

# Apply filters to SQL queries

## Project description

The purpose of this project is to have an understanding of how to apply filters to SQL queries so you are able to identify certain criteria for queries that need attention. This project is querying login attempts for certain criteria. You will gain the ability to get specific information about the machine, employees and departments they are in.

## Retrieve after hours failed login attempts

It was recently discovered that a security incident occurred after business hours. I needed to query the `log_in_attempts` table and review after hours login activity. I had to use certain SQL filters to create a query that identifies all failed login attempts that occurred after 18:00 (or 6p.m). The login time column would be in the middle column and the success column would be on the far right. It would contain a value of 0 when a login attempt failed.

1. To start, for the whole project, the first identify what you are trying to select, in this case, you would type `select *`, the asterisks are choosing all in the table.
2. Next, you would type `from` and the table you want to query, which would be the `log_in_attempts` table.
3. Then, you would type `where` and the operator to query, which would be `login_time > '18:00'`; because `login_time` is the operator, the `>` is the greater sign meaning after 1800, or 6pm.
4. After, you would type `AND` as you are also trying to query unsuccessful attempts followed by `success = '0' or 'false';`. The semicolon signifies that you are done with the filtering for your query and should produce the results.

\*Note: the operator names come from the table so if you do not know what operator names to use, just list the table. To do this, type `select *` for all, enter. Then type, `from log_in_attempts;` (semicolon means done filtering) and hit enter to give results.

- At the bottom of the result list, it is identified that there were 19 unsuccessful attempts after 18:00.

```
clear
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 statement.

MariaDB [organization]> clear
MariaDB [organization]> select *
-> from log_in_attempts
-> where login_name > '18:00' and success = 'false';
ERROR 1054 (42S22): Unknown column 'login_name' in 'where clause'
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 | cggriffin | 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 | cggriffin | 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 (0.122 sec)

MariaDB [organization]> []
```

## Retrieve login attempts on specific dates

First, follow the first 2 steps above.

- Then, you will type where login\_date = '2022-05-09' or login\_date = '2022-05-08';.

Login\_date is the operator name the equal sign signifies that you are searching for an exact date. The "or" represents selecting another date also, which would be login\_date = '2022-05-08'. The semicolon signifies you are done filtering and ready for results. If your value

