Apply filters to SQL queries

Project description

In this lab, I practiced using SQL filters to retrieve specific information from datasets. I applied `WHERE` clauses with operators such as `LIKE`, `NOT LIKE`, `AND`, and `OR` to narrow down results based on various conditions. Below is a summary of each query and how it was used:

As a security professional at a large organization, I investigated suspicious login activity that could indicate potential security threats. This project focuses on analyzing data from two internal databases — the `employees` table and the `log_in_attempts` table — using SQL queries with **AND**, **OR**, and **NOT** filters to isolate unusual patterns.

Objective:

The goal of this project was to identify:

- Employees with suspicious login activity (e.g., failed attempts or access from unusual locations)
- Accounts that may have been targeted by attackers
- Systems or machines that showed repeated unauthorized access attempts

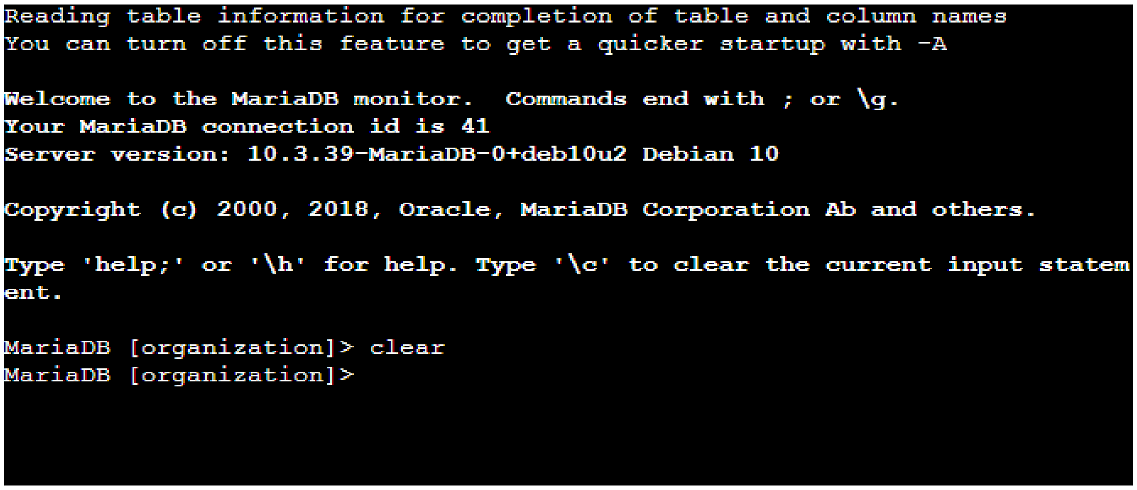
Tasks Completed:

- Queried the `log_in_attempts` table to find failed logins occurring outside of business hours.
- Combined filters using **AND** to detect multiple conditions, such as failed login attempts from unexpected IP addresses.
- Used **OR** to broaden results and catch attempts that met any number of warning signs (e.g., failed logins OR logins from blacklisted regions).
- Applied **NOT** filters to exclude known safe login records and reduce false positives.

- Joined the `employees` and `log_in_attempts` tables to match login attempts with specific employees, helping identify if compromised credentials were in use.

Tools Used:

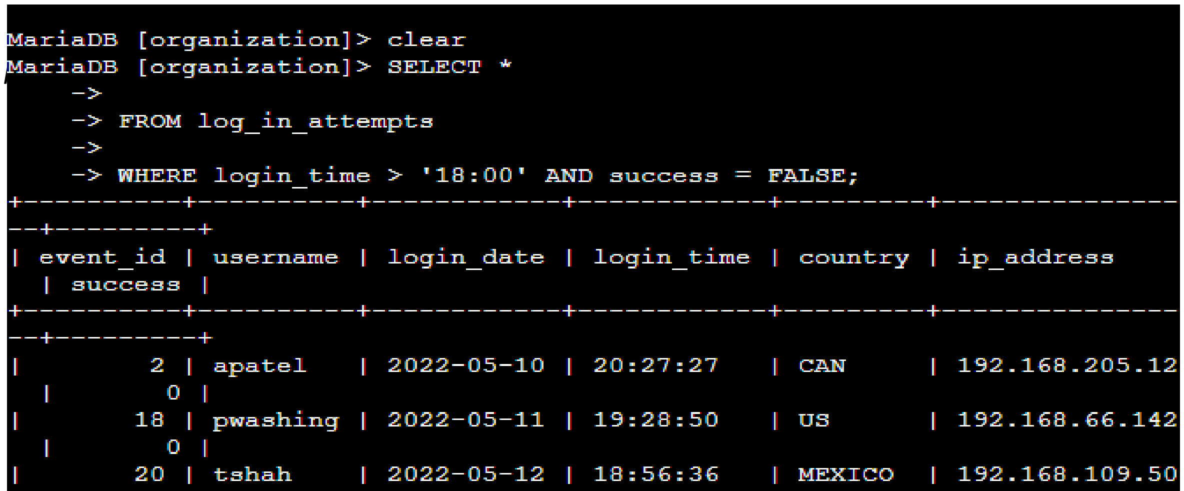
- SQL
- Sample internal security database
- SQL filtering techniques: `WHERE`, `AND`, `OR`, `NOT`, `JOIN`



```
Reading table information for completion of table and column names
You can turn off this feature to get a quicker startup with -A

Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MariaDB connection id is 41
Server version: 10.3.39-MariaDB-0+deb10u2 Debian 10

Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and others.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statem
ent.

MariaDB [organization]> clear
MariaDB [organization]>
```

