Apply filters to SQL queries

Project description

[My organization is currently taking steps to improve our overall security posture. I've been tasked with investigating all potential security issues, and also with updating employee workstations as needed, in order to ensure our system is secure. Then make a report to present to company stakeholders. The following are examples of how I used SQL with filters to perform security-related tasks.]

Retrieve after hours failed login attempts

[Your team is investigating failed login attempts that were made after business hours. You want to retrieve this information from the login activity. You'll identify all unsuccessful attempts after 18:00. I selected all the columns from the log_in_attempts table. In the 'where' clause, I used the 'and' operator to filter the login_time column with the greater than '>' operator to search for login attempts made after '18:00', and the success column with the 'equals' operator for unsuccessful login attempts with 'false'.

```
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  |       0 |
|       28 | aestrada  | 2022-05-09 | 19:28:12   | MEXICO  | 192.168.27.57   |       0 |
|       34 | drosas    | 2022-05-11 | 21:02:04   | US      | 192.168.45.93   |       0 |
|       42 | cgriffin  | 2022-05-09 | 23:04:05   | US      | 192.168.4.157   |       0 |
|       52 | cjackson  | 2022-05-10 | 22:07:07   | CAN     | 192.168.58.57   |       0 |
|       69 | wjaffrey  | 2022-05-11 | 19:55:15   | USA     | 192.168.100.17  |       0 |
|       82 | abernard  | 2022-05-12 | 23:38:46   | MEX     | 192.168.234.49  |       0 |
|       87 | apatel    | 2022-05-08 | 22:38:31   | CANADA  | 192.168.132.153 |       0 |
|       96 | ivelasco  | 2022-05-09 | 22:36:36   | CAN     | 192.168.84.194  |       0 |
|      104 | asundara  | 2022-05-11 | 18:38:07   | US      | 192.168.96.200  |       0 |
|      107 | bisles    | 2022-05-12 | 20:25:57   | USA     | 192.168.116.187 |       0 |
|      111 | aestrada  | 2022-05-10 | 22:00:26   | MEXICO  | 192.168.76.27   |       0 |
|      127 | abellmas  | 2022-05-09 | 21:20:51   | CANADA  | 192.168.70.122  |       0 |
|      131 | bisles    | 2022-05-09 | 20:03:55   | US      | 192.168.113.171 |       0 |
|      155 | cgriffin  | 2022-05-12 | 22:18:42   | USA     | 192.168.236.176 |       0 |
|      160 | jclark    | 2022-05-10 | 20:49:00   | CANADA  | 192.168.214.49  |       0 |
|      199 | yappiah   | 2022-05-11 | 19:34:48   | MEXICO  | 192.168.44.232  |       0 |
+----------+-----------+------------+------------+---------+-----------------+---------+
19 rows in set (0.023 sec)

MariaDB [organization]>
```

]

Retrieve login attempts on specific dates

[A suspicious event occurred on 2022-05-09. To investigate this event, I will investigate all login attempts which occurred on this day and the day before. I selected all the columns from the log_in_attempts table. In the 'where' clause, I used the 'or' operator to filter the login_date column to return only the attempts that were made on both '2022-05-08' and '2022-05-09'.

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

ariaDB [organization]> █
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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, I'll need to investigate login attempts that occurred outside of Mexico. I selected all the columns from the log_in_attempts table. In the 'where' clause, I used the 'not' operator on the country column, with the 'like' and '%' wildcard on 'MEX%', to return only attempts made outside of Mexico. Some of the records are stored as

'MEX' and others are stored as 'MEXICO'. I used the '%' wildcard to return both conditions.

```
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 |
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| 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 |
| 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 |
```

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
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 | nmason    | 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 | 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 |
| 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 | cgriffin  | 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 | nmason    | 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 |

| 189 | nmason    | 2022-05-08 | 05:37:24 | CANADA | 192.168.168.117 | 1 |
| 190 | jsoto     | 2022-05-09 | 05:09:21 | USA    | 192.168.25.60   | 0 |
| 191 | cjackson  | 2022-05-08 | 06:46:07 | CANADA | 192.168.7.187   | 0 |
| 192 | bisles    | 2022-05-10 | 08:32:03 | USA    | 192.168.201.40  | 1 |
| 193 | lrodriqu  | 2022-05-08 | 07:11:29 | US     | 192.168.125.240 | 0 |
| 194 | jclark    | 2022-05-12 | 14:11:04 | CAN    | 192.168.197.247 | 0 |
| 195 | alevitsk  | 2022-05-11 | 06:59:13 | CANADA | 192.168.236.78  | 1 |
| 196 | acook     | 2022-05-10 | 09:56:48 | CAN    | 192.168.52.90   | 0 |
| 197 | jsoto     | 2022-05-08 | 09:05:09 | US     | 192.168.36.21   | 0 |
| 200 | jclark    | 2022-05-12 | 01:11:45 | CANADA | 192.168.91.103  | 1 |
+----------+-----------+-----------+----------+----------+------------------+--------+
144 rows in set (0.022 sec)
```
]

Retrieve employees in Marketing

[Our team is updating employee machines, and I need to obtain the information about employees in the 'Marketing' department who are located in all offices in the East building. I selected all the columns from the employees table. In the 'where' clause, I used the 'and' operator to filter the department column with the '=' operator to return only employees in the 'Marketing' department', and the office column with the 'like' and '%' wildcard on 'east%' to return all employees who are located in all offices in the East building.

```
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          | 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]>
```
]

Retrieve employees in Finance or Sales

[Our team needs to perform a different update to the computers of all employees in the Finance or the Sales department, and I need to locate information on these employees. I selected all the columns from the employees table. In the 'where' clause, I used the 'or' operator to filter the department column with the '=' operator to return employees with a value that include Sales and Finance.

```
MariaDB [organization]> select *
    -> from employees
    -> where department = 'sales' or department = 'finance';
+-------------+--------------+-----------+------------+-------------+
| 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 | 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   |
|  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   |
|  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   |

|  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]>
```
]

Retrieve all employees not in IT

[Our team needs to make one more update. This update was already made to employees' computers in the Information Technology department, but employees in all other departments need it. I need to give the team information about employees who are not in the 'Information Technology' department. I selected all the columns from the employees table. In the 'where' clause, I used the 'not' and '=' operators to filter the department column to return all employees not in the 'Information Technology' department.

```
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 | 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
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	w326x611y598	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
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	k982l199m839	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

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|   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 |
|   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]>
```
]

Summary

[I added filters to multiple SQL queries that I performed to obtain information on login attempts and employee machines, that was needed to investigate suspicious activity as well as performing updates on workstations. I used the AND, OR, NOT, greater than '>' and equals '=' operators, as well as the LIKE and percentage sign '%' wildcards to filter for patterns in two different tables, log_in_attempts and employees.]