for the operator name is just numbers, you don't have to use quotations. If it has letters and special characters, you must use quotations.

```
19 rows in set (0.122 sec)

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 | 192.168.243.140 | 1 |
| 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 |
| 8 | bisles | 2022-05-08 | 01:30:17 | US | 192.168.119.173 | 0 |
| 12 | dkot | 2022-05-08 | 09:11:34 | USA | 192.168.100.158 | 1 |
| 15 | lyamamot | 2022-05-09 | 17:17:26 | USA | 192.168.183.51 | 0 |
| 24 | arusso | 2022-05-09 | 06:49:39 | MEXICO | 192.168.171.192 | 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 |
| 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 | 1 |
| 32 | acook | 2022-05-09 | 02:52:02 | CANADA | 192.168.142.239 | 0 |
| 36 | asundara | 2022-05-08 | 09:00:42 | US | 192.168.78.151 | 1 |
| 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 |
| 42 | cggriffin | 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 |
| 47 | dkot | 2022-05-08 | 05:06:45 | US | 192.168.233.24 | 1 |
| 49 | asundara | 2022-05-08 | 14:00:01 | US | 192.168.173.213 | 0 |
| 53 | nmason | 2022-05-08 | 11:51:38 | CAN | 192.168.133.188 | 1 |
| 56 | acook | 2022-05-08 | 04:56:30 | CAN | 192.168.209.130 | 1 |
| 58 | ivelasco | 2022-05-09 | 17:20:54 | CAN | 192.168.57.162 | 0 |
| 61 | dtanaka | 2022-05-09 | 09:45:18 | USA | 192.168.98.221 | 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 |
| 67 | abernard | 2022-05-09 | 11:53:41 | MEX | 192.168.118.29 | 1 |
| 68 | mrah | 2022-05-08 | 17:16:13 | US | 192.168.42.248 | 1 |
| 70 | tmitchel | 2022-05-09 | 10:55:17 | MEXICO | 192.168.87.199 | 1 |
| 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 |
| 79 | abernard | 2022-05-09 | 11:41:15 | MEX | 192.168.158.170 | 0 |
| 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 |
| 87 | apatel | 2022-05-08 | 22:38:31 | CANADA | 192.168.132.153 | 0 |
| 90 | gesparza | 2022-05-09 | 00:49:05 | CANADA | 192.168.87.201 | 0 |
| 92 | pwashing | 2022-05-08 | 00:36:12 | US | 192.168.247.219 | 0 |
| 96 | ivelasco | 2022-05-09 | 22:36:36 | CAN | 192.168.84.194 | 0 |
| 97 | jreckley | 2022-05-09 | 02:49:23 | MEXICO | 192.168.32.231 | 1 |
| 101 | sbaelish | 2022-05-08 | 12:01:22 | US | 192.168.145.158 | 0 |
```

```

101 | sbaelish | 2022-05-08 | 12:01:22 | US | 192.168.145.158 | 0 |
102 | jreckley | 2022-05-09 | 16:51:44 | MEX | 192.168.108.13 | 1 |
108 | daquino | 2022-05-09 | 21:30:48 | CANADA | 192.168.15.110 | 1 |
110 | mabadi | 2022-05-09 | 00:01:54 | USA | 192.168.90.124 | 1 |
112 | rjensen | 2022-05-09 | 09:22:05 | MEX | 192.168.69.116 | 1 |
117 | bsand | 2022-05-08 | 00:19:11 | USA | 192.168.197.187 | 0 |
120 | tmitchel | 2022-05-09 | 02:58:17 | MEXICO | 192.168.134.62 | 0 |
127 | abellmas | 2022-05-09 | 21:20:51 | CANADA | 192.168.70.122 | 0 |
128 | jclark | 2022-05-09 | 10:45:59 | CANADA | 192.168.122.169 | 0 |
131 | bisles | 2022-05-09 | 20:03:55 | US | 192.168.113.171 | 0 |
134 | iuduike | 2022-05-09 | 06:46:40 | USA | 192.168.22.115 | 1 |
135 | bsand | 2022-05-09 | 14:06:33 | US | 192.168.91.238 | 0 |
144 | daquino | 2022-05-09 | 11:09:32 | CANADA | 192.168.139.9 | 0 |
145 | ivelasco | 2022-05-08 | 09:06:02 | CANADA | 192.168.39.196 | 1 |
147 | yappiah | 2022-05-08 | 06:04:34 | MEX | 192.168.65.245 | 0 |
148 | daquino | 2022-05-08 | 06:15:55 | CANADA | 192.168.135.6 | 1 |
150 | nmason | 2022-05-08 | 14:40:02 | CAN | 192.168.204.124 | 0 |
151 | mabadi | 2022-05-09 | 16:29:46 | USA | 192.168.30.225 | 1 |
158 | smartell | 2022-05-09 | 19:30:32 | MEXICO | 192.168.190.178 | 1 |
161 | abellmas | 2022-05-09 | 13:25:50 | CAN | 192.168.180.205 | 0 |
162 | yappiah | 2022-05-09 | 04:51:22 | MEXICO | 192.168.162.100 | 0 |
163 | tmitchel | 2022-05-08 | 09:21:16 | MEX | 192.168.119.29 | 0 |
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 | 192.168.210.228 | 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 | 192.168.168.117 | 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 (0.007 sec)

MariaDB [organization]> 

```

4. These results show 75 entries of login attempts between 2 days.

## Retrieve login attempts outside of Mexico

Follow the first 2 steps above.