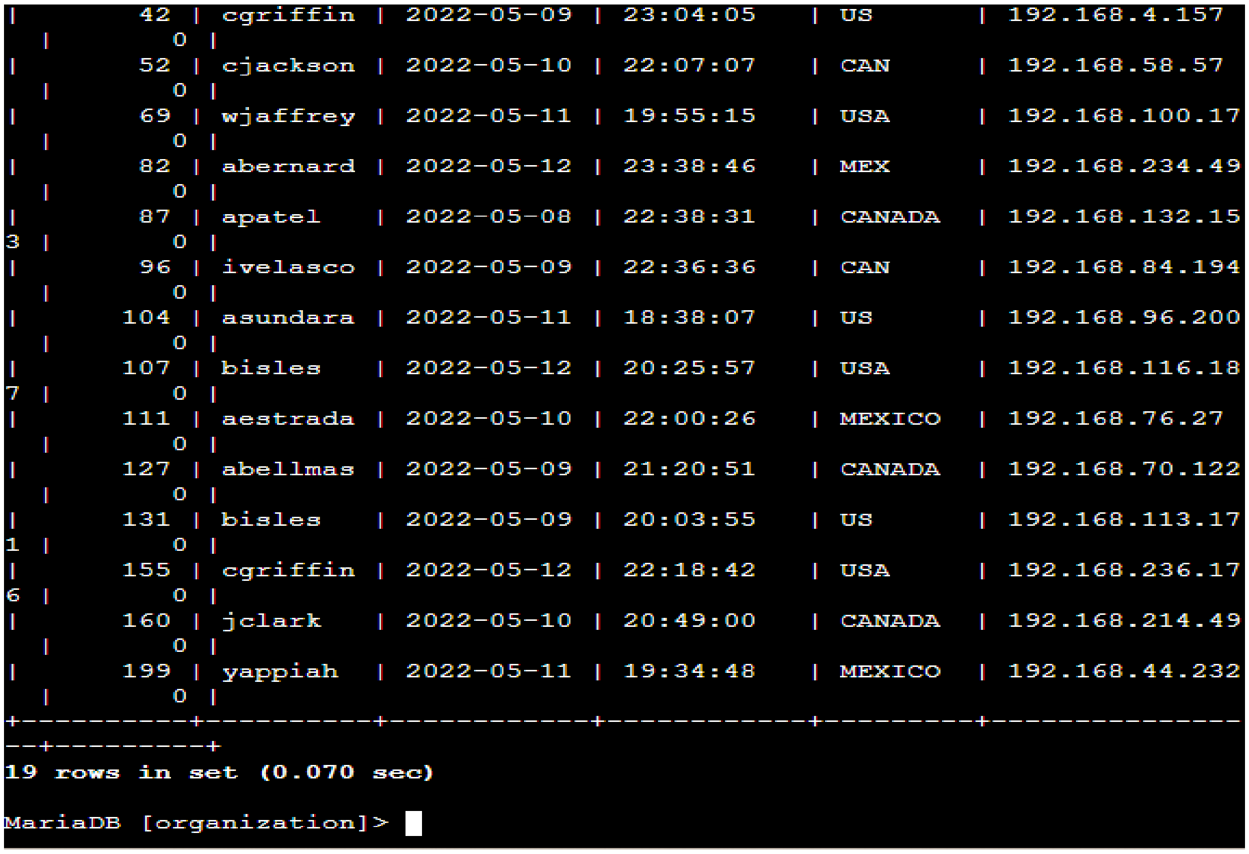
Retrieved after hours failed login attempts

This query is designed to help identify **potential security incidents** by filtering the `log_in_attempts` table for **failed login attempts** that occurred **after business hours**, specifically after **18:00 (6:00 PM)**.



```
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_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
```

`WHERE success = 0` filters the results to only include **failed login attempts** (where `success = 0` means the attempt was unsuccessful). `AND login_time > '18:00:00'` further filters the data to include only those attempts that occurred **after 6:00 PM**, which is considered outside regular working hours.

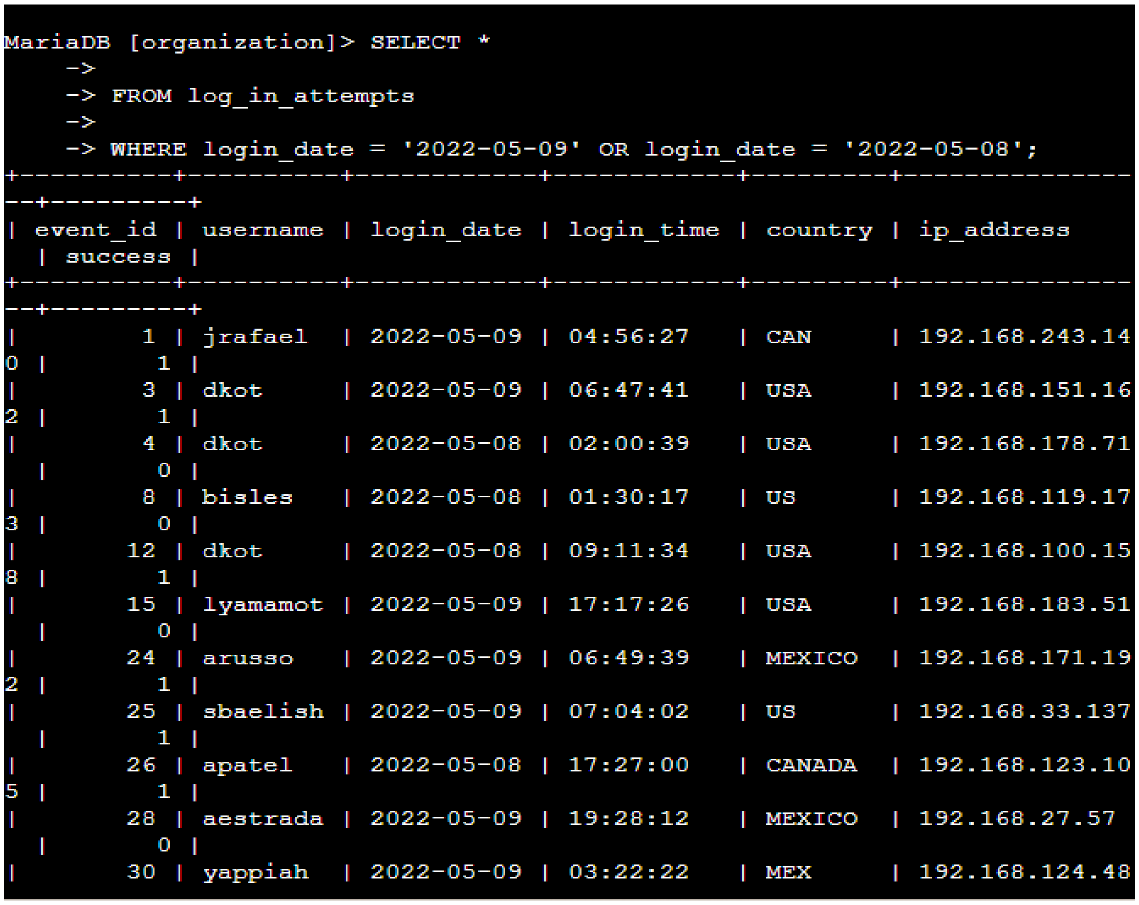


```
|       42 | cgriffin | 2022-05-09 | 23:04:05   | US       | 192.168.4.157
  |      0 |
|       52 | cjackson | 2022-05-10 | 22:07:07   | CAN      | 192.168.58.57
  |      0 |
|       69 | wjaffrey | 2022-05-11 | 19:55:15   | USA      | 192.168.100.17
  |      0 |
|       82 | abernard | 2022-05-12 | 23:38:46   | MEX      | 192.168.234.49
  |      0 |
|       87 | apatel   | 2022-05-08 | 22:38:31   | CANADA   | 192.168.132.15
3 |      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      | 192.168.116.18
7 |      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       | 192.168.113.17
1 |      0 |
|      155 | cgriffin | 2022-05-12 | 22:18:42   | USA      | 192.168.236.17
6 |      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 (0.070 sec)

MariaDB [organization]>
```

This query is useful for **spotting suspicious login behavior** such as brute-force attempts or unauthorized access efforts that often happen after hours when systems are less actively monitored.

