CSCI 6950 Advanced Database Design and Administration

# Lab More SQL – 9/30/2021

We are going to work with the same KimTay Pet Supplies Database like last time. Use SQL and the KimTay Pet Supplies database to write the SQL query and find the results of the following exercises. Make sure you Copy-Paste both the query and the results in your submission document.

1. For each invoice, list the invoice number and invoice date along with the ID, first name, and last name of the customer for which the invoice was created.

Answer:

SELECT I.INVOICE\_NUM,I.INVOICE\_DATE,C.CUST\_ID,FIRST\_NAME,LAST\_NAME

FROM KIMCUSTOMER C, KIMINVOICES I

WHERE C.CUST\_ID=I.CUST\_ID;

Table

Description automatically generated

1. For each invoice placed on November 15, 2021, list the invoice number along with the ID, first name, and last name of the customer for which the invoice was created.

SELECT I.INVOICE\_NUM,I.INVOICE\_DATE,C.CUST\_ID,FIRST\_NAME,LAST\_NAME

FROM KIMCUSTOMER C, KIMINVOICES I

WHERE C.CUST\_ID=I.CUST\_ID AND I.INVOICE\_DATE = '15-NOV-21';

Graphical user interface, application

Description automatically generated

1. For each invoice, list the invoice number, invoice date, item ID, quantity ordered, and quoted price for each invoice line that makes up the invoice.

SELECT I.INVOICE\_NUM,I.INVOICE\_DATE,1.ITEM\_ID,1.QUANTITY , 1.QUOTED\_PRICE

FROM KIMINVOICE\_LINE L, KIMINVOICES I

WHERE L.INVOICE\_NUM=I.INVOICE\_NUM;

Table

Description automatically generated

1. Use the IN operator to find the ID, first name, and last name of each customer for which as invoice was created on November 15, 2021.

SELECT C.CUST\_ID,FIRST\_NAME,LAST\_NAME

FROM KIMCUSTOMER C

WHERE CUST\_ID IN (

SELECT CUST\_ID FROM KIMINVOICES

WHERE INVOICE\_DATE ='15-NOV-21');

Graphical user interface

Description automatically generated with medium confidence

1. Repeat Exercise 4, but this time use the EXISTS operator in your answer.

SELECT C.CUST\_ID,FIRST\_NAME,LAST\_NAME

FROM KIMCUSTOMER C

WHERE EXISTS (

SELECT \* FROM KIMINVOICES I

WHERE INVOICE\_DATE ='15-NOV-21'AND C.CUST\_ID=I.CUST\_ID);

Graphical user interface

Description automatically generated with medium confidence

1. Find the ID, first name, and last name of each customer for which an invoice was not created on November 15, 2021.

SELECT C.CUST\_ID,FIRST\_NAME,LAST\_NAME

FROM KIMCUSTOMER C

WHERE NOT EXISTS (

SELECT \* FROM KIMINVOICES I

WHERE INVOICE\_DATE ='15-NOV-21'AND C.CUST\_ID=I.CUST\_ID);

**OR**

SELECT CUST\_ID,FIRST\_NAME,LAST\_NAME

FROM KIMCUSTOMER

MINUS

SELECT C.CUST\_ID,FIRST\_NAME,LAST\_NAME

FROM KIMCUSTOMER C, KIMINVOICES I

WHERE C.CUST\_ID=I.CUST\_ID AND I.INVOICE\_DATE = '15-NOV-21';

Graphical user interface, table, Excel

Description automatically generated

1. For each invoice, list the invoice number, invoice date, item ID, description, and category for each item that makes up the invoice.

SELECT I.INVOICE\_NUM,INVOICE\_DATE, M.ITEM\_ID,DESCRIPTION,CATEGORY

FROM KIMINVOICES I, KIMINVOICE\_LINE L, KIMITEM M

WHERE I.INVOICE\_NUM = L.INVOICE\_NUM AND L.ITEM\_ID= M.ITEM\_ID

ORDER BY I.INVOICE\_NUM;

Text

Description automatically generated

1. Repeat Exercise 7, but this time order the rows by category and then by invoice number.

SELECT I.INVOICE\_NUM,INVOICE\_DATE, M.ITEM\_ID,DESCRIPTION,CATEGORY

FROM KIMINVOICES I, KIMINVOICE\_LINE L, KIMITEM M

WHERE I.INVOICE\_NUM = L.INVOICE\_NUM AND L.ITEM\_ID= M.ITEM\_ID

ORDER BY M.CATEGORY,I.INVOICE\_NUM;

Text

Description automatically generated

1. Use a subquery to find the sales rep ID, first name, and last name of each sales rep who represents at least one customer with a credit limit of $500. List each sales rep only once in the results.

SELECT R.REP\_ID,R.FIRST\_NAME,R.LAST\_NAME

FROM KIMSALES\_REP R

WHERE R.REP\_ID IN(

SELECT REP\_ID

FROM KIMCUSTOMER

WHERE CREDIT\_LIMIT=500);

Graphical user interface, application, table

Description automatically generated

1. Repeat Exercise 9, but this time do not use a subquery.

SELECT DISTINCT I.REP\_ID,I.FIRST\_NAME ,I.LAST\_NAME

FROM KIMSALES\_REP I,KIMCUSTOMER C

WHERE I.REP\_ID = C.REP\_ID AND

CREDIT\_LIMIT>'500';

Graphical user interface, application, table

Description automatically generated

1. Find the ID, first name, and last name of each customer that currently has an invoice on file for Wild Bird Food (25 lb).