3. Then, you will type where NOT country LIKE 'mex%';. To break this down, you will use the word NOT because you are trying to retrieve attempts outside of Mexico, so NOT is excluding them. After country, you type LIKE because you are identifying that there may be multiple ways to give results of mexico. Then type mex% in quotes because it will filter all words with "mex" in it. Semicolon signifies that you are done filtering and ready for results.

```

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	sgillmore	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	rmason	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

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	rmason	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
84	jrafael	2022-05-11	09:26:17	CAN	192.168.243.203	1
86	dtanaka	2022-05-10	10:22:20	USA	192.168.197.135	1
87	apatel	2022-05-08	22:38:31	CANADA	192.168.132.153	0
89	dkot	2022-05-12	10:52:00	USA	192.168.128.75	1
90	gesparza	2022-05-09	00:49:05	CANADA	192.168.87.201	0
91	jhill	2022-05-11	17:46:47	US	192.168.172.74	1
92	pwashing	2022-05-08	00:36:12	US	192.168.247.219	0
96	ivelasco	2022-05-09	22:36:36	CAN	192.168.84.194	0
98	gesparza	2022-05-11	06:30:14	CANADA	192.168.148.80	0
99	mcouliba	2022-05-12	11:54:14	CANADA	192.168.218.160	1
101	sbaelish	2022-05-08	12:01:22	US	192.168.145.158	0
103	jhill	2022-05-11	09:10:54	US	192.168.60.153	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
109	mcouliba	2022-05-10	04:43:15	CANADA	192.168.39.246	1
110	mabadi	2022-05-09	00:01:54	USA	192.168.90.124	1
113	gesparza	2022-05-10	00:40:00	CAN	192.168.64.133	0
115	ivelasco	2022-05-10	23:06:01	CAN	192.168.154.1	1
117	bsand	2022-05-08	00:19:11	USA	192.168.197.187	0
121	btang	2022-05-10	22:00:36	US	192.168.80.143	1
123	bmoreno	2022-05-10	04:43:30	CANADA	192.168.98.2	1
124	asundara	2022-05-12	10:51:21	USA	192.168.136.29	1
125	bisles	2022-05-11	08:36:19	US	192.168.74.9	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
128	jclark	2022-05-09	10:45:59	CANADA	192.168.122.169	0
129	drosas	2022-05-12	15:39:40	USA	192.168.152.200	0
130	mrah	2022-05-11	02:54:21	USA	192.168.102.147	0

