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DAD-220

Module 3-2 Lab

Before you begin, type the following commands prior to typing MySQL to set file permissions. This will allow you to perform the file output creation:

- chmod +x change_perm.sh
- Press Enter.
- ./change_perm.sh

Then, enter MySQL and reconnect to the employee information you entered in the previous lab. Write a SELECT statement for the Employee table to check that you've reconnected to the right information.

1. Update the name of the Branches table that you created in the previous lab to say "Department".

- Use an ALTER statement to successfully RENAME the "Branches" table to "Department".
- Capture these outputs in a screenshot to validate that you've successfully completed this step.

```
mysql> use candiaperez;
Reading table information for completion of table and column names
You can turn off this feature to get a quicker startup with -A

Database changed
mysql> select * from Employee;
+-------------+------------+-----------+---------------+----------------+-----------+----------+
| Employee_ID | First_Name | Last_Name | Department_ID | Classification | STATUS    | Salary   |
+-------------+------------+-----------+---------------+----------------+-----------+----------+
|         100 | John       | Smith     |             1 | Exempt         | Full-Time | 90000.00 |
|         101 | Mary       | Jones     |             2 | Non-Exempt     | Part-Time | 35000.00 |
|         102 | Mary       | Williams  |             3 | Exempt         | Full-Time | 80000.00 |
|         103 | Gwen       | Johnson   |             4 | NULL           | Full-Time | 40000.00 |
|         104 | Michael    | Jones     |             4 | Non-Exempt     | Full-Time | 90000.00 |
|         105 | Haley      | Candia    |             1 | Non-Exempt     | Full-time | 75000.00 |
|         106 | Beyonce    | Knowles   |             2 | Non-Exempt     | Full-Time | 99000.00 |
+-------------+------------+-----------+---------------+----------------+-----------+----------+
7 rows in set (0.00 sec)

mysql> ALTER TABLE Branches RENAME Department;
ERROR 1146 (42S02): Table 'candiaperez.Branches' doesn't exist
mysql> SHOW TABLES;
+-----------------------+
| Tables_in_candiaperez |
+-----------------------+
| Department            |
| Employee              |
| tb2                   |
+-----------------------+
3 rows in set (0.00 sec)
```

2. Insert fields to the Department table so that you'll be able to perform joins on them.

INSERT INTO Department VALUES

- (1, 'Accounting'),
- (2, 'Human Resources'),
- (3, 'Information Systems'),
- (4, 'Marketing');

Write a SELECT statement for this table to prove this step, and validate that it ran correctly with a screenshot.

```
mysql> INSERT INTO Department VALUES
    -> (1, 'Accounting'),
    -> (2, 'Human Resources'),
    -> (3, 'Information Systems'),
    -> (4, 'Marketing');
Query OK, 4 rows affected (0.02 sec)
Records: 4  Duplicates: 0  Warnings: 0

mysql> select * from Department;
+---------------+---------------------+
| Department_ID | Department_Name     |
+---------------+---------------------+
|             1 | Accounting          |
|             2 | Human Resources     |
|             3 | Information Systems |
|             4 | Marketing           |
+---------------+---------------------+
4 rows in set (0.00 sec)
```

3. Now, perform joins between the Department and Employee tables and show results for how many employees work in each one of the four departments. This will only provide information on the records that are already there.

- Department 1 = Accounting
  - Command: SELECT First_Name, Last_Name, Department.Department_Name FROM Employee INNER JOIN Department ON Employee.Department_ID = Department.Department_ID WHERE Employee.Department_ID = 1;
- Using SELECT statements similar to the one above, perform joins to produce results for the following tables:
  - Department 2 = Human Resources
  - Department 3 = Information Systems
  - Department 4 = Marketing

