

Lab 3

1-Table SELECT, N-Table SELECT (INNER JOIN, Self Join)

1. Objectives

After the successful completion of this lab, you will be able to

- Read and write queries that retrieve data from a single table using the following features
 - Pattern matching: %, -, LIKE
 - Scalar function: TO_CHAR
 - Duplicate removal: DISTINCT
- Read and write queries that retrieve data from two or more tables using the following features
 - INNER JOIN, Self Join, table alias, column qualification

2. Tasks to Complete

Complete the questions about 1-table SELECT and N-Table SELECT queries on the **MGS Database** included in the later part of this document. These queries use the tables in user **mgs**.

NOTE: the links to online Oracle SQL Language references are available in the **Modules\Resources Related to SQL Programming folder on Canvas**.

3. Submission Requirements

Just submit a .sql file.

Mark each query based on the question number. Write your FULL name on the first page.

Sample:

```
--Lab 3
--Your full name

--Q1
Your solution.

--Q2
Your solution.

...
```

Then submit this SQL script file by attaching it to the link **Lab 3** in folder **Assignments\Labs** on Canvas.

Single-Table SELECT queries on MGS Database

1. Print the IDs, street addresses (including apartment number and suite number), cities, and states of customers whose street addresses contains “**wood**”. Sort the query result first in the increasing order of states, then in the increasing order of cities.

HINTS

- You need to specify a pattern using special characters (%) and/or) and use a pattern comparison operator **LIKE**.
- Single quotes for character literals. Double quotes for column aliases.

Output:

| CUSTOMER_ID | LINE1 | LINE2 | CITY | STATE |
|-------------|-------------------------|--------|----------------|-------|
| 8 | 291 W. Hollywood Blvd. | (null) | Los Angeles | CA |
| 1 | 100 East Ridgewood Ave. | (null) | Paramus | NJ |
| 1 | 21 Rosewood Rd. | (null) | Woodcliff Lake | NJ |

2. Print the first names, last names, and email addresses of customers who have **r** as the third letter in their first names. Sort the result in the increasing order of first names.

HINTS

- You need to specify a pattern using special characters (%) and/or) and use a pattern comparison operator **LIKE**.
- Single quotes for character literals. Double quotes for column aliases.

Output:

| FIRST_NAME | LAST_NAME | EMAIL_ADDRESS |
|------------|-----------|--------------------------|
| Barry | Zimmer | barryz@gmail.com |
| Christine | Brown | christineb@solarone.com |
| Gary | Hernandez | gary_hernandez@yahoo.com |

N-Table SELECT queries on MGS Database

3. Print the names, listing prices, and category names of all products. Sort the result first in the increasing order of category name, and then in the increasing order of product names.

OUTPUT:

| PRODUCT_NAME | LIST_PRICE | CATEGORY_NAME |
|--------------------------------------|------------|---------------|
| Fender Precision | 799.99 | Basses |
| Hofner Icon | 499.99 | Basses |
| Ludwig 5-piece Drum Set with Cymbals | 699.99 | Drums |
| Tama 5-Piece Drum Set with Cymbals | 799.99 | Drums |
| Fender Stratocaster | 699 | Guitars |
| Gibson Les Paul | 1199 | Guitars |
| Gibson SG | 2517 | Guitars |
| Rodriguez Caballero 11 | 415 | Guitars |
| Washburn D10S | 299 | Guitars |
| Yamaha FG700S | 489.99 | Guitars |

4. Print the first name, last name, and all the postal addresses of the customer whose email address is heatheresway@mac.com. Print all components of an address: street address (including apartment number and suite number), city, state, and zip code.

NOTES&HINTS:

- Each address in the table **addresses** can be for shipping only, billing only, or for both shipping and billing.
- **Address_id** is primary key in the table **addresses**.
- No two customers have the same address.
- Single quotes for character literals. Double quotes for column aliases.

OUTPUT:

| FIRST_NAME | LAST_NAME | LINE1 | LINE2 | CITY | STATE | ZIP_CODE |
|------------|-----------|------------------------|--------|-------------|-------|----------|
| Heather | Esway | 2381 Buena Vista St. | (null) | Los Angeles | CA | 90023 |
| Heather | Esway | 291 W. Hollywood Blvd. | (null) | Los Angeles | CA | 90024 |

5. Print the first names, last names, billing addresses of all customers. Sort the result first in the increasing order of states, then in the increasing order of cities. Print all components of an address: street address (including apartment number and suite number), city, state, and zip code.