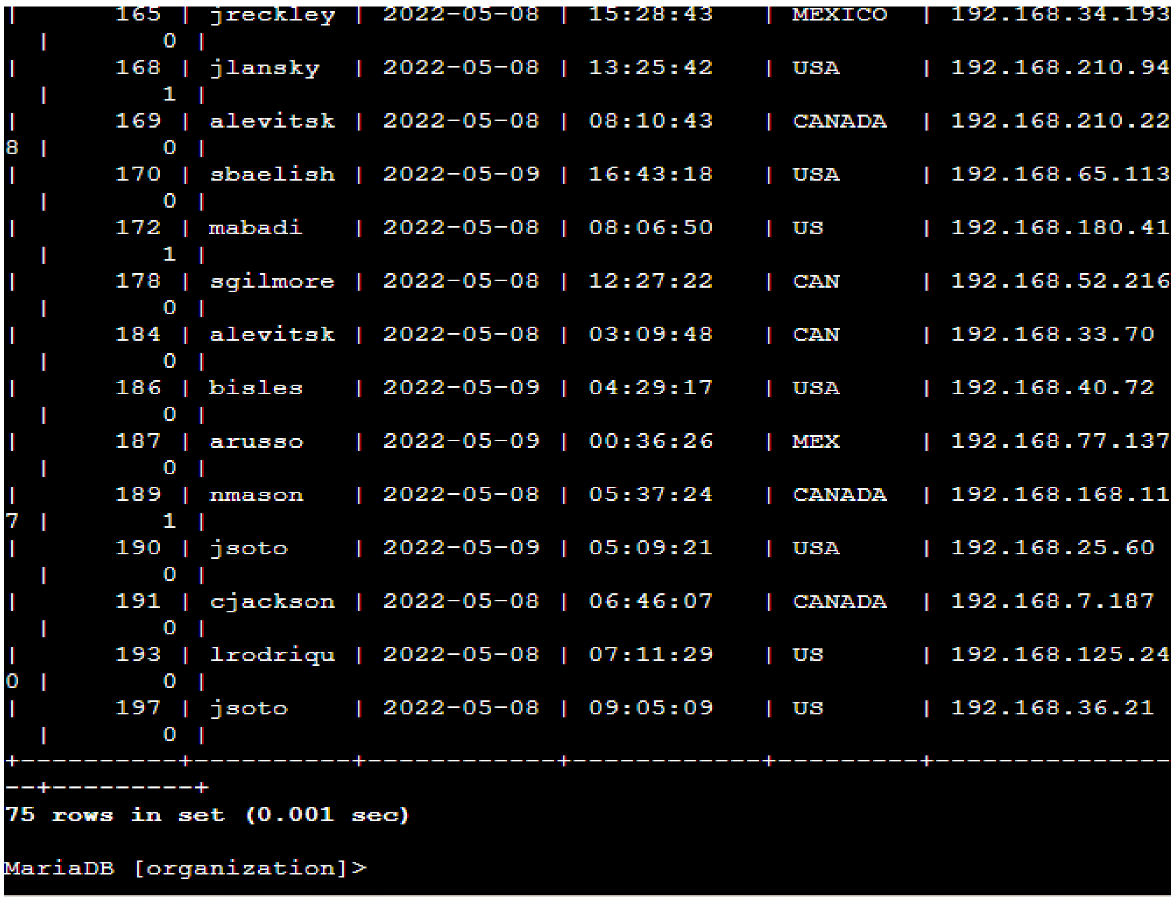
Retrieve login attempts on specific dates

To investigate suspicious activity that occurred on 2022-05-09, I created an SQL query to retrieve all login attempts made on that day as well as the day before (2022-05-08). I used a `WHERE` clause combined with the `OR` operator to filter the `login_date` column for both specific dates.



```
MariaDB [organization]> SELECT *
    ->
    -> FROM log_in_attempts
    ->
    -> WHERE login_date = '2022-05-09' OR login_date = '2022-05-08';
+----------+----------+------------+------------+---------+---------------
--+---------+
| event_id | username | login_date | login_time | country | ip_address
  | success |
+----------+----------+------------+------------+---------+---------------
--+---------+
|        1 | jrafael  | 2022-05-09 | 04:56:27   | CAN     | 192.168.243.14
0 |       1 |
|        3 | dkot     | 2022-05-09 | 06:47:41   | USA     | 192.168.151.16
2 |       1 |
|        4 | dkot     | 2022-05-08 | 02:00:39   | USA     | 192.168.178.71
  |       0 |
|        8 | bisles   | 2022-05-08 | 01:30:17   | US      | 192.168.119.17
3 |       0 |
|       12 | dkot     | 2022-05-08 | 09:11:34   | USA     | 192.168.100.15
8 |       1 |
|       15 | lyamamot | 2022-05-09 | 17:17:26   | USA     | 192.168.183.51
  |       0 |
|       24 | arusso   | 2022-05-09 | 06:49:39   | MEXICO  | 192.168.171.19
2 |       1 |
|       25 | sbaelish | 2022-05-09 | 07:04:02   | US      | 192.168.33.137
  |       1 |
|       26 | apatel   | 2022-05-08 | 17:27:00   | CANADA  | 192.168.123.10
5 |       1 |
|       28 | aestrada | 2022-05-09 | 19:28:12   | MEXICO  | 192.168.27.57
  |       0 |
|       30 | yappiah  | 2022-05-09 | 03:22:22   | MEX     | 192.168.124.48
```

This query works by selecting all columns (`*`) from the `logins` table where the `login_date` is either `'2022-05-09'` **or** `'2022-05-08'`.