Capture the results of these joins and validate your work by providing a screenshot. You should have the same number of records as you do employees.

```
mysql> SELECT First_Name, Last_Name, Department.Department_Name FROM Employee INNER JOIN Department ON
    -> Employee.Department_ID = Department.Department_ID WHERE Employee.Department_ID = 1;
+------------+-----------+-----------------+
| First_Name | Last_Name | Department_Name |
+------------+-----------+-----------------+
| John       | Smith     | Accounting      |
| Haley      | Candia    | Accounting      |
+------------+-----------+-----------------+
2 rows in set (0.00 sec)

mysql> SELECT First_Name, Last_Name, Department.Department_Name FROM Employee INNER JOIN Department ON
    -> Employee.Department_ID = Department.Department_ID WHERE Employee.Department_ID = 2;
+------------+-----------+-----------------+
| First_Name | Last_Name | Department_Name |
+------------+-----------+-----------------+
| Mary       | Jones     | Human Resources |
| Beyonce    | Knowles   | Human Resources |
+------------+-----------+-----------------+
2 rows in set (0.00 sec)

mysql> SELECT First_Name, Last_Name, Department.Department_Name FROM Employee INNER JOIN Department ON
    -> Employee.Department_ID = Department.Department_ID WHERE Employee.Department_ID = 3;
+------------+-----------+--------------------+
| First_Name | Last_Name | Department_Name    |
+------------+-----------+--------------------+
| Mary       | Williams  | Information Systems |
+------------+-----------+--------------------+
1 row in set (0.00 sec)

mysql> SELECT First_Name, Last_Name, Department.Department_Name FROM Employee INNER JOIN Department ON
    -> Employee.Department_ID = Department.Department_ID WHERE Employee.Department_ID = 4;
+------------+-----------+-----------------+
| First_Name | Last_Name | Department_Name |
+------------+-----------+-----------------+
| Gwen       | Johnson   | Marketing       |
| Michael    | Jones     | Marketing       |
```

4. Populate the Employee table with information for ten new employees.

- Give them unique names and include attributes for all necessary fields. (Note: Please reference attributes from the lab in Module Two. Department ID values must be between 1 and 4.)

```
mysql> select * from Employee;
+-------------+------------+------------+---------------+----------------+-----------+----------+
| Employee_ID | First_Name | Last_Name  | Department_ID | Classification | STATUS    | Salary   |
+-------------+------------+------------+---------------+----------------+-----------+----------+
|         100 | John       | Smith      |             1 | Exempt         | Full-Time | 90000.00 |
|         101 | Mary       | Jones      |             2 | Non-Exempt     | Part-Time | 35000.00 |
|         102 | Mary       | Williams   |             3 | Exempt         | Full-Time | 80000.00 |
|         103 | Gwen       | Johnson    |             4 | NULL           | Full-Time | 40000.00 |
|         104 | Michael    | Jones      |             4 | Non-Exempt     | Full-Time | 90000.00 |
|         105 | Haley      | Candia     |             1 | Non-Exempt     | Full-time | 75000.00 |
|         106 | Beyonce    | Knowles    |             2 | Non-Exempt     | Full-Time | 99000.00 |
|         107 | Hailey     | Bieber     |             4 | Non-Exempt     | Part-Time | 45000.00 |
|         108 | Kathy      | James      |             2 | Non-Exempt     | Part-Time | 55000.00 |
|         109 | Hillary    | Swank      |             3 | Exempt         | Full-Time | 82000.00 |
|         110 | Snoop      | Dogg       |             1 | Exempt         | Full-Time | 93000.00 |
|         111 | Justin     | Bieber     |             2 | Non-Exempt     | Part-Time | 38000.00 |
|         112 | Kim        | Kardashian |             3 | Exempt         | Full-Time | 84000.00 |
|         113 | Khloe      | Kardashian |             1 | Exempt         | Full-Time | 76000.00 |
|         114 | Kris       | Jenner     |             4 | Non-Exempt     | Part-Time | 52000.00 |
|         115 | Georgia    | Costello   |             2 | Non-Exempt     | Part-Time | 39000.00 |
|         116 | Janet      | Jackson    |             3 | Exempt         | Full-Time | 68000.00 |
+-------------+------------+------------+---------------+----------------+-----------+----------+
17 rows in set (0.00 sec)

mysql>
```

5. Perform a join across the Employee and Department Tables for each of the four departments. New and existing records should be displayed in the results.