NOTES:

- Each address in the table **addresses** can be for shipping only, billing only, or for both shipping and billing.
- **Address_id** is primary key in the table **addresses**.
- No two customers have the same address.

OUTPUT:

| FIRST_NAME | LAST_NAME | LINE1 | LINE2 | CITY | STATE | ZIP_CODE |
|------------|-----------|------------------------|---------|----------------|-------|----------|
| Erin | Valentino | 6982 Palm Ave. | (null) | Fresno | CA | 93711 |
| Heather | Esway | 291 W. Hollywood Blvd. | (null) | Los Angeles | CA | 90024 |
| David | Goldstein | 1374 46th Ave. | (null) | San Francisco | CA | 94129 |
| Frank Lee | Wilson | 23 Mountain View St. | (null) | Denver | CO | 80208 |
| Barry | Zimmer | 16285 Wendell St. | (null) | Omaha | NE | 68135 |
| Allan | Sherwood | 21 Rosewood Rd. | (null) | Woodcliff Lake | NJ | 07677 |
| Gary | Hernandez | 3829 Broadway Ave. | Suite 2 | New York | NY | 10012 |
| Christine | Brown | 19270 NW Cornell Rd. | (null) | Beaverton | OR | 97006 |

6. Print all customers' first names, last names, the dates when they placed their orders, and the dates when their orders were shipped. Print the heading for the dates as SHIP_DATE, ORDER_DATE. Print all dates in the following format: 03/31/2012.

HINTS:

- You need to use a scalar function **TO_CHAR** covered in Week 2 Module to convert the date values from the default format to the required format.
- Single quotes for character literals. Double quotes for column aliases.
- Null values in the result are NOT because of OUTER JOIN

OUTPUT:

| FIRST_NAME | LAST_NAME | ORDER_DATE | SHIP_DATE |
|------------|-----------|------------|------------|
| Allan | Sherwood | 03/28/2012 | 03/30/2012 |
| Allan | Sherwood | 03/29/2012 | 03/31/2012 |
| Barry | Zimmer | 03/28/2012 | 03/29/2012 |
| Christine | Brown | 03/30/2012 | 04/03/2012 |
| David | Goldstein | 04/03/2012 | (null) |
| David | Goldstein | 03/31/2012 | 04/02/2012 |
| Erin | Valentino | 03/31/2012 | (null) |
| Frank Lee | Wilson | 04/01/2012 | 04/03/2012 |
| Gary | Hernandez | 04/02/2012 | (null) |

7. Print customers' email addresses, the dates when their orders were shipped, the product id and the actual price (after the discount) of each product they ordered. Print the heading for the actual price as ACTURAL_PRICE.

OUTPUT:

| EMAIL_ADDRESS | SHIP_DATE | PRODUCT_ID | ACTUAL_PRICE |
|-----------------------------|-----------|------------|--------------|
| allan.sherwood@yahoo.com | 31-MAR-12 | 6 | 253.15 |
| allan.sherwood@yahoo.com | 31-MAR-12 | 3 | 1208.16 |
| allan.sherwood@yahoo.com | 30-MAR-12 | 2 | 839.3 |
| barryz@gmail.com | 29-MAR-12 | 4 | 303.79 |
| christineb@solarone.com | 03-APR-12 | 2 | 839.3 |
| david.goldstein@hotmail.com | (null) | 1 | 489.3 |
| david.goldstein@hotmail.com | 02-APR-12 | 5 | 299 |
| erinv@gmail.com | (null) | 5 | 299 |
| frankwilson@sbcglobal.net | 03-APR-12 | 9 | 489.99 |
| frankwilson@sbcglobal.net | 03-APR-12 | 7 | 559.99 |
| frankwilson@sbcglobal.net | 03-APR-12 | 1 | 489.3 |
| gary hernandez@yahoo.com | (null) | 10 | 679.99 |

8. Print the product code, name, and discount percentage of each product that has the **same discount percentage** as another product.

Do not print a product more than once.

Sort the query result in the increasing order of product codes.

HINTS:

- You need to use a Self Join (i.e. Join a table with itself).
- Make sure that you use table aliases.
- Make sure that you use a table name to qualify common columns.
- Use **DISTINCT** to remove potential duplicates.
- Make sure that you eliminate the rows where a product is matched with itself.

OUTPUT:

| PRODUCT_CODE | PRODUCT_NAME | DISCOUNT_PERCENT |
|--------------|--------------------------------------|------------------|
| les paul | Gibson Les Paul | 30 |
| ludwig | Ludwig 5-piece Drum Set with Cymbals | 30 |
| precision | Fender Precision | 30 |
| strat | Fender Stratocaster | 30 |