Apply filters to SQL queries

Scenario

Review the scenario below. Then complete the step-by-step instructions.

You are a security professional at a large organization. Part of your job is to investigate security issues to help keep the system secure. You recently discovered some potential security issues that involve login attempts and employee machines.

Your task is to examine the organization's data in their employees and log_in_attempts tables. You'll need to use SQL filters to retrieve records from different datasets and investigate the potential security issues.

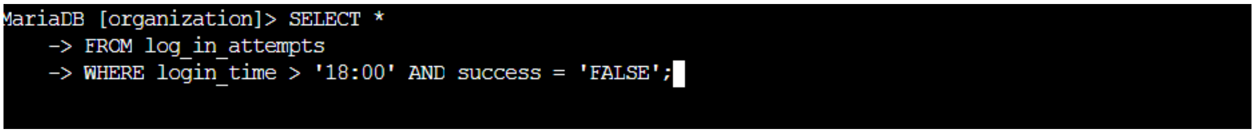
Note: This scenario involves the same queries as the ones the Filter with AND, OR, and NOT lab. You can revisit the lab to get screenshots to include in your portfolio document. If you choose, it's also possible to complete this activity without revisiting the lab by typing your queries in the template

Project description

[Describe what you accomplish through SQL.]
You recently discovered a potential security incident that occurred after business hours. To investigate this, you need to query the **log_in_attempts** table and review after hours login activity. Use filters in SQL to create a query that identifies all failed login attempts that occurred after 18:00. (The time of the login attempt is found in the **login_time** column. The **success** column contains a value of **0** when a login attempt failed; you can use either a value of **0** or **FALSE** in your query to identify failed login attempts.)

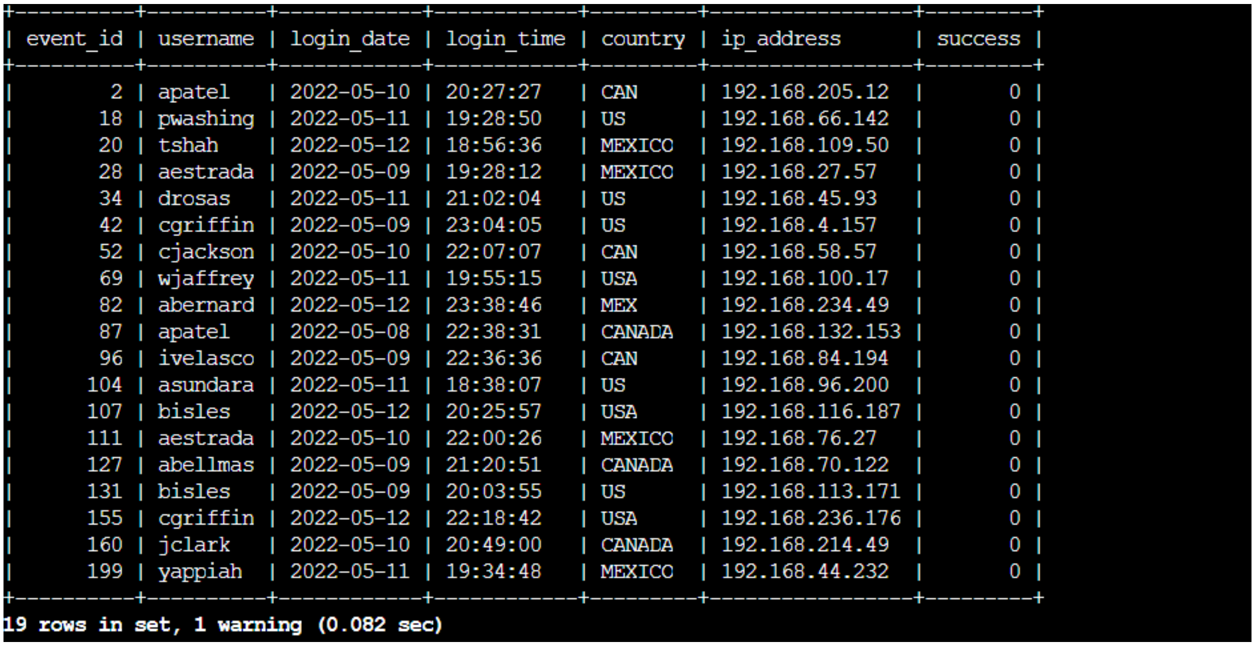
Retrieve after hours failed login attempts

