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Lab 3 – Info. Management
5/12/17

1 Get the employee number, first name last name of sales people for the customers they serve. Also the customer name and phone. (customers, employees).Return only the first 20 rows. Write as an implicit join.

```
  GNU nano 2.2.6                          File: sql_3-1.sql


SELECT e.employeeNumber, e.firstName, e.lastName,
       c.customerName, c.phone
FROM   employees e, customers c
WHERE  e.employeeNumber = c.salesRepEmployeeNumber
LIMIT 20
;
```

```
mysql> source sql_3-1.sql
+----------------+-----------+-----------+------------------------------+------------+
| employeeNumber | firstName | lastName  | customerName                 | phone      |
+----------------+-----------+-----------+------------------------------+------------+
|           1165 | Leslie    | Jennings  | Mini Gifts Distributors Ltd. | 4155551450 |
|           1165 | Leslie    | Jennings  | Mini Wheels Co.              | 6505555787 |
|           1165 | Leslie    | Jennings  | Technics Stores Inc.         | 6505556809 |
|           1165 | Leslie    | Jennings  | Corporate Gift Ideas Co.     | 6505551386 |
|           1165 | Leslie    | Jennings  | The Sharp Gifts Warehouse    | 4085553659 |
|           1165 | Leslie    | Jennings  | Signal Collectibles Ltd.     | 4155554312 |
|           1166 | Leslie    | Thompson  | Signal Gift Stores           | 7025551838 |
|           1166 | Leslie    | Thompson  | Toys4GrownUps.com            | 6265557265 |
|           1166 | Leslie    | Thompson  | Boards & Toys Co.            | 3105552373 |
|           1166 | Leslie    | Thompson  | Collectable Mini Designs Co. | 7605558146 |
|           1166 | Leslie    | Thompson  | Men 'R' US Retailers, Ltd.   | 2155554369 |
|           1166 | Leslie    | Thompson  | West Coast Collectables Co.  | 3105553722 |
|           1188 | Julie     | Firrelli  | Cambridge Collectables Co.   | 6175555555 |
|           1188 | Julie     | Firrelli  | Online Mini Collectables     | 6175557555 |
|           1188 | Julie     | Firrelli  | Mini Creations Ltd.          | 5085559555 |
|           1188 | Julie     | Firrelli  | Classic Gift Ideas, Inc      | 2155554695 |
|           1188 | Julie     | Firrelli  | Collectables For Less Inc.   | 6175558555 |
|           1188 | Julie     | Firrelli  | Diecast Collectables         | 6175552555 |
|           1216 | Steve     | Patterson | Diecast Classics Inc.        | 2155551555 |
|           1216 | Steve     | Patterson | Auto-Moto Classics Inc.      | 6175558428 |
+----------------+-----------+-----------+------------------------------+------------+
20 rows in set (0.00 sec)
```

2. Write the query in #1 as an explicit inner join. The output should be the same.

```
  GNU nano 2.2.6                              File: sql_3-2.sql


SELECT e.employeeNumber, e.firstName, e.lastName,
       c.customerName, c.phone
FROM   employees e
JOIN customers c ON e.employeeNumber = c.salesRepEmployeeNumber
LIMIT 20
;
```

```
mysql> source sql_3-2.sql
+----------------+-----------+----------+-----------------------------+------------+
| employeeNumber | firstName | lastName | customerName                | phone      |
+----------------+-----------+----------+-----------------------------+------------+
|           1165 | Leslie    | Jennings | Mini Gifts Distributors Ltd.| 4155551450 |
|           1165 | Leslie    | Jennings | Mini Wheels Co.             | 6505555787 |
|           1165 | Leslie    | Jennings | Technics Stores Inc.        | 6505556809 |
|           1165 | Leslie    | Jennings | Corporate Gift Ideas Co.    | 6505551386 |
|           1165 | Leslie    | Jennings | The Sharp Gifts Warehouse   | 4085553659 |
|           1165 | Leslie    | Jennings | Signal Collectibles Ltd.    | 4155554312 |
|           1166 | Leslie    | Thompson | Signal Gift Stores          | 7025551838 |
|           1166 | Leslie    | Thompson | Toys4GrownUps.com           | 6265557265 |
|           1166 | Leslie    | Thompson | Boards & Toys Co.           | 3105552373 |
|           1166 | Leslie    | Thompson | Collectable Mini Designs Co.| 7605558146 |
|           1166 | Leslie    | Thompson | Men 'R' US Retailers, Ltd.  | 2155554369 |
|           1166 | Leslie    | Thompson | West Coast Collectables Co.  | 3105553722 |
|           1188 | Julie     | Firrelli | Cambridge Collectables Co.  | 6175555555 |
|           1188 | Julie     | Firrelli | Online Mini Collectables    | 6175557555 |
|           1188 | Julie     | Firrelli | Mini Creations Ltd.         | 5085559555 |
|           1188 | Julie     | Firrelli | Classic Gift Ideas, Inc     | 2155554695 |
|           1188 | Julie     | Firrelli | Collectables For Less Inc.  | 6175558555 |
|           1188 | Julie     | Firrelli | Diecast Collectables        | 6175552555 |
|           1216 | Steve     | Patterson| Diecast Classics Inc.       | 2155551555 |
|           1216 | Steve     | Patterson| Auto-Moto Classics Inc.     | 6175558428 |
+----------------+-----------+----------+-----------------------------+------------+
20 rows in set (0.00 sec)
```