```
130 | mrah | 2022-05-11 | 02:54:21 | USA | 192.168.102.147 | 0 |
131 | bisles | 2022-05-09 | 20:03:55 | US | 192.168.113.171 | 0 |
133 | asundara | 2022-05-12 | 05:57:04 | USA | 192.168.6.9 | 1 |
134 | iuduike | 2022-05-09 | 06:46:40 | USA | 192.168.22.115 | 1 |
135 | bsand | 2022-05-09 | 14:06:33 | US | 192.168.91.238 | 0 |
136 | mabadi | 2022-05-10 | 06:56:44 | US | 192.168.214.234 | 1 |
137 | jrafael | 2022-05-12 | 02:42:37 | CAN | 192.168.186.176 | 1 |
139 | apatel | 2022-05-11 | 01:54:36 | CAN | 192.168.95.222 | 0 |
140 | btang | 2022-05-10 | 13:17:29 | US | 192.168.249.111 | 0 |
141 | btang | 2022-05-12 | 10:12:03 | USA | 192.168.82.139 | 0 |
142 | gesparza | 2022-05-11 | 06:31:14 | CANADA | 192.168.117.56 | 1 |
143 | jhill | 2022-05-11 | 00:30:22 | USA | 192.168.189.19 | 0 |
144 | daquino | 2022-05-09 | 11:09:32 | CANADA | 192.168.139.9 | 0 |
145 | ivelasco | 2022-05-08 | 09:06:02 | CANADA | 192.168.39.196 | 1 |
146 | rmason | 2022-05-10 | 02:25:55 | CANADA | 192.168.37.147 | 0 |
148 | daquino | 2022-05-08 | 06:15:55 | CANADA | 192.168.135.6 | 1 |
149 | jlansky | 2022-05-11 | 01:07:11 | USA | 192.168.238.42 | 0 |
150 | rmason | 2022-05-08 | 14:40:02 | CAN | 192.168.204.124 | 0 |
151 | mabadi | 2022-05-09 | 16:29:46 | USA | 192.168.30.225 | 1 |
152 | mabadi | 2022-05-12 | 10:24:43 | USA | 192.168.96.244 | 0 |
154 | jlansky | 2022-05-12 | 10:57:35 | US | 192.168.23.63 | 1 |
155 | cggriffin | 2022-05-12 | 22:18:42 | USA | 192.168.236.176 | 0 |
156 | btang | 2022-05-11 | 17:08:51 | USA | 192.168.243.95 | 0 |
159 | iuduike | 2022-05-12 | 16:59:50 | USA | 192.168.220.115 | 0 |
160 | jclark | 2022-05-10 | 20:49:00 | CANADA | 192.168.214.49 | 0 |
161 | abellmas | 2022-05-09 | 13:25:50 | CAN | 192.168.180.205 | 0 |
164 | jclark | 2022-05-12 | 21:15:52 | CAN | 192.168.18.34 | 1 |
167 | jclark | 2022-05-12 | 15:47:45 | CAN | 192.168.146.51 | 1 |
168 | jlansky | 2022-05-08 | 13:25:42 | USA | 192.168.210.94 | 1 |
169 | alevitsk | 2022-05-08 | 08:10:43 | CANADA | 192.168.210.228 | 0 |
170 | sbaelish | 2022-05-09 | 16:43:18 | USA | 192.168.65.113 | 0 |
171 | drosas | 2022-05-10 | 16:32:55 | USA | 192.168.92.218 | 0 |
172 | mabadi | 2022-05-08 | 08:06:50 | US | 192.168.180.41 | 1 |
173 | asundara | 2022-05-12 | 23:17:52 | US | 192.168.58.217 | 1 |
174 | lyamamot | 2022-05-10 | 12:26:27 | US | 192.168.228.122 | 0 |
175 | jhill | 2022-05-10 | 00:17:09 | USA | 192.168.130.218 | 0 |
177 | wjaffrey | 2022-05-11 | 00:15:55 | USA | 192.168.144.165 | 0 |
178 | sgilmore | 2022-05-08 | 12:27:22 | CAN | 192.168.52.216 | 0 |
179 | jclark | 2022-05-12 | 04:08:17 | CAN | 192.168.232.93 | 0 |
181 | abellmas | 2022-05-10 | 13:37:05 | CAN | 192.168.60.111 | 0 |
182 | lyamamot | 2022-05-10 | 06:01:31 | USA | 192.168.106.52 | 0 |
183 | rmason | 2022-05-11 | 05:29:36 | CANADA | 192.168.137.147 | 0 |
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 | rmason | 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 |

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 |
-----+-----+-----+-----+-----+-----+-----+
144 rows in set (0.001 sec)

MariaDB [organization]> 
```

4. This query had 144 results of login attempts outside of Mexico.

## Retrieve employees in Marketing

Follow the first step above.

In step 2, you will substitute the log\_in\_attempts table for employees table. Put a semicolon after employees to bring up the table and identify the operator names.

3. Then, you will type where department = 'marketing' and office like 'east%';. You type department as the operator name and equal sign to signify that you want the exact name "marketing". Type AND to inform the system that you want to add another filter. Then type the next operator name "office" and the work LIKE after it as you are trying to get all the offices in the east buildings. Type east% in quotes to let it know you want all names with the word east in it. Semicolon signifies you are done filtering and are ready for results.