[Add content here.]
SQL command:



```
MariaDB [organization]> SELECT *
    -> FROM log_in_attempts
    -> WHERE login_time > '18:00' AND success = 'FALSE';
```

Results:

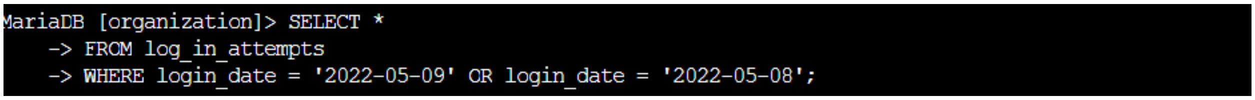


```
+----------+----------+------------+------------+---------+-----------------+---------+
| event_id | username | login_date | login_time | country | ip_address      | success |
+----------+----------+------------+------------+---------+-----------------+---------+
|        2 | apatel   | 2022-05-10 | 20:27:27   | CAN     | 192.168.205.12  |       0 |
|       18 | pwashing | 2022-05-11 | 19:28:50   | US      | 192.168.66.142  |       0 |
|       20 | tshah    | 2022-05-12 | 18:56:36   | MEXICO  | 192.168.109.50  |       0 |
|       28 | aestrada | 2022-05-09 | 19:28:12   | MEXICO  | 192.168.27.57   |       0 |
|       34 | drosas   | 2022-05-11 | 21:02:04   | US      | 192.168.45.93   |       0 |
|       42 | cgriffin | 2022-05-09 | 23:04:05   | US      | 192.168.4.157   |       0 |
|       52 | cjackson | 2022-05-10 | 22:07:07   | CAN     | 192.168.58.57   |       0 |
|       69 | wjaffrey | 2022-05-11 | 19:55:15   | USA     | 192.168.100.17  |       0 |
|       82 | abernard | 2022-05-12 | 23:38:46   | MEX     | 192.168.234.49  |       0 |
|       87 | apatel   | 2022-05-08 | 22:38:31   | CANADA  | 192.168.132.153 |       0 |
|       96 | ivelasco | 2022-05-09 | 22:36:36   | CAN     | 192.168.84.194  |       0 |
|      104 | asundara | 2022-05-11 | 18:38:07   | US      | 192.168.96.200  |       0 |
|      107 | bisles   | 2022-05-12 | 20:25:57   | USA     | 192.168.116.187 |       0 |
|      111 | aestrada | 2022-05-10 | 22:00:26   | MEXICO  | 192.168.76.27   |       0 |
|      127 | abellmas | 2022-05-09 | 21:20:51   | CANADA  | 192.168.70.122  |       0 |
|      131 | bisles   | 2022-05-09 | 20:03:55   | US      | 192.168.113.171 |       0 |
|      155 | cgriffin | 2022-05-12 | 22:18:42   | USA     | 192.168.236.176 |       0 |
|      160 | jclark   | 2022-05-10 | 20:49:00   | CANADA  | 192.168.214.49  |       0 |
|      199 | yappiah  | 2022-05-11 | 19:34:48   | MEXICO  | 192.168.44.232  |       0 |
+----------+----------+------------+------------+---------+-----------------+---------+
19 rows in set, 1 warning (0.082 sec)
```

