Comparison predicates, aggregate functions in SQL

Assignment

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Display the information from the Shopping_List table (created earlier) about the most expensive and cheapest product. Execute the request using the SELECT command

```
mysql> SHOW TABLES;
+-------------------------+
| Tables_in_beetroot_test |
+-------------------------+
| fridge                  |
| people                  |
| shopping_list           |
| weird_fridge            |
+-------------------------+
4 rows in set (0.00 sec)

mysql> SELECT ID AS X, Product_Name AS MOST_EXPENSIVE_THING_IS,
Price AS THIS_MUCH FROM shopping_list ORDER BY Price DESC LIMIT
1;
+----+-------------------------+-----------+
| X  | MOST_EXPENSIVE_THING_IS | THIS_MUCH |
+----+-------------------------+-----------+
| 11 | Not pringles            |      9.99 |
+----+-------------------------+-----------+
1 row in set (0.00 sec)

mysql> SELECT MAX(price) AS OR_BY_THIS_WAY FROM shopping_list;
+----------------+
| OR_BY_THIS_WAY |
+----------------+
|           9.99 |
+----------------+
1 row in set (0.00 sec)
```

I really wanted to display the rest of the columns so I used both ways :)) :

SELECT ID AS X, Product_Name AS MOST_EXPENSIVE_THING_IS, Price AS THIS_MUCH FROM shopping_list ORDER BY Price DESC LIMIT 1;

SELECT MAX(price) AS OR_BY_THIS_WAY FROM shopping_list;

Calculate the average cost of products.

```
mysql> SELECT AVG(price) AS PRINGLES_ARE_QUITE_EXPENSIVE_NOW FROM shopping_list
 WHERE Product_name LIKE 'Pringles%';
+-----------------------------------+
| PRINGLES_ARE_QUITE_EXPENSIVE_NOW |
+-----------------------------------+
|                          4.333333 |
+-----------------------------------+
1 row in set (0.00 sec)

mysql> _
```

Excluded the most expensive one to keep it 'real'

In the Fridge table created for the previous lesson, display information about:

the number of products in the fridge:

```
mysql> SELECT * FROM FRIDGE;
+---------+------------+--------------------+----------+-----------------+
| Item_ID | Product_ID | Product_Name       | Quantity | Expiration_Date |
+---------+------------+--------------------+----------+-----------------+
|       1 |         10 | Oat Milk           |        2 | 2023-09-01      |
|       2 |          9 | Pringles Bacon     |        1 | 2024-01-23      |
|       3 |          8 | Butter             |        2 | 2023-12-21      |
|       4 |          7 | Pringles Onion     |        1 | 2024-01-29      |
|       5 |          6 | Pringles Cocktail  |        2 | 2024-02-01      |
|       5 |          5 | Pringles BBQ Sauce |        1 | 2024-01-15      |
|       6 |          4 | Chicken breast     |        3 | 2023-10-01      |
|       7 |          3 | Pringles Paprika   |        1 | 2024-01-23      |
|       8 |          2 | Cheddar cheese     |        1 | 2023-12-02      |
|       9 |          1 | Pizza              |        2 | 2023-09-10      |
|      10 |          0 | Egg                |       10 | 2023-10-12      |
+---------+------------+--------------------+----------+-----------------+
11 rows in set (0.00 sec)

mysql> SELECT COUNT(Item_ID) AS FRIDGE_HAS_THIS_MANY_ITEMS FROM fridge;
+---------------------------+
| FRIDGE_HAS_THIS_MANY_ITEMS |
+---------------------------+
|                        11 |
+---------------------------+
1 row in set (0.00 sec)
```

the number of products on the shopping list (from the Shopping_List table):

```
mysql> SELECT COUNT(Product_Name) AS HOW_MANY_PRINGLES_CAN_SOMEONE_BUY FROM sho
pping_list WHERE Product_Name LIKE 'Pringles%';
+----------------------------------+
| HOW_MANY_PRINGLES_CAN_SOMEONE_BUY |
+----------------------------------+
|                                 9 |
+----------------------------------+
1 row in set (0.00 sec)
```

So.. SQL counts from 0.. ✌️

The total number of all products in the Fridge table:

I added another column just to sort out what's in the fridge or not for different results here -

```
+---------+------------+--------------------+----------+-----------------+--------------+
| Item_ID | Product_ID | Product_Name       | Quantity | Expiration_Date | IS_IN_FRIDGE |
+---------+------------+--------------------+----------+-----------------+--------------+
|       1 |         10 | Oat Milk           |        2 | 2023-09-01      |            1 |
|       2 |          9 | Pringles Bacon     |        1 | 2024-01-23      |         NULL |
|       3 |          8 | Butter             |        2 | 2023-12-21      |         NULL |
|       4 |          7 | Pringles Onion     |        1 | 2024-01-29      |         NULL |
|       5 |          6 | Pringles Cocktail  |        2 | 2024-02-01      |         NULL |
|       5 |          5 | Pringles BBQ Sauce |        1 | 2024-01-15      |         NULL |
|       6 |          4 | Chicken breast     |        3 | 2023-10-01      |         NULL |
|       7 |          3 | Pringles Paprika   |        1 | 2024-01-23      |         NULL |
|       8 |          2 | Cheddar cheese     |        1 | 2023-12-02      |         NULL |
|       9 |          1 | Pizza              |        2 | 2023-09-10      |         NULL |
|      10 |          0 | Egg                |       10 | 2023-10-12      |         NULL |
+---------+------------+--------------------+----------+-----------------+--------------+
11 rows in set (0.00 sec)

mysql> UPDATE fridge SET IS_IN_FRIDGE ('Yes',TRUE) WHERE Item_ID=1;
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that correspond
 to your MySQL server version for the right syntax to use near '('Yes',TRUE) WHERE Item_ID
1' at line 1
mysql> UPDATE fridge SET IS_IN_FRIDGE = TRUE WHERE (Item_ID % 2) = 0;
Query OK, 5 rows affected (0.00 sec)
Rows matched: 5  Changed: 5  Warnings: 0

mysql> SELECT * FROM fridge;
+---------+------------+--------------------+----------+-----------------+--------------+
| Item_ID | Product_ID | Product_Name       | Quantity | Expiration_Date | IS_IN_FRIDGE |
+---------+------------+--------------------+----------+-----------------+--------------+
|       1 |         10 | Oat Milk           |        2 | 2023-09-01      |            1 |
|       2 |          9 | Pringles Bacon     |        1 | 2024-01-23      |            1 |
|       3 |          8 | Butter             |        2 | 2023-12-21      |         NULL |
|       4 |          7 | Pringles Onion     |        1 | 2024-01-29      |            1 |
|       5 |          6 | Pringles Cocktail  |        2 | 2024-02-01      |         NULL |
|       5 |          5 | Pringles BBQ Sauce |        1 | 2024-01-15      |         NULL |
|       6 |          4 | Chicken breast     |        3 | 2023-10-01      |            1 |
|       7 |          3 | Pringles Paprika   |        1 | 2024-01-23      |         NULL |
|       8 |          2 | Cheddar cheese     |        1 | 2023-12-02      |            1 |
|       9 |          1 | Pizza              |        2 | 2023-09-10      |         NULL |
|      10 |          0 | Egg                |       10 | 2023-10-12      |            1 |
+---------+------------+--------------------+----------+-----------------+--------------+
11 rows in set (0.00 sec)

mysql> UPDATE fridge SET IS_IN_FRIDGE = FALSE WHERE (Item_ID % 2) = 1;
Query OK, 6 rows affected (0.00 sec)
Rows matched: 6  Changed: 6  Warnings: 0

mysql> SELECT * FROM fridge;
+---------+------------+--------------------+----------+-----------------+--------------+
| Item_ID | Product_ID | Product_Name       | Quantity | Expiration_Date | IS_IN_FRIDGE |
+---------+------------+--------------------+----------+-----------------+--------------+
|       1 |         10 | Oat Milk           |        2 | 2023-09-01      |            0 |
|       2 |          9 | Pringles Bacon     |        1 | 2024-01-23      |            1 |
|       3 |          8 | Butter             |        2 | 2023-12-21      |            0 |
|       4 |          7 | Pringles Onion     |        1 | 2024-01-29      |            1 |
|       5 |          6 | Pringles Cocktail  |        2 | 2024-02-01      |            0 |
|       5 |          5 | Pringles BBQ Sauce |        1 | 2024-01-15      |            0 |
|       6 |          4 | Chicken breast     |        3 | 2023-10-01      |            1 |
|       7 |          3 | Pringles Paprika   |        1 | 2024-01-23      |            0 |
|       8 |          2 | Cheddar cheese     |        1 | 2023-12-02      |            1 |
|       9 |          1 | Pizza              |        2 | 2023-09-10      |            0 |
|      10 |          0 | Egg                |       10 | 2023-10-12      |            1 |
+---------+------------+--------------------+----------+-----------------+--------------+
```