```
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 | k865l965m233 | rgosh | Marketing | East-157 |
| 1103 | NULL | randers | Marketing | East-460 |
| 1156 | a184b775c707 | dellery | Marketing | East-417 |
| 1163 | h679i515j339 | cwilliam | Marketing | East-216 |
+-----+-----+-----+-----+-----+
7 rows in set (0.002 sec)

MariaDB [organization]> []
```

4. This query resulted in 7 employee entries in the east building.

## Retrieve employees in Finance or Sales

First, type in the first 2 steps in the last query above for employees.

3. Then, you would type where department = 'finance' or department = 'sales';. In this query, you are trying to identify two departments so typing out "department =" and the operator name in quotes will do this. Apply the word "OR" in between the department operator names to filter to both of those departments. Example shown below.



```

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 | lrodrigu | Sales | South-134 |
| 1010 | k242l212m542 | 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 | j236k303l245 | 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 | k367l639m697 | 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 |

```

```
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 | nzhaio | 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]> █
```

4. This query resulted in 71 employees in the finance and sales departments.

# Retrieve all employees not in IT

Follow the first 2 steps in the query for employees.

3. Then, you would type where NOT department = 'information technology';. The word NOT is typed after where because you are trying to exclude information technology employees in the table. You have to type the whole name of "IT", which is information technology. Example photos shown below.

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	sgillmore	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	k242l212m542	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
1031	f419g188h578	dkot	Marketing	West-408
1034	i679j565k940	bsand	Human Resources	East-484
1035	j236k303l245	bisles	Sales	South-171
1036	k550l533m205	rjensen	Marketing	Central-239
1038	m873n636o225	btang	Human Resources	Central-260
1039	n253o917p623	cjackson	Sales	East-378
1040	o783p832q294	dtarly	Human Resources	East-237
1041	p929q222r778	cgriffin	Sales	North-208
1042	q175r338s833	acook	Human Resources	West-381
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
1051	z451a308b518	itraora	Marketing	Central-134
1052	a192b174c940	jdarosa	Marketing	East-195
1053	b979c871d361	nemmanue	Human Resources	Central-259

1053	b979c871d361	nemmanue	Human Resources	Central-259
1055	d831e972f553	awilliam	Marketing	Central-256
1056	e782f537g683	ankala	Marketing	North-139
1057	f370g535h632	mscott	Sales	South-270
1058	g264h852i697	madebowa	Marketing	South-119
1059	h832i322j795	jnguyen	Marketing	South-255
1061	j255k281l925	nhersh	Human Resources	East-163
1062	k367l639m697	redwards	Finance	North-180
1063	l686m140n569	lpope	Sales	East-226
1064	NULL	ejones	Marketing	South-477
1065	n428o322p522	imoore	Human Resources	West-490
1066	o678p794q957	ttyrell	Sales	Central-444
1067	p288q432r721	lwhite	Marketing	North-277
1069	NULL	jpark	Finance	East-110
1070	s772t175u409	tbailey	Human Resources	North-204
1071	t244u829v723	zdutchma	Sales	West-348
1072	u905v920w694	esmith	Sales	East-421
1073	v135w241x773	srobinso	Marketing	Central-494
1075	x573y883z772	fbautist	Marketing	East-267
1076	y347z204a710	fgarcia	Finance	Central-270
1077	z654a154b259	ldavis	Human Resources	East-241
1078	a667b270c984	sharley	Sales	North-418
1079	b433c245d868	gmedina	Marketing	North-456
1080	c568d742e974	gmoon	Marketing	North-156
1081	d647e310f618	qcorbit	Finance	South-290
1083	f840g812h544	gkoshi	Finance	West-165
1084	g950h972i991	nhuynh	Human Resources	South-155