Retrieve login attempts on specific dates

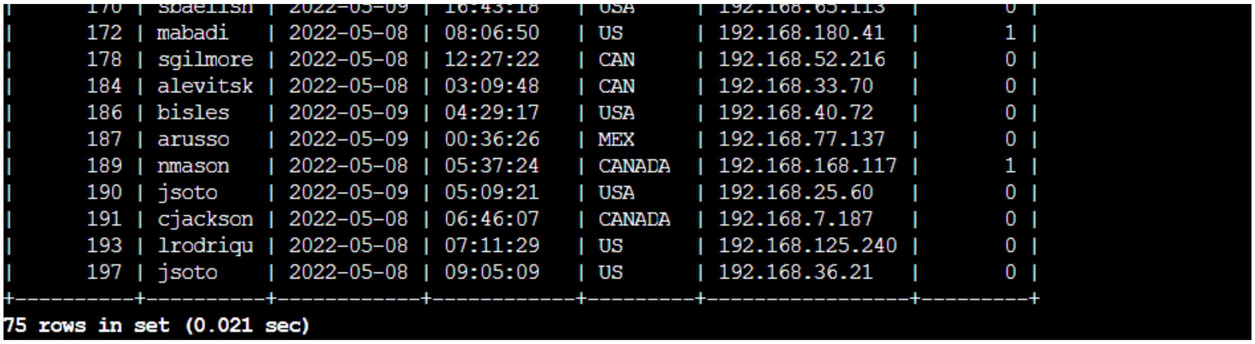
[Add content here.]

SQL command:



```
MariaDB [organization]> SELECT *
    -> FROM log_in_attempts
    -> WHERE login_date = '2022-05-09' OR login_date = '2022-05-08';
```

Results:

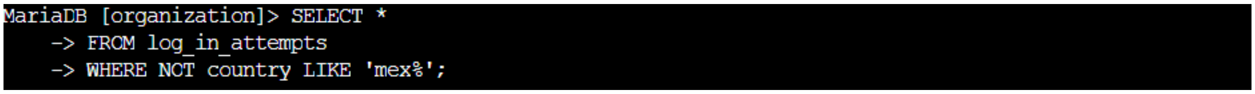


```
|      170 | sbaelish | 2022-05-09 | 16:43:18   | USA     | 192.168.65.113  |       0 |
|      172 | mabadi   | 2022-05-08 | 08:06:50   | US      | 192.168.180.41  |       1 |
|      178 | sgilmore | 2022-05-08 | 12:27:22   | CAN     | 192.168.52.216  |       0 |
|      184 | alevitsk | 2022-05-08 | 03:09:48   | CAN     | 192.168.33.70   |       0 |
|      186 | bisles   | 2022-05-09 | 04:29:17   | USA     | 192.168.40.72   |       0 |
|      187 | arusso   | 2022-05-09 | 00:36:26   | MEX     | 192.168.77.137  |       0 |
|      189 | nmason   | 2022-05-08 | 05:37:24   | CANADA  | 192.168.168.117 |       1 |
|      190 | jsoto    | 2022-05-09 | 05:09:21   | USA     | 192.168.25.60   |       0 |
|      191 | cjackson | 2022-05-08 | 06:46:07   | CANADA  | 192.168.7.187   |       0 |
|      193 | lrodriqu | 2022-05-08 | 07:11:29   | US      | 192.168.125.240 |       0 |
|      197 | jsoto    | 2022-05-08 | 09:05:09   | US      | 192.168.36.21   |       0 |
+----------+----------+------------+------------+---------+-----------------+---------+
75 rows in set (0.021 sec)
```

