Apply filters to SQL queries

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Project description

In this project, I will employ SQL to investigate and analyze security-related events within my organization's database, particularly focusing on login attempts and employee machine activities. By constructing targeted SQL queries, I will filter and retrieve pertinent records from the 'employees' and 'log_in_attempts' tables. My goal is to identify patterns or anomalies that indicate potential security breaches or vulnerabilities.This analysis is essential for upholding our security protocols, quickly resolving any issues, and strengthening a system's protection.

Retrieve after hours failed login attempts

```
MariaDB [organization]> SELECT*
    -> FROM log_in_attempts
    -> Where login_time > '18:00';
```

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
23	yappiah	2022-05-10	18:11:53	MEXICO	192.168.200.48	1
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
51	jrafael	2022-05-10	22:40:01	CANADA	192.168.148.115	1
52	cjackson	2022-05-10	22:07:07	CAN	192.168.58.57	0
54	jreckley	2022-05-10	19:31:19	MEXICO	192.168.167.152	1
57	asundara	2022-05-12	21:13:02	US	192.168.211.201	1
60	acook	2022-05-11	21:46:00	CAN	192.168.54.45	1
64	apatel	2022-05-10	22:00:09	CANADA	192.168.172.71	1
65	aalonso	2022-05-09	23:42:12	MEX	192.168.52.37	1
66	aestrada	2022-05-08	21:58:32	MEX	192.168.67.223	1
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
105	cjackson	2022-05-12	19:36:42	CAN	192.168.247.153	1
107	bisles	2022-05-12	20:25:57	USA	192.168.116.187	0
108	daquino	2022-05-09	21:30:48	CANADA	192.168.15.110	1
111	aestrada	2022-05-10	22:00:26	MEXICO	192.168.76.27	0
115	ivelasco	2022-05-10	23:06:01	CAN	192.168.154.1	1
116	tmitchel	2022-05-10	20:33:27	MEXICO	192.168.119.26	1
118	smartell	2022-05-12	23:21:31	MEXICO	192.168.173.196	1
119	tmitchel	2022-05-11	23:07:13	MEXICO	192.168.110.175	1
121	btang	2022-05-10	22:00:36	US	192.168.80.143	1
126	jrafael	2022-05-12	18:47:52	CAN	192.168.22.16	1
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
132	rjensen	2022-05-12	23:26:03	MEX	192.168.9.166	1
155	cgriffin	2022-05-12	22:18:42	USA	192.168.236.176	0
158	smartell	2022-05-09	19:30:32	MEXICO	192.168.190.178	1
160	jclark	2022-05-10	20:49:00	CANADA	192.168.214.49	0
164	jclark	2022-05-12	21:15:52	CAN	192.168.18.34	1
173	asundara	2022-05-12	23:17:52	US	192.168.58.217	1
199	yappiah	2022-05-11	19:34:48	MEXICO	192.168.44.232	0

39 rows in set (0.001 sec)

```
MariaDB [organization]> SELECT*
    -> FROM log_in_attempts
    ->  Where login_time > '18:00' AND success = 0;
```

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

The screenshot captures two SQL queries I ran on our MariaDB database to scrutinize login attempts made after 6:00 PM. I needed to sift through the 'log_in_attempts' table to spot any unusual or unauthorized login attempts that could indicate a security threat.

For the initial query, I pulled all records of login attempts made post-6:00 PM using
SELECT *
FROM log_in_attempts
WHERE login_time > '18:00';

This gave me a comprehensive view of all evening login activities, including successful and unsuccessful attempts, along with pertinent information like usernames, IP addresses, and whether the login was successful.

I refined my search with a second query:
SELECT *
FROM log_in_attempts
WHERE login_time > '18:00' AND success = 0;

This time, I focused solely on the failed login attempts during the same time frame. The result, 19 rows of data, highlights the failed attempts, which now warrants a closer look to identify any patterns or anomalies such as multiple failed attempts from a single IP address or consistent failures against specific user accounts, which could potentially flag a security issue like a brute force attack.