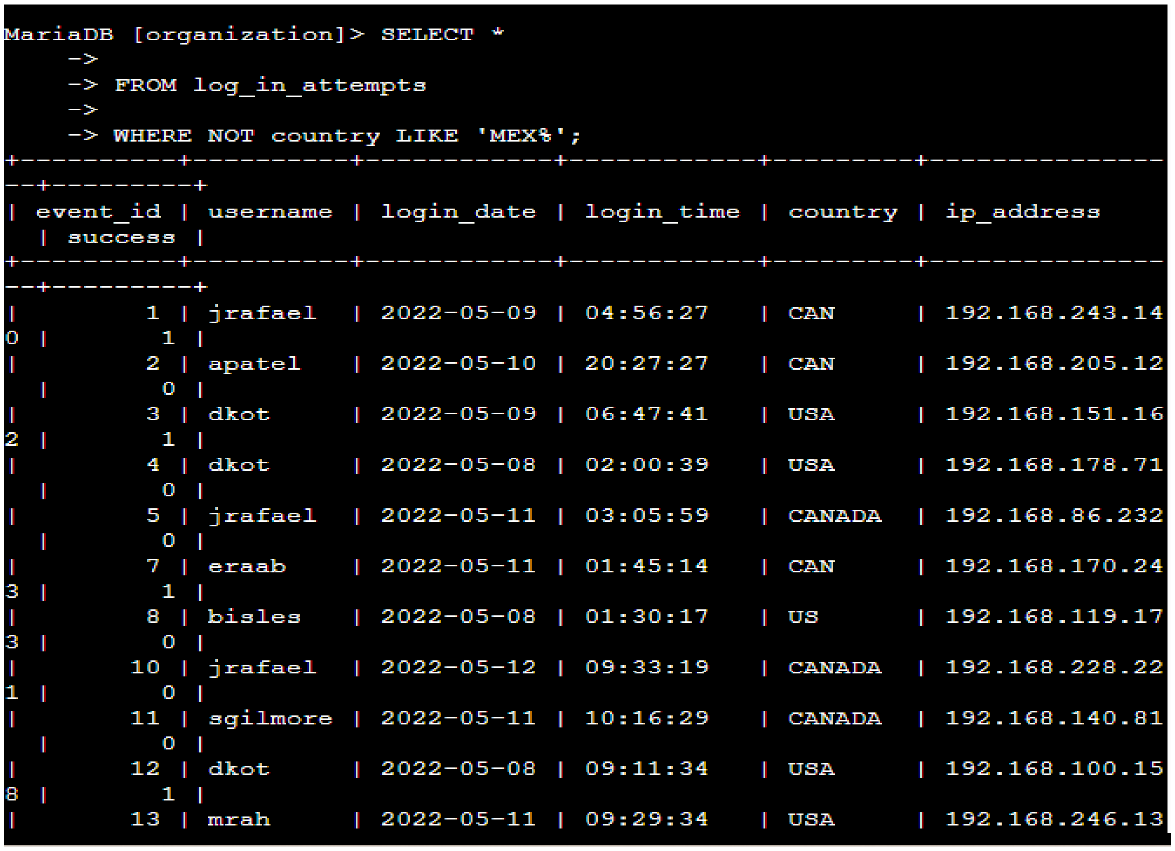


```
|       165 | jreckley | 2022-05-08 | 15:28:43   | MEXICO   | 192.168.34.193
  |       0 |
|       168 | jlansky  | 2022-05-08 | 13:25:42   | USA      | 192.168.210.94
  |       1 |
|       169 | alevitsk | 2022-05-08 | 08:10:43   | CANADA   | 192.168.210.22
8 |       0 |
|       170 | sbaelish | 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   | 192.168.168.11
7 |       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       | 192.168.125.24
0 |       0 |
|       197 | jsoto    | 2022-05-08 | 09:05:09   | US       | 192.168.36.21
  |       0 |
+----------+----------+------------+------------+---------+---------------
--+----------+
75 rows in set (0.001 sec)

MariaDB [organization]>
```

Using the `OR` operator ensures that both dates are included in the result, helping identify all relevant login activity that may relate to the suspicious event.

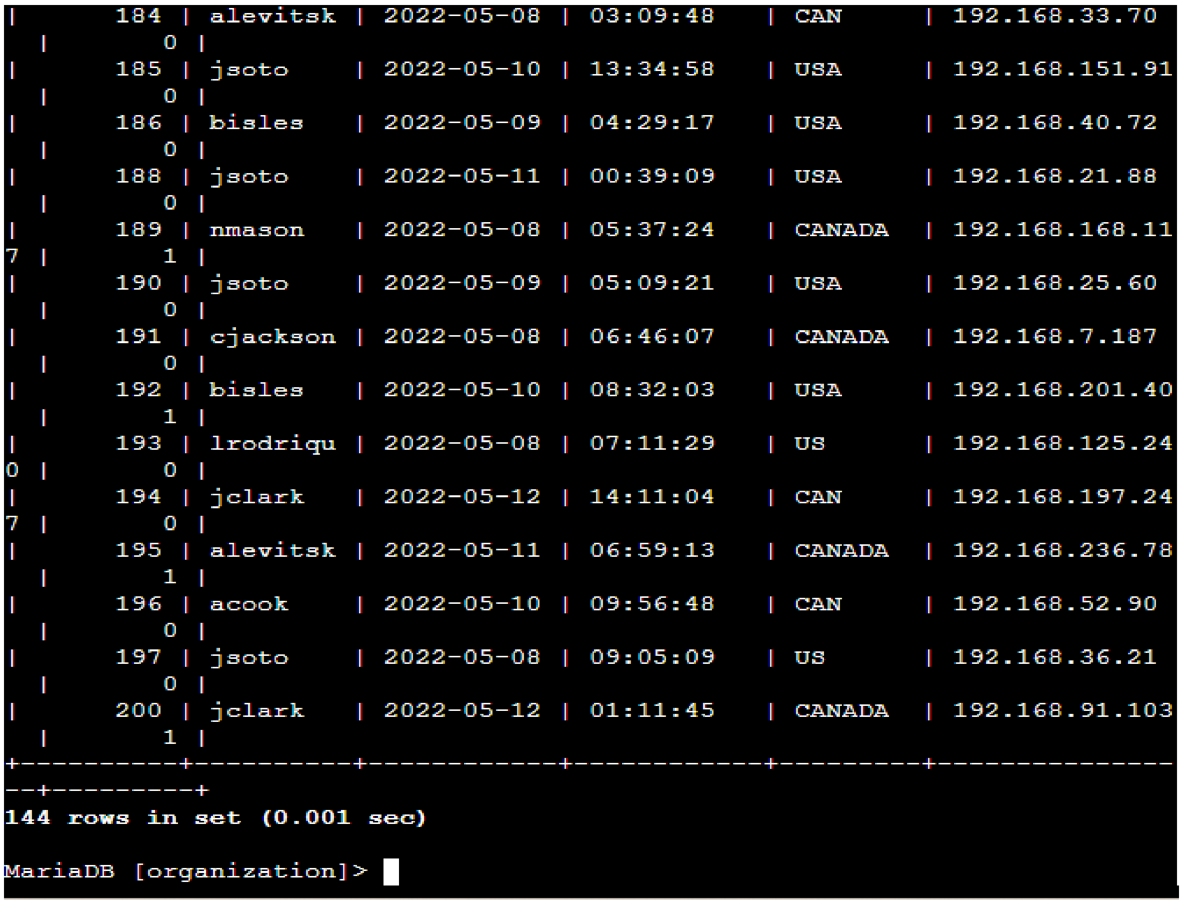
Retrieve login attempts outside of Mexico