- Take a screenshot to capture the updated results that the Employee and Department joins show to validate that they have run correctly. You should have the same number of records as you do employees.

```
mysql> SELECT First_Name, Last_Name, Department.Department_Name FROM Employee INNER JOIN Department ON
    -> Employee.Department_ID = Department.Department_ID WHERE Employee.Department_ID = 1;
+------------+------------+-----------------+
| First_Name | Last_Name  | Department_Name |
+------------+------------+-----------------+
| John       | Smith      | Accounting      |
| Haley      | Candia     | Accounting      |
| Snoop      | Dogg       | Accounting      |
| Khloe      | Kardashian | Accounting      |
+------------+------------+-----------------+
4 rows in set (0.00 sec)

mysql> SELECT First_Name, Last_Name, Department.Department_Name FROM Employee INNER JOIN Department ON
    -> Employee.Department_ID = Department.Department_ID WHERE Employee.Department_ID = 2;
+------------+-----------+-----------------+
| First_Name | Last_Name | Department_Name |
+------------+-----------+-----------------+
| Mary       | Jones     | Human Resources |
| Beyonce    | Knowles   | Human Resources |
| Kathy      | James     | Human Resources |
| Justin     | Bieber    | Human Resources |
| Georgia    | Costello  | Human Resources |
+------------+-----------+-----------------+
5 rows in set (0.00 sec)
```

```
mysql> SELECT First_Name, Last_Name, Department.Department_Name FROM Employee INNER JOIN Department ON
    -> Employee.Department_ID = Department.Department_ID WHERE Employee.Department_ID = 3;
+------------+------------+---------------------+
| First_Name | Last_Name  | Department_Name     |
+------------+------------+---------------------+
| Mary       | Williams   | Information Systems |
| Hillary    | Swank      | Information Systems |
| Kim        | Kardashian | Information Systems |
| Janet      | Jackson    | Information Systems |
+------------+------------+---------------------+
4 rows in set (0.00 sec)

mysql> SELECT First_Name, Last_Name, Department.Department_Name FROM Employee INNER JOIN Department ON
    -> Employee.Department_ID = Department.Department_ID WHERE Employee.Department_ID = 4;
+------------+-----------+-----------------+
| First_Name | Last_Name | Department_Name |
+------------+-----------+-----------------+
| Gwen       | Johnson   | Marketing       |
| Michael    | Jones     | Marketing       |
| Hailey     | Bieber    | Marketing       |
| Kris       | Jenner    | Marketing       |
+------------+-----------+-----------------+
4 rows in set (0.00 sec)

mysql>
```

6. Identify the resultant outputs of the commands that you've written:

- How many records are returned for employees in each department?
  - In department 1: 4 Records.
  - In department 2: 5 Records.
  - In department 3: 4 Records.
  - In department 4: 4 Records.

7. Create a CSV file that contains only the records of employees in Human Resources and Information Systems. If you run this query multiple times, be sure to use a different file name each time. MySQL will not overwrite an existing file.

- Enter the command listed below.
  - Command: select First_Name, Last_Name, Department.Department_Name from Employee inner join Department on Employee.Department_ID = Department.Department_ID where Employee.Department_ID = 3 OR Employee.Department_ID = 2 into outfile'/home/codio/workspace/HRandIS-Employees.csv' FIELDS TERMINATED BY',' LINES TERMINATED BY '\r\n';
- Print the file output to the screen.
  - You'll need to type the word quit after your MySQL prompt and then press Enter to exit to the Linux shell. Do not exit the virtual lab environment itself.
  - Next, print the output of your file to the screen by following these steps:
    1. Type pwd and press Enter, then type ls and press Enter again. This will list your files.
    2. Now, type cat HRandIS-Employees.csv and press Enter.

3. Capture these outputs in a screenshot to validate that you've successfully completed this step.

8. Reflection: Provide detailed insight on the prompts below by explaining your process along with how and why it ultimately worked.

- Process
  - Explain how the joins you used in this assignment worked.
    - **A. The joins worked because it looked at the information from employee table and joined Department and Department ID together with an inner join.**
  - Describe why the commands you used were able to retrieve the Department table when you selected the Department name.
    - **B. The commands were able to retrieve the Department table because the commands specifically stated where I wanted to take the information from. The commands gave a direct path towards the information.**
- File creation and extraction

- Identify how many records are in the file when you write the records of your query to a CSV file.

  C. **It shows 9 records in the CSV file**.

- Explain, in detail, the process of extracting data to a flat file.

  D. Extracting data to a flat file selects the information of each of the employees from the employee table. It then uses an inner join to select the Department by selecting the Department ID. This file can now be output to the Codio workspace, which allows you to see the information in a simpler format.