Retrieve login attempts on specific dates

```
MariaDB [organization]> select*
    -> from log_in_attempts
    -> WHERE login_date = '2022-05-09' or '2022-05-08';
```

event_id	username	login_date	login_time	country	ip_address	success
1	jrafael	2022-05-09	04:56:27	CAN	192.168.243.140	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
6	arutley	2022-05-12	17:00:59	MEXICO	192.168.3.24	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
9	yappiah	2022-05-11	13:47:29	MEX	192.168.59.136	1
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
20	tshah	2022-05-12	18:56:36	MEXICO	192.168.109.50	0
21	iuduike	2022-05-11	17:50:00	US	192.168.131.147	1
22	rjensen	2022-05-11	00:59:26	MEX	192.168.213.128	0
23	yappiah	2022-05-10	18:11:53	MEXICO	192.168.200.48	1
24	arusso	2022-05-09	06:49:39	MEXICO	192.168.171.192	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
27	aalonso	2022-05-10	01:55:35	MEX	192.168.103.210	0
28	aestrada	2022-05-09	19:28:12	MEXICO	192.168.27.57	0
29	bisles	2022-05-11	01:21:22	US	192.168.85.186	0
30	yappiah	2022-05-09	03:22:22	MEX	192.168.124.48	1
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
35	tshah	2022-05-10	15:26:08	MEX	192.168.92.147	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
39	yappiah	2022-05-09	07:56:40	MEXICO	192.168.57.115	1
40	aalonso	2022-05-12	15:15:46	MEX	192.168.174.186	0
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
50	jclark	2022-05-10	10:48:02	CANADA	192.168.174.117	0
51	jrafael	2022-05-10	22:40:01	CANADA	192.168.148.115	1
52	cjackson	2022-05-10	22:07:07	CAN	192.168.58.57	0
53	nmason	2022-05-08	11:51:38	CAN	192.168.133.188	1
54	jreckley	2022-05-10	19:31:19	MEXICO	192.168.167.152	1
55	jlansky	2022-05-11	05:15:34	US	192.168.6.170	0
56	acook	2022-05-08	04:56:30	CAN	192.168.209.130	1
57	asundara	2022-05-12	21:13:02	US	192.168.211.201	1
58	ivelasco	2022-05-09	17:20:54	CAN	192.168.57.162	0
59	rjensen	2022-05-12	04:52:08	MEX	192.168.54.140	0
60	acook	2022-05-11	21:46:00	CAN	192.168.54.45	1

Performed a SQL query to pull records from the 'log_in_attempts' table for a targeted review of login activities on specific days. The query I used was:

```
SELECT *
FROM log_in_attempts
WHERE login_date = '2022-05-09' OR login_date = '2022-05-08';
```

This query selects all columns (*) from the log_in_attempts table where the login_date column matches either May 9th, 2022, or May 8th, 2022. The use of OR in the WHERE clause allows the query to return results for either of the two dates specified, effectively widening the search to cover a two-day period.

The output from this query provides a comprehensive list of all login attempts made on those two specific dates, along with associated details such as event_id, username, login_date, login_time, country, ip_address, and a success flag indicating whether the login attempt was successful (1) or not (0).

This command is utilized to focus the investigation on login activity within a defined timeframe, which can be crucial for identifying patterns related to security breaches or pinpointing the timeframe of suspicious activities.

Retrieve login attempts outside of Mexico

```
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
50	jclark	2022-05-10	10:48:02	CANADA	192.168.174.117	0
51	jrafael	2022-05-10	22:40:01	CANADA	192.168.148.115	1
52	cjackson	2022-05-10	22:07:07	CAN	192.168.58.57	0
53	nmason	2022-05-08	11:51:38	CAN	192.168.133.188	1
55	jlansky	2022-05-11	05:15:34	US	192.168.6.170	0
56	acook	2022-05-08	04:56:30	CAN	192.168.209.130	1
57	asundara	2022-05-12	21:13:02	US	192.168.211.201	1
58	ivelasco	2022-05-09	17:20:54	CAN	192.168.57.162	0
60	acook	2022-05-11	21:46:00	CAN	192.168.54.45	1
61	dtanaka	2022-05-09	09:45:18	USA	192.168.98.221	1
64	apatel	2022-05-10	22:00:09	CANADA	192.168.172.71	1
68	mrah	2022-05-08	17:16:13	US	192.168.42.248	1
69	wjaffrey	2022-05-11	19:55:15	USA	192.168.100.17	0
71	mcouliba	2022-05-09	06:57:42	CAN	192.168.55.169	0
72	alevitsk	2022-05-08	12:09:10	CANADA	192.168.139.176	1
73	zbernal	2022-05-10	17:46:45	USA	192.168.80.46	0
74	nmason	2022-05-11	15:55:48	CAN	192.168.162.2	1
75	zbernal	2022-05-12	04:14:35	US	192.168.188.63	1
76	bmoreno	2022-05-10	10:53:55	CAN	192.168.61.200	0
77	wjaffrey	2022-05-12	08:37:59	US	192.168.106.183	1
80	cjackson	2022-05-08	02:18:10	CANADA	192.168.33.140	1
83	lrodriqu	2022-05-08	08:10:23	USA	192.168.67.69	1

I executed an SQL command to filter out login records from the log_in_attempts table that did not originate from Mexico.

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

With this query, I've pulled all relevant data from the table but excluded any entries where the 'country' field begins with 'MEX', effectively narrowing down the data to only include login attempts from outside Mexico. his ensures that the query results will only include login attempts that have occurred in countries other than Mexico, allowing me to focus on analyzing the suspicious activities originating from other regions

Retrieve employees in Marketing