To investigate suspicious login activity that occurred **outside of Mexico**, I created an SQL query that filters out any entries where the country is listed as either “MEX” or “MEXICO.” Since the values for Mexico in the `country` column vary, I used the `NOT LIKE` operator with the `%` wildcard to exclude any records that contain those variations.



```
MariaDB [organization]> SELECT *
    ->
    -> FROM log_in_attempts
    ->
    -> WHERE NOT country LIKE 'MEX%';
+----------+----------+------------+------------+---------+---------------
--+---------+
| event_id | username | login_date | login_time | country | ip_address
  | success |
+----------+----------+------------+------------+---------+---------------
--+---------+
|        1 | jrafael  | 2022-05-09 | 04:56:27   | CAN     | 192.168.243.14
0 |       1 |
|        2 | apatel   | 2022-05-10 | 20:27:27   | CAN     | 192.168.205.12
  |       0 |
|        3 | dkot     | 2022-05-09 | 06:47:41   | USA     | 192.168.151.16
2 |       1 |
|        4 | dkot     | 2022-05-08 | 02:00:39   | USA     | 192.168.178.71
  |       0 |
|        5 | jrafael  | 2022-05-11 | 03:05:59   | CANADA  | 192.168.86.232
  |       0 |
|        7 | eraab    | 2022-05-11 | 01:45:14   | CAN     | 192.168.170.24
3 |       1 |
|        8 | bisles   | 2022-05-08 | 01:30:17   | US      | 192.168.119.17
3 |       0 |
|       10 | jrafael  | 2022-05-12 | 09:33:19   | CANADA  | 192.168.228.22
1 |       0 |
|       11 | sgilmore | 2022-05-11 | 10:16:29   | CANADA  | 192.168.140.81
  |       0 |
|       12 | dkot     | 2022-05-08 | 09:11:34   | USA     | 192.168.100.15
8 |       1 |
|       13 | mrah     | 2022-05-11 | 09:29:34   | USA     | 192.168.246.13
```

This query selects all records from the `logins` table where the `country` does **not** contain the substring “MEX.” By using `%MEX%`, the query filters out both “MEX” and “MEXICO” (and any other variation that includes "MEX").

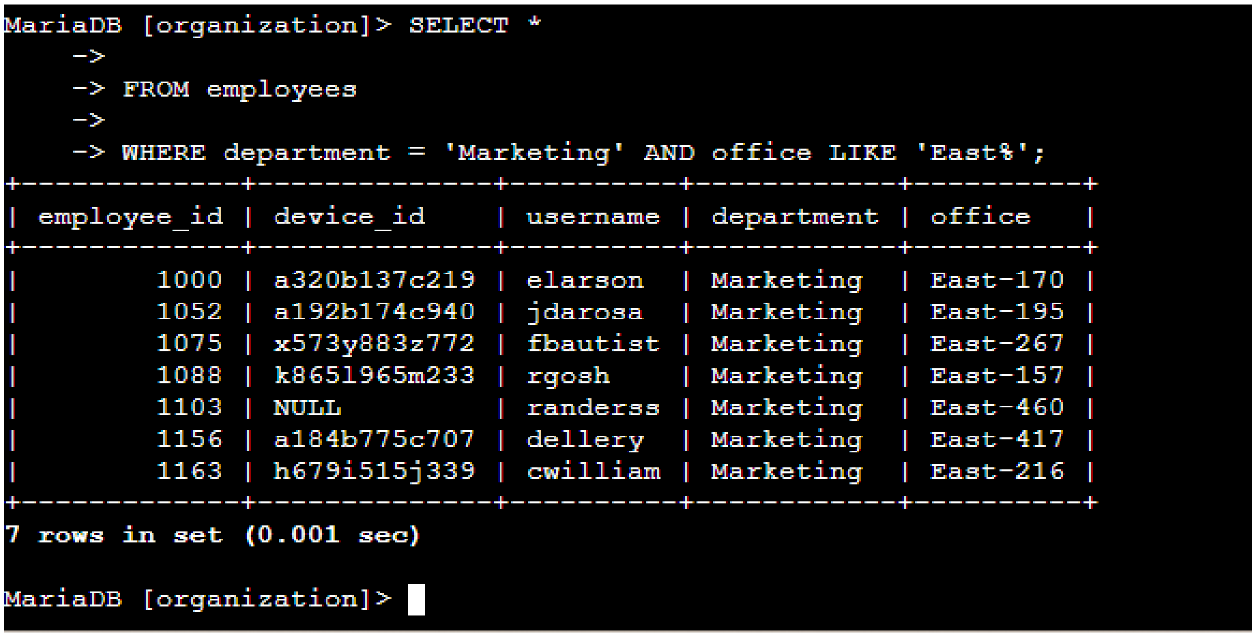


```
|       184 | alevitsk | 2022-05-08 | 03:09:48   | CAN     | 192.168.33.70
  |       0 |
|       185 | jsoto    | 2022-05-10 | 13:34:58   | USA     | 192.168.151.91
  |       0 |
|       186 | bisles   | 2022-05-09 | 04:29:17   | USA     | 192.168.40.72
  |       0 |
|       188 | jsoto    | 2022-05-11 | 00:39:09   | USA     | 192.168.21.88
  |       0 |
|       189 | nmason   | 2022-05-08 | 05:37:24   | CANADA  | 192.168.168.11
7 |       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      | 192.168.125.24
0 |       0 |
|       194 | jclark   | 2022-05-12 | 14:11:04   | CAN     | 192.168.197.24
7 |       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 |
+-----------+----------+------------+------------+---------+---------------
--+----------+
144 rows in set (0.001 sec)

MariaDB [organization]>
```

This helps ensure that we are only reviewing login attempts that originated outside of Mexico, which is important for narrowing down the source of the suspicious activity.