1085	h339i498j269	cperez	Sales	East-325
1086	i281j129k749	lmajumda	Sales	West-499
1088	k865l965m233	rgosh	Marketing	East-157
1089	l358m929n154	jpark2	Sales	West-251
1091	n378o313p469	rtran	Sales	Central-230
1092	o391p779q935	lpark	Sales	West-227
1093	p765q957r699	etargary	Human Resources	Central-247
1097	t363u179v368	jlee	Human Resources	South-254
1098	u671v146w618	tarchamb	Sales	North-423
1099	v283w690x104	anaser	Finance	West-357
1100	w322x611y598	mjin	Human Resources	Central-371
1101	x701y250z303	ichowdhu	Human Resources	East-233
1102	y943z930a241	kselassi	Marketing	South-378
1103	NULL	randerss	Marketing	East-460
1105	b551c837d758	kmei	Finance	Central-232
1106	c597d792e215	jcohen	Marketing	South-395
1107	d168e758f876	akajwara	Sales	North-471
1108	e113f288g203	jwashing	Human Resources	North-226
1109	f229g533h679	nlocklea	Sales	East-196
1110	g567h376i314	pchaudhu	Sales	Central-428
1111	h835i179j862	jlee	Sales	West-309

1111		h835i179j862		jlee		Sales		West-309	
1113		j781k420l510		pjaimes		Human Resources		East-366	
1114		NULL		xgreene		Marketing		North-335	
1116		m272n572o874		nzhao		Sales		South-100	
1117		n683o758p820		dahmad		Sales		West-405	
1118		o305p208q337		jpark3		Sales		South-329	
1119		p164q780r999		omubarak		Sales		West-409	
1120		q912r119s313		rbradsha		Marketing		Central-200	
1121		r628s557t397		mrojas		Sales		East-288	
1122		s103t952u851		btorres		Finance		West-319	
1123		t479u468v151		ekonya		Human Resources		South-445	
1124		u340v931w764		claw		Human Resources		Central-172	
1125		v491w553x421		mrodgers		Marketing		South-490	
1128		y103z561a649		mpirato		Human Resources		West-205	
1129		z566a147b347		plopez		Marketing		West-326	
1130		a317b635c465		tsnow		Sales		Central-451	
1132		c150d982e144		creddy		Human Resources		Central-210	
1133		d693e351f221		pfrey		Marketing		Central-164	
1134		e395f616g566		akhatri		Human Resources		West-159	
1136		g299h520i457		jhawes		Finance		West-416	
1137		h165i539j638		mwood		Human Resources		South-166	
1138		i671j355k725		sromero		Finance		South-329	
1139		j637k986l199		emorton		Human Resources		North-300	
1140		k982l1199m839		apatel2		Human Resources		East-385	
1141		l282m821n717		cochuba		Human Resources		South-282	
1142		m674n127o823		lsilva		Finance		East-440	
1144		NULL		erobinso		Finance		Central-266	
1145		p752q137r169		msosa		Human Resources		South-345	
1146		q228r135s755		ulemere		Human Resources		Central-171	
1147		r454s225t299		tvega		Finance		West-177	
1148		s328t505u907		dharvey		Finance		South-181	
1150		u554v512w139		lmarin		Marketing		Central-364	
1151		v852w513x954		sshah		Human Resources		North-272	
1152		NULL		nwilliam		Marketing		Central-170	
1153		x677y330z296		ncardena		Marketing		Central-363	
1154		y765z123a548		obryand		Marketing		North-182	
1155		z942a966b589		zjones		Human Resources		East-122	
1156		a184b775c707		dellery		Marketing		East-417	
1157		b264c773d977		lstein		Human Resources		Central-343	
1158		c406d877e950		bnaser		Human Resources		Central-243	
1159		d881e710f732		jshen		Finance		East-193	
1160		e127f591g924		spham		Marketing		West-353	
1163		h679i515j339		cwilliam		Marketing		East-216	
1164		i682j513k442		fsmeltz		Finance		North-163	
1165		j713k893l832		nwords		Marketing		South-128	
1166		k495l234m708		nyoung		Marketing		Central-397	
1167		l738m922n515		tblackwe		Marketing		North-443	
1169		NULL		mmitchel		Sales		Central-250	

```

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 | bhode | 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]> 

```

4. This query resulted in 161 employees not in the information technology department.

## Summary

This project was to give you a better understanding of how to query in SQL using basic commands and knowing how to use them. You are able to filter out certain criteria to narrow down your search results for any incidents you need to take action to.