I will re-do the total from fridge and display what's in the fridge at the moment:

```
mysql> SELECT * FROM fridge;
+---------+------------+--------------------+----------+-----------------+--------------+
| Item_ID | Product_ID | Product_Name       | Quantity | Expiration_Date | IS_IN_FRIDGE |
+---------+------------+--------------------+----------+-----------------+--------------+
|       1 |         10 | Oat Milk           |        2 | 2023-09-01      |            0 |
|       2 |          9 | Pringles Bacon     |        1 | 2024-01-23      |            1 |
|       3 |          8 | Butter             |        2 | 2023-12-21      |            0 |
|       4 |          7 | Pringles Onion     |        1 | 2024-01-29      |            1 |
|       5 |          6 | Pringles Cocktail  |        2 | 2024-02-01      |            0 |
|       5 |          5 | Pringles BBQ Sauce |        1 | 2024-01-15      |            0 |
|       6 |          4 | Chicken breast     |        3 | 2023-10-01      |            1 |
|       7 |          3 | Pringles Paprika   |        1 | 2024-01-23      |            0 |
|       8 |          2 | Cheddar cheese     |        1 | 2023-12-02      |            1 |
|       9 |          1 | Pizza              |        2 | 2023-09-10      |            0 |
|      10 |          0 | Egg                |       10 | 2023-10-12      |            1 |
+---------+------------+--------------------+----------+-----------------+--------------+
11 rows in set (0.00 sec)

mysql> SELECT COUNT(Item_ID) AS WHATS_IN_THE_FRIDGE_NOW FROM fridge WHERE IS_IN_FRIDGE = 1

+--------------------------+
| WHATS_IN_THE_FRIDGE_NOW |
+--------------------------+
|                        5 |
+--------------------------+
1 row in set (0.00 sec)

mysql> SELECT COUNT(Item_ID) AS TOTAL_FROM_THE_FRIDGE FROM fridge;
+-----------------------+
| TOTAL_FROM_THE_FRIDGE |
+-----------------------+
|                    11 |
+-----------------------+
1 row in set (0.00 sec)

mysql>
```

Display information about the number of products and their names (select columns from the Fridge table). Group the results by expiration date.

```
mysql> SELECT s.Product_Name AS PRODUCT1, e.Product_Name AS PRODUCT2, s.Expiration_Date FRO
M weird_fridge s, weird_fridge e WHERE s.Item_ID <> e.Item_ID AND s.Expiration_Date = e.Exp
iration_Date ORDER BY s.Expiration_Date;
+--------------------+--------------------+-----------------+
| PRODUCT1           | PRODUCT2           | Expiration_Date |
+--------------------+--------------------+-----------------+
| Pringles Original  | Pringles BBQ Sauce | 2024-01-15      |
| Pringles BBQ Sauce | Pringles Original  | 2024-01-15      |
| Pringles Bacon     | Cheddar cheese     | 2024-01-23      |
| Cheddar cheese     | Pringles Bacon     | 2024-01-23      |
+--------------------+--------------------+-----------------+
4 rows in set (0.00 sec)

mysql> SELECT COUNT(Item_ID) FROM weird_fridge GROUP BY Expiration_Date;
+----------------+
| COUNT(Item_ID) |
+----------------+
|              2 |
|              1 |
|              1 |
|              1 |
|              2 |
|              1 |
|              1 |
|              1 |
+----------------+
8 rows in set (0.00 sec)
```