Filtering Queries in SQL

Project description

This simulation project puts the performer, **Maheswar Reddy Avula**, into the position of a system administrator for an organization. Responsibility include finding the required information by querying a database using filters to locate the information more quickly.

(for readability and simplicity, the outputs have been limited to 5 table entries out of 200)

Listing all organization machines

Direction: The admin must get a list of all organization machines and their operating systems.

An SQL query is made to display the **device_id** and **operating_system** of the devices in the **machines** table as follows:

```
MariaDB [organization]> select device_id, operating_System from machines;
+--------------+------------------+
| device_id    | operating_System |
+--------------+------------------+
| a184b775c707 | OS 1             |
| a192b174c940 | OS 2             |
| a305b818c708 | OS 3             |
| a317b635c465 | OS 1             |
| a320b137c219 | OS 2             |
| a398b471c573 | OS 3             |
```

Retrieving a list of machines with OS2

Direction: The admin must obtain a list of all machines with the ‘OS 2’ operating system because these machines need an update.

All data from the **machines** table **where** the **operating_system** is **OS 2** is displayed using the following query:

```
MariaDB [organization]> select device_id, operating_system from machines where operat
ing_system = 'OS 2';
+--------------+------------------+
| device_id    | operating_system |
+--------------+------------------+
| a192b174c940 | OS 2             |
| a320b137c219 | OS 2             |
| a821b452c176 | OS 2             |
| b157c491d493 | OS 2             |
| b264c773d977 | OS 2             |
```

Listing employees in specific departments

Direction: The admin must retrieve a list of all the employees in the Finance and Sales departments to obtain their office numbers so that a notice about handling confidential financial information can be posted to these offices.

All data from the **machines** table **where** the **department** is **Finance** is displayed using the following query:

```
MariaDB [organization]> select * from employees where department = 'Finance';
+-------------+--------------+----------+------------+-------------+
| employee_id | device_id    | username | department | office      |
+-------------+--------------+----------+------------+-------------+
|        1003 | d394e816f943 | sgilmore | Finance    | South-153   |
|        1007 | h174i497j413 | wjaffrey | Finance    | North-406   |
|        1008 | i858j583k571 | abernard | Finance    | South-170   |
|        1010 | k2421212m542 | jlansky  | Finance    | South-109   |
|        1015 | p611q262r945 | jsoto    | Finance    | North-271   |
|        1017 | r550s824t230 | jclark   | Finance    | North-188   |
```

Next, all data from the machines table where the department is Sales is displayed using the following query:

```
MariaDB [organization]> select * from employees where department = 'Sales';
+-------------+--------------+----------+------------+-------------+
| employee_id | device_id    | username | department | office      |
+-------------+--------------+----------+------------+-------------+
|        1009 | NULL         | lrodriqu | Sales      | South-134   |
|        1011 | l748m120n401 | drosas   | Sales      | South-292   |
|        1024 | y976z753a267 | iuduike  | Sales      | South-215   |
|        1025 | z381a365b233 | jhill    | Sales      | North-115   |
|        1035 | j236k303l245 | bisles   | Sales      | South-171   |
|        1039 | n253o917p623 | cjackson | Sales      | East-378    |
```

Identifying employee machines

Direction: The team recently discovered that there are issues with machines in the South building. The admin needs to obtain certain employee and computer information.

1. A machine in 'South-109' has an issue. Determine which employee uses that computer so an alert can be sent to them.

The employee is identified as per the requirement using the following query:

```
MariaDB [organization]> select * from employees where office = 'South-109';
+-------------+--------------+----------+------------+-----------+
| employee_id | device_id    | username | department | office    |
+-------------+--------------+----------+------------+-----------+
|        1010 | k2421212m542 | jlansky  | Finance    | South-109 |
+-------------+--------------+----------+------------+-----------+
1 row in set (0.569 sec)
```

2. The team has determined that there is an issue with all the machines in the South building. Admin must fetch information on all the systems in the south Office so that they can be notified of the issue.

The above mentioned task was completed using the where clause paired with the like operator as follows:

```
MariaDB [organization]> select * from employees where office like 'S%';
+-------------+--------------+----------+-----------------------+-----------+
| employee_id | device_id    | username | department            | office    |
+-------------+--------------+----------+-----------------------+-----------+
|        1003 | d394e816f943 | sgilmore | Finance               | South-153 |
|        1004 | e218f877g788 | eraab    | Human Resources       | South-127 |
|        1005 | f551g340h864 | gesparza | Human Resources       | South-366 |
|        1008 | i858j583k571 | abernard | Finance               | South-170 |
|        1009 | NULL         | lrodriqu | Sales                 | South-134 |
|        1010 | k2421212m542 | jlansky  | Finance               | South-109 |
|        1011 | l748m120n401 | drosas   | Sales                 | South-292 |
```

Summary

Efficient queries were made to display the information using **select** command, the **where** clause and the **like**, **=** operators. All tasks were successfully completed in accordance with the directions given by the organization.