Retrieve login attempts outside of Mexico

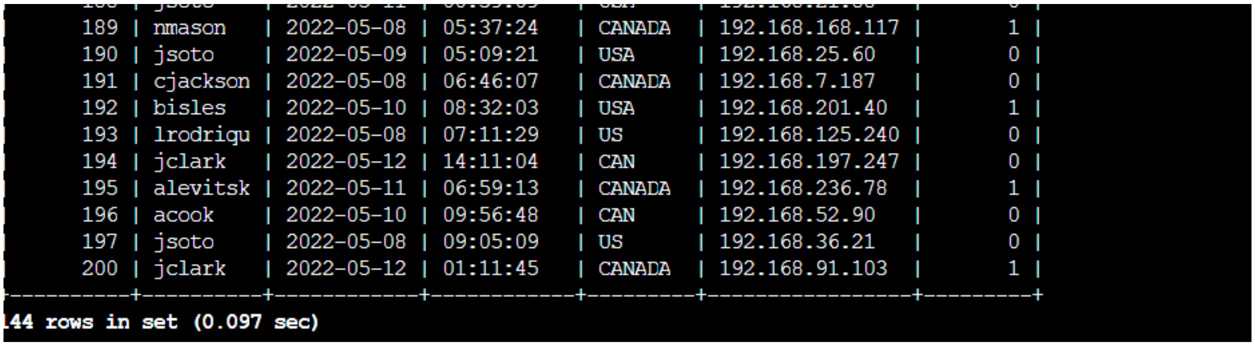
[Add content here.]

SQL command:



```
MariaDB [organization]> SELECT *
    -> FROM log_in_attempts
    -> WHERE NOT country LIKE 'mex%';
```

Results:

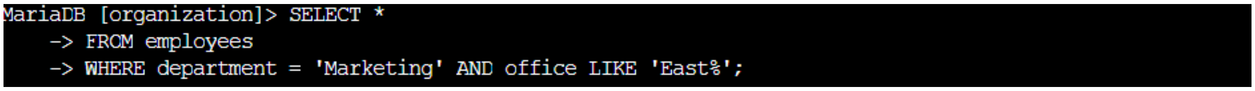


```
|      189 | nmason   | 2022-05-08 | 05:37:24   | CANADA  | 192.168.168.117 |       1 |
|      190 | jsoto    | 2022-05-09 | 05:09:21   | USA     | 192.168.25.60   |       0 |
|      191 | cjackson | 2022-05-08 | 06:46:07   | CANADA  | 192.168.7.187   |       0 |
|      192 | bisles   | 2022-05-10 | 08:32:03   | USA     | 192.168.201.40  |       1 |
|      193 | lrodriqu | 2022-05-08 | 07:11:29   | US      | 192.168.125.240 |       0 |
|      194 | jclark   | 2022-05-12 | 14:11:04   | CAN     | 192.168.197.247 |       0 |
|      195 | alevitsk | 2022-05-11 | 06:59:13   | CANADA  | 192.168.236.78  |       1 |
|      196 | acook    | 2022-05-10 | 09:56:48   | CAN     | 192.168.52.90   |       0 |
|      197 | jsoto    | 2022-05-08 | 09:05:09   | US      | 192.168.36.21   |       0 |
|      200 | jclark   | 2022-05-12 | 01:11:45   | CANADA  | 192.168.91.103  |       1 |
+----------+----------+------------+------------+---------+-----------------+---------+
44 rows in set (0.097 sec)
```

Retrieve employees in Marketing

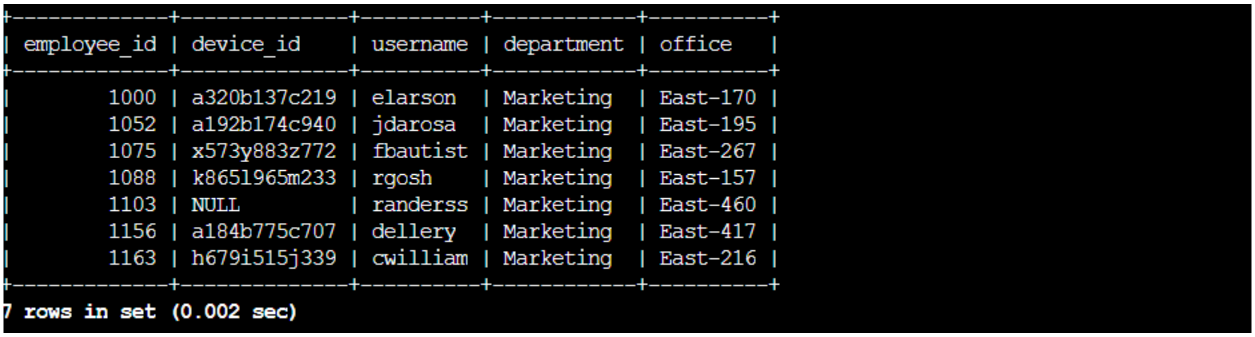
[Add content here.]

