Apply filters to SQL queries

Project description

The company where I work wants to secure more of the system and address some security issues related to log in attempts and some users' machines.

Retrieve after hours failed login attempts

There was a security incident that occurred after business hours. A login attempt was registered and all attempts after 18:00 must be investigated.
This query filters all the log in attempts after 18:00. I selected the table `log_in_attempts`. I use the operator `WHERE` and `AND` to filter the results. The first condition for the query is `login_time > '18:00'` which will filter all the login after that time. The second condition is `success = FALSE`, that filters the failed login attempts.

```
MariaDB [organization]> clear
MariaDB [organization]> SELECT *
    ->
    -> FROM log_in_attempts
    ->
    -> WHERE login_time > '18:00'  AND success = FALSE;
+----------+----------+------------+------------+---------+------
-----------+---------+
| event_id | username | login_date | login_time | country | ip_ad
dress      | success |
+----------+----------+------------+------------+---------+------
-----------+---------+
```

Retrieve login attempts on specific dates

An event between some specific dates has occurred and must be investigated. The query filters all the events that occurred between the 2022-05-09 and 2022-05-08. I select the data from the table of log_in_attemps using the conditional `WHERE` and `OR`. The first condition `login_date = '2022-05-09'` and the second condition `login_date = '2022-05-08'` that will filter the specific dates needed.

```
MariaDB [organization]> SELECT *
    ->
    -> FROM log_in_attempts
    ->
    -> WHERE login_date = '2022-05-09' OR login_date = '2022-05-0
8';
+----------+----------+------------+------------+---------+------
-----------+---------+
| event_id | username | login_date | login_time | country | ip_ad
dress      | success |
+----------+----------+------------+------------+---------+------
-----------+---------+
|        1 | jrafael  | 2022-05-09 | 04:56:27   | CAN     | 192.1
68.243.140 |       1 |
|        3 | dkot     | 2022-05-09 | 06:47:41   | USA     | 192.1
68.151.162 |       1 |
```

Retrieve login attempts outside of Mexico

After investigating the login attempts the login attempts outside Mexico must be investigated.The following query filters all the login attempts outside Mexico. I used `MEX` to represent the pattern that must match on the table and the percentage sign `(%)` represents any number of specific characters when used with `LIKE`.

```
SELECT *
FROM log_in_attempts
WHERE NOT country LIKE 'MEX%' ;
```

Retrieve employees in Marketing

The team wanted to perform a security update on the marketing department and I needed to retrieve the information of the employees' machines. This SQL query filters the employees' machines from the marketing department in the east building. First I select the data form the `employees` table , using a `WHERE` clause and `AND` to filter employees in the marketing department who work in the East building

```
SELECT*
FROM employees
WHERE department = 'Marketing' AND office LIKE 'East%' ;
```

Retrieve employees in Finance or Sales

The team needs to perform a security update in the finance and sales team. The first part of the screen shot is my query and the second part is the output.

```
MariaDB [organization]> SELECT*  FROM employees WHERE department
= 'Finance' OR department = 'Sales'
    -> ;
+-------------+--------------+----------+------------+-----------
--+
| 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
  |
|        1009 | NULL         | lrodriqu | Sales      | South-134
  |
|        1010 | k2421212m542 | jlansky  | Finance    | South-109
  |
|        1011 | l748m120n401 | drosas   | Sales      | South-292
  |
|        1015 | p611q262r945 | jsoto    | Finance    | North-271
  |
|        1017 | r550s824t230 | jclark   | Finance    | North-188
```

Retrieve all employees not in IT

An update on the department should be made except on the IT department because it already has it. The sql query filters the employees who are not in the IT department.

```
MariaDB [organization]> SELECT* FROM employees WHERE NOT departme
nt 'Information Technology';
ERROR 1064 (42000): You have an error in your SQL syntax; check t
he manual that corresponds to your MariaDB server version for the
 right syntax to use near ''Information Technology'' at line 1
MariaDB [organization]>  SELECT* FROM employees WHERE NOT departm
ent =  'Information Technology';
+-------------+--------------+----------+-----------------+------
-------+
| employee_id | device_id    | username | department      | offic
e      |
+-------------+--------------+----------+-----------------+------
-------+
|        1000 | a320b137c219 | elarson  | Marketing       | East-
170    |
|        1001 | b239c825d303 | bmoreno  | Marketing       | Centr
al-276 |
|        1002 | c116d593e558 | tshah    | Human Resources | North
-434   |
|        1003 | d394e816f943 | sgilmore | Finance         | South
-153   |
|        1004 | e218f877g788 | eraab    | Human Resources | South
```

Summary

Use of sql queries to get different logging information. Use of operators: `AND, OR , NOT,` percentage sign `(%)` wildcard to filter patterns and `LIKE`.