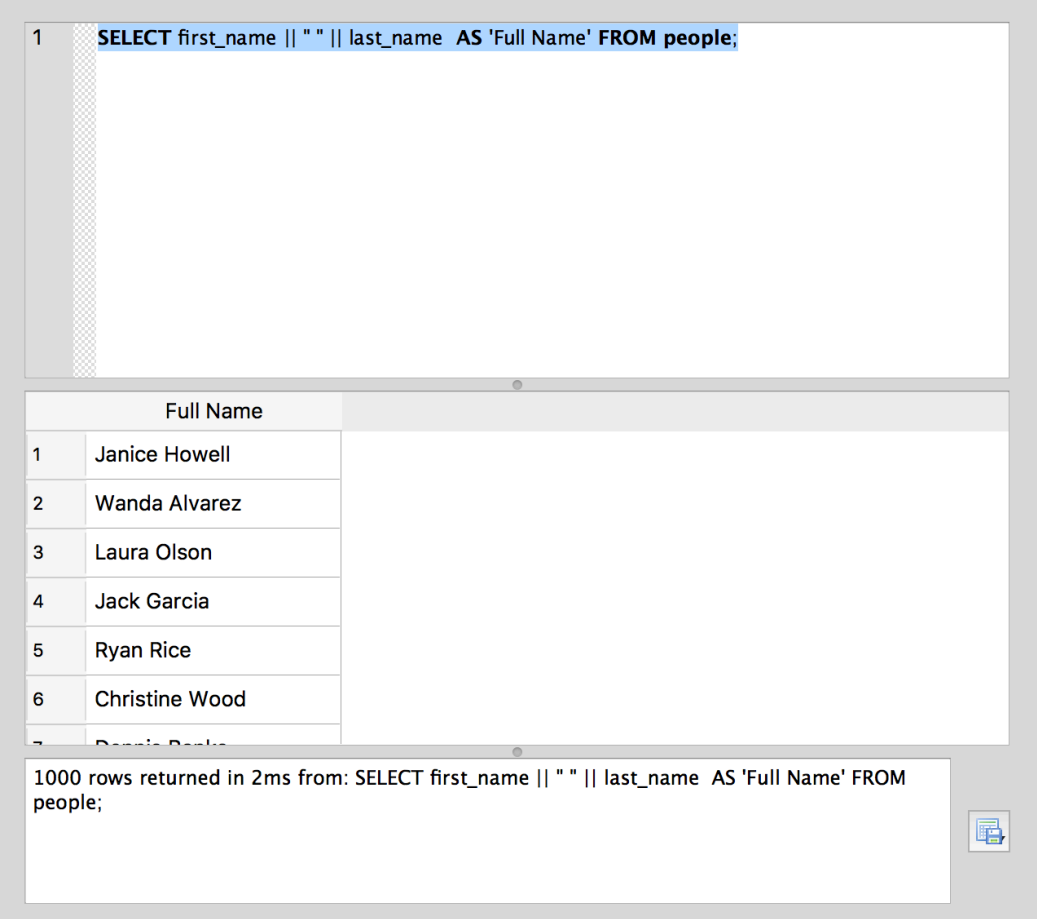
Exercise 3:

In this exercise, we want to consider looking at the full name of players. This list can be used to print out name tags for them. To do this we use the string concatenation operator (note that this operator differ from one SQL system to the other, most system using the + but for the SQLite used by DB Browser it is ||)

SELECT first_name || " " || last_name FROM people;

Now, what if we want to name the concatenated name as something else more readable. We use Aliases using the AS keyword.

SELECT first_name || " " || last_name AS 'Full Name' FROM people;



Exercise 4:

In this exercise, we will use the DISTINCT keyword. The DISTINCT keyword prevents duplicated rows. So, if we want to return all the distinct first names from the people table we use the following query.

SELECT distinct first_name city FROM people;

How many rows did this query return?

Exercise 6:

Construct queries to return the following:

- The list of people's full name, their team and quiz points
- The list of distinct states from the people records
- The list of distinct companies in the people records
- The list of states names and their abbreviations