SQL command:



```
MariaDB [organization]> SELECT *
    -> FROM employees
    -> WHERE department = 'Marketing' AND office LIKE 'East%';
```

Results:

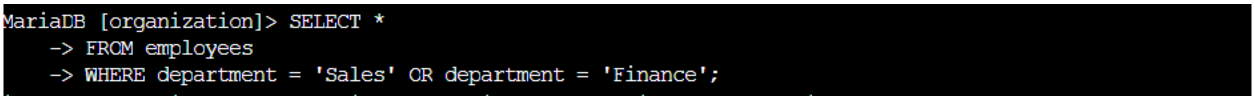


```
+-------------+---------------+----------+------------+----------+
| employee_id | device_id     | username | department | office   |
+-------------+---------------+----------+------------+----------+
|        1000 | a320b137c219  | elarson  | Marketing  | East-170 |
|        1052 | a192b174c940  | jdarosa  | Marketing  | East-195 |
|        1075 | x573y883z772  | fbautist | Marketing  | East-267 |
|        1088 | k8651965m233  | rgosh    | Marketing  | East-157 |
|        1103 | NULL          | randerss | Marketing  | East-460 |
|        1156 | a184b775c707  | dellery  | Marketing  | East-417 |
|        1163 | h679i515j339  | cwilliam | Marketing  | East-216 |
+-------------+---------------+----------+------------+----------+
7 rows in set (0.002 sec)
```

Retrieve employees in Finance or Sales

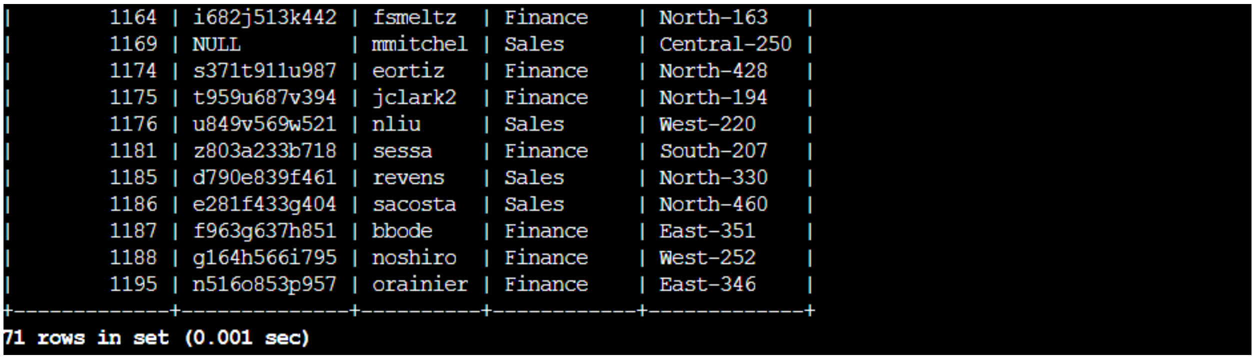
[Add content here.]

SQL command:



```
MariaDB [organization]> SELECT *
    -> FROM employees
    -> WHERE department = 'Sales' OR department = 'Finance';
```

Results:

