SQL

Documentation about relearning some basic SQL, especially with filtering and some extra commands that just make analysing big data more easier. I have also started doing some exercises on SQL in hackerRank as well. I will include more docs as I start learning more complex queries

Step 3: Retrieve after hours failed login attempts

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.)

Describe your query and how it works in the Retrieve after hours failed login attempts section of the Apply filters to SQL queries template.

```
MariaDB [organization]> select login_time , success from log_in_attempts where login_time >
 '18:00' and success = 0 order by login_time DESC;
+------------+---------+
| login_time | success |
+------------+---------+
| 23:38:46   |       0 |
| 23:04:05   |       0 |
| 22:38:31   |       0 |
| 22:36:36   |       0 |
| 22:18:42   |       0 |
| 22:07:07   |       0 |
| 22:00:26   |       0 |
| 21:20:51   |       0 |
| 21:02:04   |       0 |
| 20:49:00   |       0 |
| 20:27:27   |       0 |
| 20:25:57   |       0 |
| 20:03:55   |       0 |
| 19:55:15   |       0 |
| 19:34:48   |       0 |
| 19:28:50   |       0 |
| 19:28:12   |       0 |
| 18:56:36   |       0 |
| 18:38:07   |       0 |
+------------+---------+
19 rows in set (0.000 sec)
```

Step 4: Retrieve login attempts on specific dates

A suspicious event occurred on 2022-05-09. To investigate this event, you want to review all login attempts which occurred on this day and the day before. Use filters in SQL to create a query that identifies all login attempts that occurred on 2022-05-09 or 2022-05-08. (The date of the login attempt is found in the **login_date** column.)

Describe your query and how it works in the Retrieve login attempts on specific dates section of the Apply filters to SQL queries template.

```
MariaDB [organization]> select login_date from log_in_attempts where login_date = "2022-05-09" or login_date = "2022-05-08" limit 5;
+------------+
| login_date |
+------------+
| 2022-05-09 |
| 2022-05-09 |
| 2022-05-08 |
| 2022-05-08 |
| 2022-05-08 |
+------------+
5 rows in set (0.001 sec)

MariaDB [organization]>
```

Step 5: Retrieve login attempts outside of Mexico

There's been suspicious activity with login attempts, but the team has determined that this activity didn't originate in Mexico. Now, you need to investigate login attempts that occurred outside of Mexico. Use filters in SQL to create a query that identifies all login attempts that occurred outside of Mexico. (When referring to Mexico, the **country** column contains values of both **MEX** and **MEXICO**, and you need to use the **LIKE** keyword with **%** to make sure your query reflects this.)

Describe your query and how it works in the Retrieve login attempts on specific dates section of the Apply filters to SQL queries template.

```
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     | 192.168.243.140 |       1 |
|        2 | apatel   | 2022-05-10 | 20:27:27   | CAN     | 192.168.205.12  |       0 |
|        3 | dkot     | 2022-05-09 | 06:47:41   | USA     | 192.168.151.162 |       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     | 192.168.170.243 |       1 |
|        8 | bisles   | 2022-05-08 | 01:30:17   | US      | 192.168.119.173 |       0 |
|       10 | jrafael  | 2022-05-12 | 09:33:19   | CANADA  | 192.168.228.221 |       0 |
|       11 | sgilmore | 2022-05-11 | 10:16:29   | CANADA  | 192.168.140.81  |       0 |
|       12 | dkot     | 2022-05-08 | 09:11:34   | USA     | 192.168.100.158 |       1 |
|       13 | mrah     | 2022-05-11 | 09:29:34   | USA     | 192.168.246.135 |       1 |
|       14 | sbaelish | 2022-05-10 | 10:20:18   | US      | 192.168.16.99   |       1 |
|       15 | lyamamot | 2022-05-09 | 17:17:26   | USA     | 192.168.183.51  |       0 |
|       16 | mcouliba | 2022-05-11 | 06:44:22   | CAN     | 192.168.172.189 |       1 |
|       17 | pwashing | 2022-05-11 | 02:33:02   | USA     | 192.168.81.89   |       1 |
|       18 | pwashing | 2022-05-11 | 19:28:50   | US      | 192.168.66.142  |       0 |
|       19 | jhill    | 2022-05-12 | 13:09:04   | US      | 192.168.142.245 |       1 |
|       21 | iuduike  | 2022-05-11 | 17:50:00   | US      | 192.168.131.147 |       1 |
|       25 | sbaelish | 2022-05-09 | 07:04:02   | US      | 192.168.33.137  |       1 |
|       26 | apatel   | 2022-05-08 | 17:27:00   | CANADA  | 192.168.123.105 |       1 |
|       29 | bisles   | 2022-05-11 | 01:21:22   | US      | 192.168.85.186  |       0 |
|       31 | acook    | 2022-05-12 | 17:36:45   | CANADA  | 192.168.58.232  |       0 |
|       32 | acook    | 2022-05-09 | 02:52:02   | CANADA  | 192.168.142.239 |       0 |
|       33 | zbernal  | 2022-05-11 | 02:52:10   | US      | 192.168.72.59   |       1 |
|       34 | drosas   | 2022-05-11 | 21:02:04   | US      | 192.168.45.93   |       0 |
|       36 | asundara | 2022-05-08 | 09:00:42   | US      | 192.168.78.151  |       1 |
|       37 | eraab    | 2022-05-10 | 06:03:41   | CANADA  | 192.168.152.148 |       0 |
|       38 | sbaelish | 2022-05-09 | 14:40:01   | USA     | 192.168.60.42   |       1 |
|       41 | apatel   | 2022-05-10 | 17:39:42   | CANADA  | 192.168.46.207  |       0 |
|       42 | cgriffin | 2022-05-09 | 23:04:05   | US      | 192.168.4.157   |       0 |
|       43 | mcouliba | 2022-05-08 | 02:35:34   | CANADA  | 192.168.16.208  |       0 |
|       44 | daquino  | 2022-05-08 | 07:02:35   | CANADA  | 192.168.168.144 |       0 |
|       45 | dtanaka  | 2022-05-11 | 10:28:54   | US      | 192.168.223.157 |       1 |
|       46 | eraab    | 2022-05-11 | 11:29:27   | CAN     | 192.168.24.12   |       0 |
|       47 | dkot     | 2022-05-08 | 05:06:45   | US      | 192.168.233.24  |       1 |
|       48 | asundara | 2022-05-11 | 03:18:45   | USA     | 192.168.72.10   |       1 |
|       49 | asundara | 2022-05-08 | 14:00:01   | US      | 192.168.173.213 |       0 |
```