Retrieve employees in Marketing

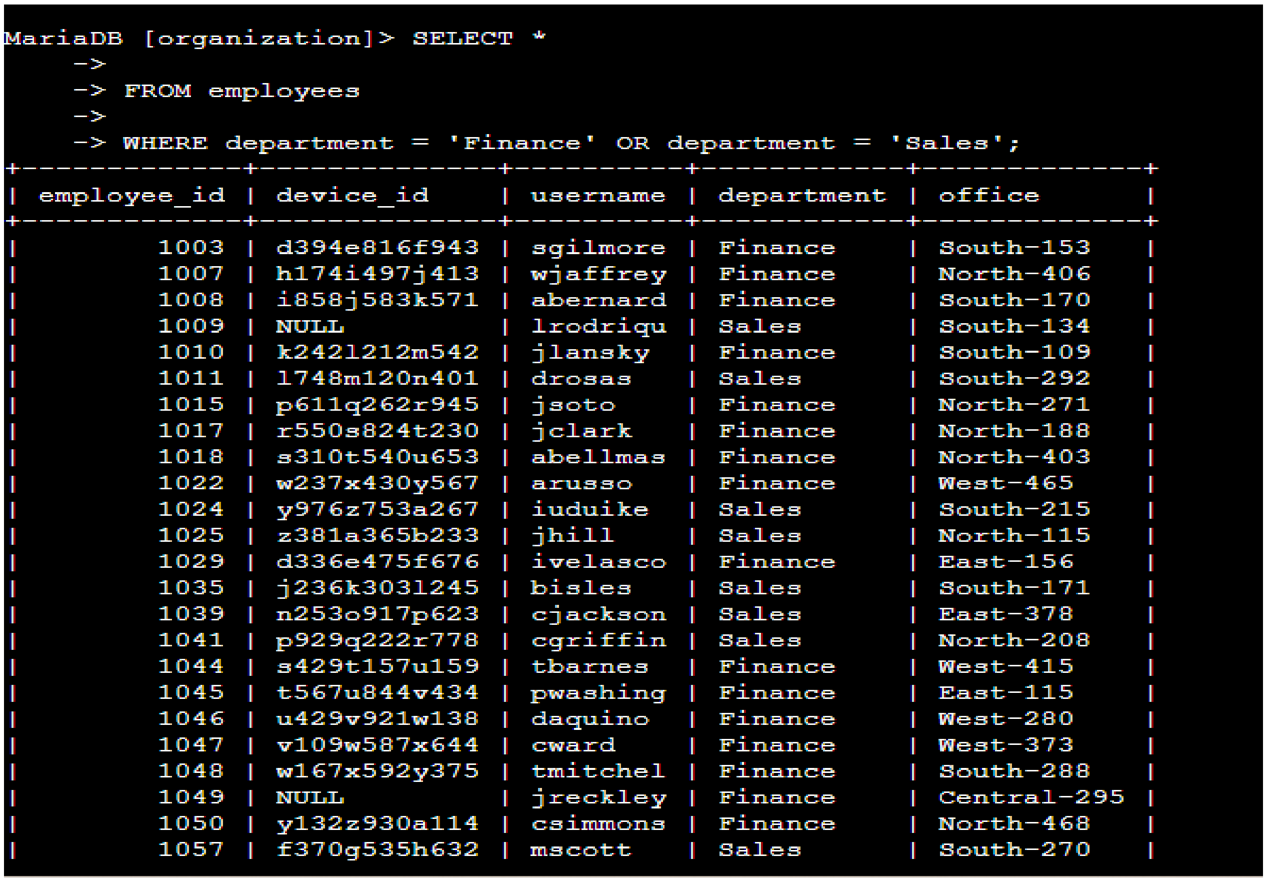
To help with upcoming security updates, I created an SQL query that identifies all employees in the **Marketing department** who work in the **East building**. I filtered for values in the `department` column that contains the word "Marketing" and for values in the `office` column that include "East".


```
MariaDB [organization]> SELECT *
    ->
    -> FROM employees
    ->
    -> WHERE department = 'Marketing' AND office LIKE 'East%';
+-------------+---------------+----------+-------------+-----------+
| 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 (0.001 sec)

MariaDB [organization]>
```

This query selects all records from the `employees` table where the `department` contains the word “Marketing” (even if it's part of a longer value like "Digital Marketing") **and** the `office` starts with "East" (e.g., East-170, East-320). The `LIKE` keyword with `%` helps capture all relevant variations in both columns. This ensures we only retrieve employees in Marketing who are in any office within the East building.

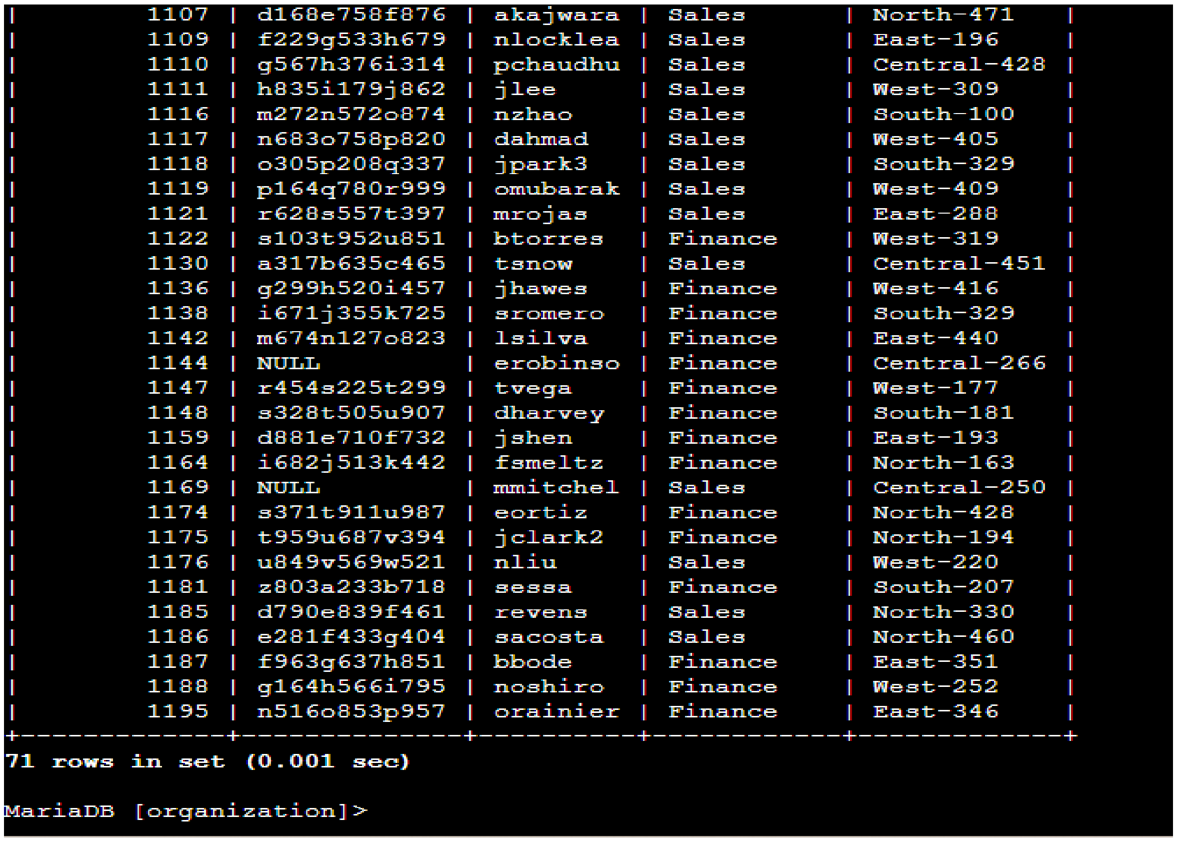
Retrieving employees in Finance or Sales