SELECT CUST\_ID,FIRST\_NAME,LAST\_NAME

FROM KIMCUSTOMER WHERE CUST\_ID IN

(SELECT CUST\_ID FROM KIMINVOICES

WHERE INVOICE\_NUM IN(SELECT INVOICE\_NUM

FROM KIMINVOICE\_LINE WHERE ITEM\_ID IN

(SELECT ITEM\_ID FROM KIMITEM

where KIMITEM.DESCRIPTION = 'Wild Bird Food (25 lb)')));

Graphical user interface, table

Description automatically generated

1. List the item ID, description, and category for each pair of items that are in the same category. (For example, one such pair would be item FS42 and item PF19, because the category for both items is FSH.)

SELECT I.ITEM\_ID, I.DESCRIPTION,I.CATEGORY

FROM KIMITEM I, KIMITEM T

WHERE I.CATEGORY=T.CATEGORY AND

I.ITEM\_ID <> T.ITEM\_ID

GROUP BY I.ITEM\_ID, I.DESCRIPTION, I.CATEGORY

HAVING COUNT(\*)=1

ORDER BY I.CATEGORY;

Graphical user interface, text

Description automatically generated

1. List the invoice number and invoice date for each invoice created for the customer James Gonzalez.

SELECT INVOICE\_NUM,INVOICE\_DATE

FROM KIMCUSTOMER NATURAL JOIN KIMINVOICES

WHERE FIRST\_NAME = 'James' AND LAST\_NAME='Gonzalez';

Graphical user interface, table

Description automatically generated with medium confidence

1. List the invoice number and invoice date for each invoice that contains an invoice line for a Wild Bird Food (25 lb).

SELECT INVOICE\_NUM,INVOICE\_DATE

FROM KIMITEM NATURAL JOIN KIMINVOICES

WHERE DESCRIPTION='Wild Bird Food (25 lb)';

Table

Description automatically generated

1. List the invoice number and invoice date for each invoice that either was created for James Gonzalez or that contains an invoice line for Wild Bird Food (25 lb).

SELECT DISTINCT INVOICE\_NUM,INVOICE\_DATE

FROM KIMITEM NATURAL JOIN KIMINVOICES NATURAL JOIN KIMCUSTOMER

WHERE DESCRIPTION='Wild Bird Food (25 lb)' OR FIRST\_NAME = 'James' AND LAST\_NAME='Gonzalez';

Table, Excel

Description automatically generated

1. List the invoice number and invoice date for each invoice that was created for James Gonzalez and that contains an invoice line for Wild Bird Food (25 lb).

SELECT DISTINCT INVOICE\_NUM,INVOICE\_DATE

FROM KIMITEM NATURAL JOIN KIMINVOICES NATURAL JOIN KIMCUSTOMER

WHERE DESCRIPTION='Wild Bird Food (25 lb)' AND FIRST\_NAME = 'James'

Table

Description automatically generated

1. List the invoice number and invoice date for each invoice that was created for James Gonzalez but that does not contain an invoice line for Wild Bird Food (25 lb).

SELECT DISTINCT INVOICE\_NUM,INVOICE\_DATE

FROM KIMITEM NATURAL JOIN KIMINVOICES NATURAL JOIN KIMCUSTOMER

WHERE DESCRIPTION<>'Wild Bird Food (25 lb)' AND FIRST\_NAME = 'James' AND LAST\_NAME='Gonzalez';

Table

Description automatically generated

1. List the item ID, description, unit price, and category for each item that has a unit price greater than the unit price of every item in category CAT. Use either the ALL or ANY operator in your query. (Hint: Make sure you select the correct operator.)

SELECT I.ITEM\_ID, I.DESCRIPTION,I.PRICE,I.CATEGORY

FROM KIMITEM I

WHERE PRICE> ALL(

SELECT PRICE FROM KIMITEM

WHERE CATEGORY='CAT'

);

Graphical user interface, text

Description automatically generated

1. For each item, list the item ID, description, units on hand, invoice number, and quantity ordered. All items should be included in the results. For those items that are currently not on an invoice, the invoice number and quantity ordered should be left blank. Order the results by item ID.

SELECT I.ITEM\_ID,ON\_HAND,QUANTITY, INVOICE\_NUM

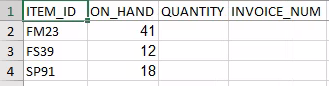
FROM KIMITEM I FULL OUTER JOIN KIMINVOICE\_LINE L ON

I.ITEM\_ID = L.ITEM\_ID

WHERE INVOICE\_NUM IS NULL

ORDER BY ITEM\_ID;

Excel result:



Oracle result:

A screenshot of a computer

Description automatically generated with low confidence

1. If you used ALL in Exercise 18, repeat the exercise using ANY. If you used ANY, repeat the exercise using ALL, and then run the new command. What question does the new command answer?

SELECT I.ITEM\_ID, I.DESCRIPTION,I.PRICE,I.CATEGORY

FROM KIMITEM I

WHERE PRICE> ANY(

SELECT PRICE FROM KIMITEM

WHERE CATEGORY='CAT'

);

Graphical user interface, text

Description automatically generated

1. For each sales rep, list the ID, first name, and last name for the customer, along with the sales rep first name, and sales rep last name. All reps should be included in the results. Order the results by rep ID. There are two SQL commands for this query that lists the same results. Create and run each SQL command.

SELECT C.FIRST\_NAME,C.LAST\_NAME,C.REP\_ID,R.FIRST\_NAME AS SALES\_FIRST\_NAME,R.LAST\_NAME AS SALES\_LAST\_NAME

FROM KIMCUSTOMER C FULL OUTER JOIN KIMSALES\_REP R ON

C.REP\_ID = R.REP\_ID

ORDER BY C.REP\_ID;

Excel screenshot:



Oracle screenshot:

Graphical user interface, table, Excel

Description automatically generated