3 More on Join Types.

```
use simpleJoin;
show tables;


select * from department;
select * from employee;

#a
select 'employee NJ department' as '';
select * from employee
NATURAL JOIN department;


#b
select 'department NJ employee' as '';
select * from department
NATURAL JOIN employee;
```

```
#c
select 'employee LOJ department' as '';
select *
FROM employee
LEFT OUTER JOIN department
ON employee.DepartmentID = department.DepartmentID;
```

3.1 Use the code above to get started. Notice that #a and #b flip the file names around. How does this affect the output
It swaps the order of the LastName and DepartmentName Columns.

3.2 #c executes a Left Outer Join. Create a #d that flips the files. How does it affect the output
It swaps the order of the DepartmentID and LastName columns.
It also swaps the order of the (other) DepartmentID column and the DepartmentName Column.
Also, #c includes Williams, but #d does not.

3.3 Create an #e and #f for Right Outer Join How is output affected?
LastName, DepartmentID, DepartmentID, Department name column order is swapped to
DepartmentID, DepartmentName, LastName, DepartmentID.

3.4 Create an #g and #h for Full Outer Join How is output affected?
mySQL does not support Full Outer Join (natively) according to my research.

http://stackoverflow.com/questions/4796872/full-outer-join-in-mysql

based on the simulations from the above link:

The output is affected in the same way as #e -> #f in question 3.3.

4.0 Using the classicmodels database write an equijoin returning the customers name, customers city and payment amount for all payments from companies in the 'USA'
http://www.w3resource.com/sql/joins/perform-an-equi-join.php

4.1 Write it implicity

```
  GNU nano 2.2.6                              File: sql_3-4a.sql


SELECT c.CustomerName, c.city, p.amount
FROM customers c, payments p
WHERE c.customerNumber = p.customerNumber
AND c.salesRepEmployeeNumber IN (
        SELECT employeeNumber FROM employees WHERE officeCode IN (
                SELECT officeCode FROM offices WHERE country = 'USA'
        )
);
```

4.2 Write it explicity

```
  GNU nano 2.2.6                              File: sql_3-4b.sql


SELECT c.customerName, c.city, p.amount
FROM customers c JOIN payments p
        ON c.customerNumber = p.customerNumber
WHERE c.salesRepEmployeeNumber IN (
        SELECT employeeNumber FROM employees WHERE officeCode IN (
                SELECT officeCode FROM offices WHERE country = 'USA'
        )
);
```

4.1 & 4.2 Results (first 20 of 100)

```
mysql> source sql_3-4b.sql
+------------------------------+---------------+-----------+
| customerName                 | city          | amount    |
+------------------------------+---------------+-----------+
| Signal Gift Stores           | Las Vegas     |  14191.12 |
| Signal Gift Stores           | Las Vegas     |  32641.98 |
| Signal Gift Stores           | Las Vegas     |  33347.88 |
| Mini Gifts Distributors Ltd. | San Rafael    | 101244.59 |
| Mini Gifts Distributors Ltd. | San Rafael    |  85410.87 |
| Mini Gifts Distributors Ltd. | San Rafael    |  11044.30 |
| Mini Gifts Distributors Ltd. | San Rafael    |  83598.04 |
| Mini Gifts Distributors Ltd. | San Rafael    |  47142.70 |
| Mini Gifts Distributors Ltd. | San Rafael    |  55639.66 |
| Mini Gifts Distributors Ltd. | San Rafael    | 111654.40 |
| Mini Gifts Distributors Ltd. | San Rafael    |  43369.30 |
| Mini Gifts Distributors Ltd. | San Rafael    |  45084.38 |
| Mini Wheels Co.              | San Francisco |  26248.78 |
| Mini Wheels Co.              | San Francisco |  23923.93 |
| Mini Wheels Co.              | San Francisco |  16537.85 |
| Land of Toys Inc.           | NYC           |  22292.62 |
| Land of Toys Inc.           | NYC           |  50025.35 |
| Land of Toys Inc.           | NYC           |  35321.97 |
| Muscle Machine Inc          | NYC           |  58793.53 |
| Muscle Machine Inc          | NYC           |  20314.44 |
```

5.0 The result set below shows information on offices, customers, and salespeople. The number in the left hand column represents the number of matching records for a sales person and customer. Row 1 indicates that Foon Yue Tseng has made 4 sales to Muscle Machine Inc working out of the NYC office. A couple of rows down, we see that Foon Yuo has also sold two orders to American Souvenirs Inc. Also note that there are 30 rows in the final result. And all of the cities are in the USA.