To assist with security updates for the **Sales** and **Finance** departments, I created an SQL query that retrieves all employees whose department includes either “Sales” or “Finance.” I used the `LIKE` keyword with the `%` wildcard to ensure the filter captures all possible variations (e.g., “Regional Sales” or “Corporate Finance”) and combined the conditions using the `OR` operator.



```
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 | 1748m120n401  | drosas   | Sales      | South-292   |
|        1015 | p611q262r945  | jsoto    | Finance    | North-271   |
|        1017 | r550s824t230  | jclark   | Finance    | North-188   |
|        1018 | s310t540u653  | abellmas | Finance    | North-403   |
|        1022 | w237x430y567  | arusso   | Finance    | West-465    |
|        1024 | y976z753a267  | iuduike  | Sales      | South-215   |
|        1025 | z381a365b233  | jhill    | Sales      | North-115   |
|        1029 | d336e475f676  | ivelasco | Finance    | East-156    |
|        1035 | j236k3031245  | bisles   | Sales      | South-171   |
|        1039 | n253o917p623  | cjackson | Sales      | East-378    |
|        1041 | p929q222r778  | cgriffin | Sales      | North-208   |
|        1044 | s429t157u159  | tbarnes  | Finance    | West-415    |
|        1045 | t567u844v434  | pwashing | Finance    | East-115    |
|        1046 | u429v921w138  | daquino  | Finance    | West-280    |
|        1047 | v109w587x644  | cward    | Finance    | West-373    |
|        1048 | w167x592y375  | tmitchel | Finance    | South-288   |
|        1049 | NULL          | jreckley | Finance    | Central-295 |
|        1050 | y132z930a114  | csimmons | Finance    | North-468   |
|        1057 | f370g535h632  | mscott   | Sales      | South-270   |
```

This query selects all employee records from the `employees` table where the `department` column contains either “Sales” or “Finance.”

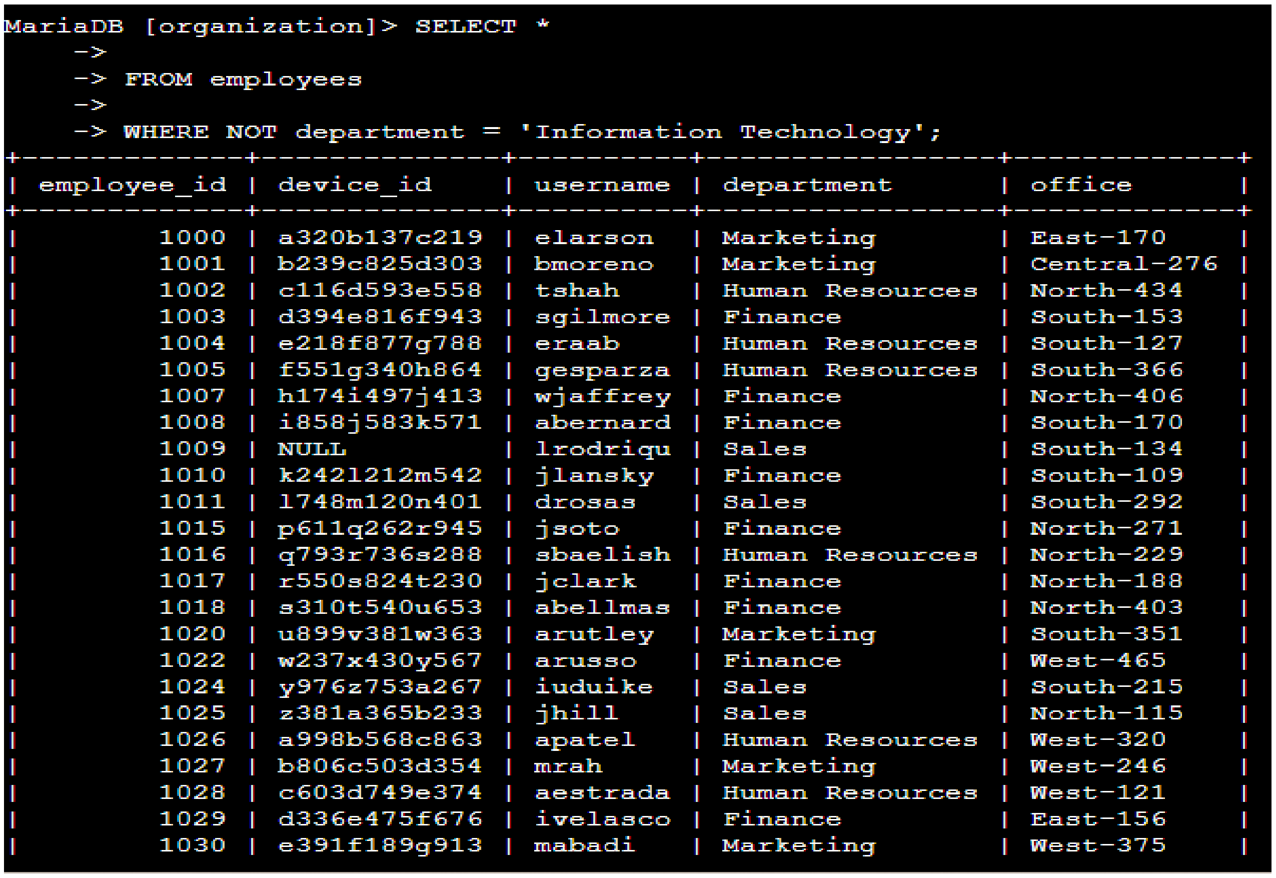


```
|         1107 | d168e758f876 | akajwara | Sales       | North-471    |
|         1109 | f229g533h679 | nlocklea | Sales       | East-196     |
|         1110 | g567h376i314 | pchaudhu | Sales       | Central-428  |
|         1111 | h835i179j862 | jlee     | Sales       | West-309     |
|         1116 | m272n572o874 | nzhao    | Sales       | South-100    |
|         1117 | n683o758p820 | dahmad   | Sales       | West-405     |
|         1118 | o305p208q337 | jpark3   | Sales       | South-329    |
|         1119 | p164q780r999 | omubarak | Sales       | West-409     |
|         1121 | r628s557t397 | mrojas   | Sales       | East-288     |
|         1122 | s103t952u851 | btorres  | Finance     | West-319     |
|         1130 | a317b635c465 | tsnow    | Sales       | Central-451  |
|         1136 | g299h520i457 | jhawes   | Finance     | West-416     |
|         1138 | i671j355k725 | sromero  | Finance     | South-329    |
|         1142 | m674n127o823 | lsilva   | Finance     | East-440     |
|         1144 | NULL         | erobinso | Finance     | Central-266  |
|         1147 | r454s225t299 | tvega    | Finance     | West-177     |
|         1148 | s328t505u907 | dharvey  | Finance     | South-181    |
|         1159 | d881e710f732 | jshen    | Finance     | East-193     |
|         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)

MariaDB [organization]>
```

The % wildcard ensures that any department name including those keywords is matched, regardless of what comes before or after. Using the OR operator ensures that employees from **either** department are included in the results.