```
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 (0.022 sec)
```

Conducting a query on employee machines specifically in the Marketing department located in the East building, I crafted an SQL query to fetch the necessary information from our 'employees' table. My query was as follows:

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

This query retrieves all records from the 'employees' table where the 'department' is exactly 'Marketing'. Additionally, it filters these results to include only those whose 'office' designation begins with 'East', which is indicated by the 'LIKE' keyword followed by 'East%'.

Running this query, I successfully obtained a complete list of Marketing department employees located in the East building. The resulting data, which includes employee IDs, device IDs, usernames, and specific office codes.A search such as this can be useful in many scenarios, one being the next step of a security update process, ensuring a team to precisely target the machines that require updates.

Retrieve employees in Finance or Sales

```
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   |
|        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   |
|        1062 | k3671639m697 | redwards | Finance    | North-180   |
|        1063 | l686m140n569 | lpope    | Sales      | East-226    |
|        1066 | o678p794q957 | ttyrell  | Sales      | Central-444 |
|        1069 | NULL         | jpark    | Finance    | East-110    |
|        1071 | t244u829v723 | zdutchma | Sales      | West-348    |
|        1072 | u905v920w694 | esmith   | Sales      | East-421    |
|        1076 | y347z204a710 | fgarcia  | Finance    | Central-270 |
|        1078 | a667b270c984 | sharley  | Sales      | North-418   |
|        1081 | d647e310f618 | qcorbit  | Finance    | South-290   |
|        1083 | f840g812h544 | gkoshi   | Finance    | West-165    |
|        1085 | h339i498j269 | cperez   | Sales      | East-325    |
|        1086 | i281j129k749 | lmajumda | Sales      | West-499    |
|        1089 | l358m929n154 | jpark2   | Sales      | West-251    |
|        1091 | n378o313p469 | rtran    | Sales      | Central-230 |
|        1092 | o391p779q935 | lpark    | Sales      | West-227    |
|        1098 | u671v146w618 | tarchamb | Sales      | North-423   |
|        1099 | v283w690x104 | anaser   | Finance    | West-357    |
|        1105 | b551c837d758 | kmei     | Finance    | Central-232 |
|        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   |
```

To carry out necessary security updates for our team's machines in both the Sales and Finance departments, I created and ran an SQL query against our 'employees' table. The query I used was:

```
SELECT *
FROM employees
WHERE department = 'Finance' OR department = 'Sales';
```

This command allowed me to obtain a complete list of employees who belong to either the Finance or Sales departments. I used the OR condition in the WHERE clause to ensure that my result set included employees from both departments, not just one. The output from the query provided me with the employee IDs, device IDs, usernames, departments, and office locations for these individuals. With this data at hand. We can use this data to proceed with the security updates, specifically targeting the machines used by the employees in these departments to enhance our cybersecurity defenses efficiently.

Retrieve all employees not in IT

```
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 | 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   |
```

To perform the necessary security updates for employee machines outside the Information Technology department, I constructed an SQL query to identify all relevant employees. The query I used was:

```
SELECT *
FROM employees
WHERE NOT department = 'Information Technology';
```

With this command, I extracted a complete dataset from the employees table that excluded anyone within the IT department. The key part of this query was the NOT operator, which ensured that my results only included departments other than IT. Reason being is the IT department had already received the security update, and now needed to extend this update to the rest of the company.

The output from the query provided a clear list of employee IDs, device IDs, usernames, departments, and office locations, enabling me to systematically target the remaining departments for the security update. This step is vital to maintain a high level of cybersecurity across the entire organization, ensuring every department, other than IT, gets the latest security enhancements on their machines.

Summary

Throughout this project, I successfully used SQL queries to filter for login attempts after business hours and exclude those originating from Mexico, based on the team's security focus. Additionally, I identified employees outside the IT department who needed security updates, ensuring comprehensive coverage. These tasks demonstrated my ability to apply SQL filters effectively, showcasing attention to detail and commitment to maintaining security protocols within the organization.