(my results, as well as those from the classmates' I asked do not match yours and have 35 total results)

```
  GNU nano 2.2.6                                File: sql_3-5.sql

SELECT COUNT(orderNumber) AS 'NumberOfOrders',
offices.city AS 'Office City', offices.phone AS 'Office Phone',
employees.firstName, employees.lastName,
customers.customerName, customers.city AS 'Customer City'

FROM orders JOIN customers
        ON orders.customerNumber = customers.customerNumber
        AND customers.country = 'USA'
JOIN employees
        ON customers.salesRepEmployeeNumber = employees.employeeNumber
JOIN offices
        ON employees.officeCode = offices.officeCode
        AND offices.country = 'USA'

GROUP BY orders.customerNumber
ORDER BY COUNT(orderNumber) DESC
;
```

```
mysql> source sql_3-5.sql
+----------------+---------------+------------------+-----------+-----------+------------------------------+---------------+
| NumberOfOrders | Office City   | Office Phone     | firstName | lastName  | customerName                 | Customer City |
+----------------+---------------+------------------+-----------+-----------+------------------------------+---------------+
|             17 | San Francisco | +1 650 219 4782  | Leslie    | Jennings  | Mini Gifts Distributors Ltd. | San Rafael    |
|              4 | San Francisco | +1 650 219 4782  | Leslie    | Jennings  | Technics Stores Inc.         | Burlingame    |
|              4 | NYC           | +1 212 555 3000  | Foon Yue  | Tseng     | Muscle Machine Inc           | NYC           |
|              4 | San Francisco | +1 650 219 4782  | Leslie    | Jennings  | Corporate Gift Ideas Co.     | San Francisco |
|              4 | Boston        | +1 215 837 0825  | Steve     | Patterson | Diecast Classics Inc.        | Allentown     |
|              4 | San Francisco | +1 650 219 4782  | Leslie    | Jennings  | The Sharp Gifts Warehouse    | San Jose      |
|              4 | NYC           | +1 212 555 3000  | George    | Vanauf    | Land of Toys Inc.            | NYC           |
|              3 | Boston        | +1 215 837 0825  | Julie     | Firrelli  | Collectables For Less Inc.   | Brickhaven    |
|              3 | NYC           | +1 212 555 3000  | George    | Vanauf    | Motor Mint Distributors Inc. | Philadelphia  |
|              3 | San Francisco | +1 650 219 4782  | Leslie    | Thompson  | Signal Gift Stores           | Las Vegas     |
|              3 | Boston        | +1 215 837 0825  | Steve     | Patterson | Gifts4AllAges.com            | Boston        |
|              3 | Boston        | +1 215 837 0825  | Julie     | Firrelli  | Mini Creations Ltd.          | New Bedford   |
|              3 | San Francisco | +1 650 219 4782  | Leslie    | Thompson  | Toys4GrownUps.com            | Pasadena      |
|              3 | NYC           | +1 212 555 3000  | George    | Vanauf    | Tekni Collectables Inc.      | Newark        |
```

…

```
|              2 | Boston        | +1 215 837 0825  | Julie     | Firrelli  | Diecast Collectables         | Boston        |
|              2 | San Francisco | +1 650 219 4782  | Leslie    | Thompson  | Men 'R' US Retailers, Ltd.   | Los Angeles   |
|              2 | NYC           | +1 212 555 3000  | Foon Yue  | Tseng     | Microscale Inc.              | NYC           |
|              2 | San Francisco | +1 650 219 4782  | Leslie    | Thompson  | West Coast Collectables Co.  | Burbank       |
|              2 | Boston        | +1 215 837 0825  | Julie     | Firrelli  | Classic Gift Ideas, Inc      | Philadelphia  |
|              2 | San Francisco | +1 650 219 4782  | Leslie    | Thompson  | Boards & Toys Co.            | Glendale      |
|              2 | Boston        | +1 215 837 0825  | Julie     | Firrelli  | Cambridge Collectables Co.   | Cambridge     |
|              2 | San Francisco | +1 650 219 4782  | Leslie    | Jennings  | Signal Collectibles Ltd.     | Brisbane      |
+----------------+---------------+------------------+-----------+-----------+------------------------------+---------------+
35 rows in set (0.00 sec)
```

(the above results are a sample and do not represent the full results print out)