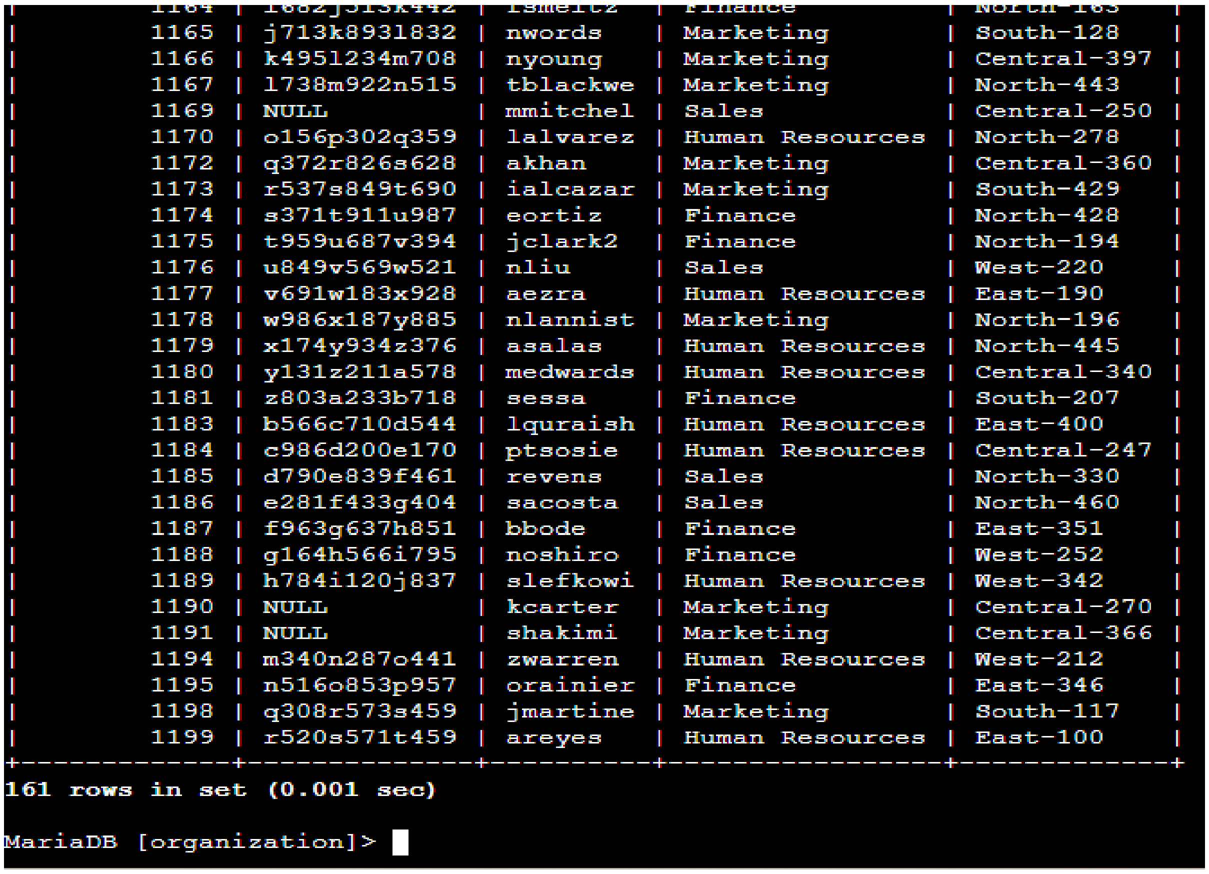
Retrieve all employees not in IT

To identify employees who still need a security update, I created an SQL query that retrieves all employees who are **not** in the **Information Technology** department. I used the `NOT LIKE` keyword along with the `%` wildcard to exclude any department values that include “Information Technology.”



```
MariaDB [organization]> SELECT *
    ->
    -> FROM employees
    ->
    -> WHERE NOT department = 'Information Technology';
+-------------+--------------+----------+-----------------+--------------+
| employee_id | device_id    | username | department      | office       |
+-------------+--------------+----------+-----------------+--------------+
|        1000 | a320b137c219 | elarson  | Marketing       | East-170     |
|        1001 | b239c825d303 | bmoreno  | Marketing       | Central-276  |
|        1002 | c116d593e558 | tshah    | Human Resources | North-434    |
|        1003 | d394e816f943 | sgilmore | Finance         | South-153    |
|        1004 | e218f877g788 | eraab    | Human Resources | South-127    |
|        1005 | f551g340h864 | gesparza | Human Resources | South-366    |
|        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 | 1748m120n401 | drosas   | Sales           | South-292    |
|        1015 | p611q262r945 | jsoto    | Finance         | North-271    |
|        1016 | q793r736s288 | sbaelish | Human Resources | North-229    |
|        1017 | r550s824t230 | jclark   | Finance         | North-188    |
|        1018 | s310t540u653 | abellmas | Finance         | North-403    |
|        1020 | u899v381w363 | arutley  | Marketing       | South-351    |
|        1022 | w237x430y567 | arusso   | Finance         | West-465     |
|        1024 | y976z753a267 | iuduike  | Sales           | South-215    |
|        1025 | z381a365b233 | jhill    | Sales           | North-115    |
|        1026 | a998b568c863 | apatel   | Human Resources | West-320     |
|        1027 | b806c503d354 | mrah     | Marketing       | West-246     |
|        1028 | c603d749e374 | aestrada | Human Resources | West-121     |
|        1029 | d336e475f676 | ivelasco | Finance         | East-156     |
|        1030 | e391f189g913 | mabadi   | Marketing       | West-375     |
```

This query selects all records from the `employees` table where the `department` column **does not contain** the phrase “Information Technology.”



```
|         1165 | j713k893l832 | nwords    | Marketing       | South-128    |
|         1166 | k495l234m708 | nyoung    | Marketing       | Central-397  |
|         1167 | l738m922n515 | tblackwe  | Marketing       | North-443    |
|         1169 | NULL         | mmitchel  | Sales           | Central-250  |
|         1170 | o156p302q359 | lalvarez  | Human Resources | North-278    |
|         1172 | q372r826s628 | akhan     | Marketing       | Central-360  |
|         1173 | r537s849t690 | ialcazar  | Marketing       | South-429    |
|         1174 | s371t911u987 | eortiz    | Finance         | North-428    |
|         1175 | t959u687v394 | jclark2   | Finance         | North-194    |
|         1176 | u849v569w521 | nliu      | Sales           | West-220     |
|         1177 | v691w183x928 | aezra     | Human Resources | East-190     |
|         1178 | w986x187y885 | nlannist  | Marketing       | North-196    |
|         1179 | x174y934z376 | asalas    | Human Resources | North-445    |
|         1180 | y131z211a578 | medwards  | Human Resources | Central-340  |
|         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 (0.001 sec)

MariaDB [organization]>
```

The % wildcard ensures that any variation containing those words is excluded. This allows us to accurately identify employees in all other departments who still need the update

Summary

Through this lab, I gained hands-on experience using SQL filters to extract relevant records based on specific criteria. This is a critical skill for real-world data analysis, especially in cybersecurity and IT operations where targeted actions must be performed on select user groups or systems.