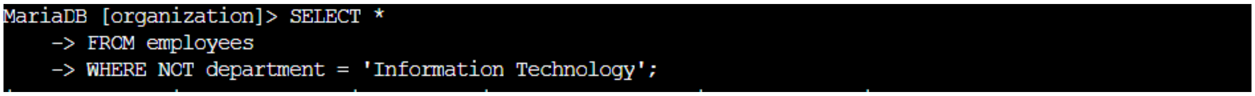


```
|        1164 | i682j513k442  | fsmeltz  | Finance    | North-163   |
|        1169 | NULL          | mmitchel | Sales      | Central-250 |
|        1174 | s371t911u987  | eortiz   | Finance    | North-428   |
|        1175 | t959u687v394  | jclark2  | Finance    | North-194   |
|        1176 | u849v569w521  | nliu     | Sales      | West-220    |
|        1181 | z803a233b718  | sessa    | Finance    | South-207   |
|        1185 | d790e839f461  | revens   | Sales      | North-330   |
|        1186 | e281f433g404  | sacosta  | Sales      | North-460   |
|        1187 | f963g637h851  | bbode    | Finance    | East-351    |
|        1188 | g164h566i795  | noshiro  | Finance    | West-252    |
|        1195 | n516o853p957  | orainier | Finance    | East-346    |
+-------------+---------------+----------+------------+-------------+
71 rows in set (0.001 sec)
```

Retrieve all employees not in IT

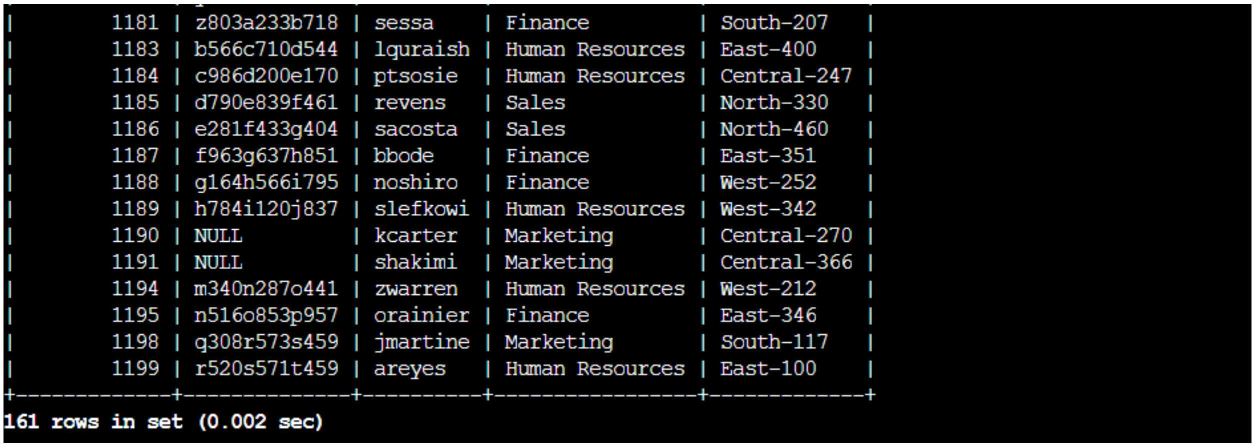
[Add content here.]

SQL command:



```
MariaDB [organization]> SELECT *
    -> FROM employees
    -> WHERE NOT department = 'Information Technology';
```

Results:



```
|        1181 | z803a233b718 | sessa    | Finance         | South-207   |
|        1183 | b566c710d544 | lquraish | Human Resources | East-400    |
|        1184 | c986d200e170 | ptsosie  | Human Resources | Central-247 |
|        1185 | d790e839f461 | revens   | Sales           | North-330   |
|        1186 | e281f433g404 | sacosta  | Sales           | North-460   |
|        1187 | f963g637h851 | bbode    | Finance         | East-351    |
|        1188 | g164h566i795 | noshiro  | Finance         | West-252    |
|        1189 | h784i120j837 | slefkowi | Human Resources | West-342    |
|        1190 | NULL         | kcarter  | Marketing       | Central-270 |
|        1191 | NULL         | shakimi  | Marketing       | Central-366 |
|        1194 | m340n287o441 | zwarren  | Human Resources | West-212    |
|        1195 | n516o853p957 | orainier | Finance         | East-346    |
|        1198 | q308r573s459 | jmartine | Marketing       | South-117   |
|        1199 | r520s571t459 | areyes   | Human Resources | East-100    |
+-------------+--------------+----------+-----------------+-------------+
161 rows in set (0.002 sec)
```

Summary

[Add content here.]