Step 6: Retrieve employees in Marketing

Your team wants to perform security updates on specific employee machines in the Marketing department. You're responsible for getting information on these employee machines and will need to query the **employees** table. Use filters in SQL to create a query that identifies all employees in the Marketing department for all offices in the East building.

(The department of the employee is found in the **department** column, which contains values that include **Marketing**. The office is found in the office column. Some examples of values in this column are **East-170**, **East-320**, and **North-434**. You'll need to use the **LIKE** keyword with **%** to filter for the East building.)

Describe your query and how it works in the Retrieve employees in Marketing section of the Apply filters to SQL queries template.

```
MariaDB [organization]> select username, department, office from employees where department
 = "Marketing" and office like "East%";
+----------+------------+----------+
| username | department | office   |
+----------+------------+----------+
| elarson  | Marketing  | East-170 |
| jdarosa  | Marketing  | East-195 |
| fbautist | Marketing  | East-267 |
| rgosh    | Marketing  | East-157 |
| randerss | Marketing  | East-460 |
| dellery  | Marketing  | East-417 |
| cwilliam | Marketing  | East-216 |
+----------+------------+----------+
7 rows in set (0.001 sec)

MariaDB [organization]>
```

Step 7: Retrieve employees in Finance or Sales

Your team now needs to perform a different security update on machines for employees in the Sales and Finance departments. Use filters in SQL to create a query that identifies all employees in the Sales or Finance departments. (The department of the employee is found in the **department** column, which contains values that include **Sales** and **Finance**.)

Describe your query and how it works in the Retrieve employees in Finance or Sales section of the Apply filters to SQL queries template.

```
MariaDB [organization]> select username, department from employees where department = 'Sale
s' or department = 'Finance';
+----------+------------+
| username | department |
+----------+------------+
| sgilmore | Finance    |
| wjaffrey | Finance    |
| abernard | Finance    |
| lrodriqu | Sales      |
| jlansky  | Finance    |
| drosas   | Sales      |
| jsoto    | Finance    |
| jclark   | Finance    |
| abellmas | Finance    |
| arusso   | Finance    |
| iuduike  | Sales      |
| jhill    | Sales      |
| ivelasco | Finance    |
| bisles   | Sales      |
| cjackson | Sales      |
| cgriffin | Sales      |
| tbarnes  | Finance    |
| pwashing | Finance    |
| daquino  | Finance    |
| cward    | Finance    |
| tmitchel | Finance    |
| jreckley | Finance    |
| csimmons | Finance    |
| mscott   | Sales      |
| redwards | Finance    |
| lpope    | Sales      |
| ttyrell  | Sales      |
| jpark    | Finance    |
| zdutchma | Sales      |
| esmith   | Sales      |
| fgarcia  | Finance    |
```

Step 8: Retrieve all employees not in IT

Your team needs to make one more update to employee machines. The employees who are in the Information Technology department already had this update, but employees in all other departments need it. Use filters in SQL to create a query which identifies all employees not in the IT department. (The department of the employee is found in the **department** column, which contains values that include **Information Technology**.)

Describe your query and how it works in the Retrieve all employees not in IT section of the Apply filters to SQL queries template.

```
MariaDB [organization]> select * from employees where not department = "Information Technol
ogy";
+-------------+--------------+----------+-----------------+-------------+
| 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 | l748m120n401 | 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    |
```