# Apply filters to SQL queries

## Project description

Some potential security issues that involve login attempts and employee machines were discovered. And the task was to examine the organization’s data in their employees and log\_in\_attempts tables. In order to do that SQL filters were used to retrieve records from different datasets and investigate the potential security issues.

## Retrieve after hours failed login attempts

A screenshot of a computer screen

Description automatically generated with medium confidence

First the **log\_in\_attempts** table was queried to review after hours login activity. The **AND** filter was used to create a query that identifies all failed login attempts that occurred after 18:00 through the **login\_time** column. And in the **success** column it contains a value of **0** (**FALSE**) when a login attempt failed or **1** (**TRUE**) if a login attempt was successful. This was you can used in the query to identify failed login attempts.

## Retrieve login attempts on specific dates

A picture containing text, screenshot, font, black

Description automatically generated

In this query all the columns were selected using **SELECT \*** from the log\_in\_attempts table using **FROM log\_in\_attempts** to get all the failed login attempts that occurred on 2022-05-08 and 2022-05-09 using the query **WHERE login\_date = ‘2022-05-05’ OR login\_date = ‘2022-05-09;** The last query prints out all the attempts from the login\_date column if it equals the date 2022-05-08 or 2022-05-09 using the **OR** operator.

## Retrieve login attempts outside of Mexico



In this query all the columns were selected using **SELECT \*** from the log\_in\_attempts table using **FROM log\_in\_attempts**. Then the NOT filter was used to retrieve login attempts that did not originate in Mexico using the query **WHERE NOT country LIKE ‘MEX%’;** The pattern ‘MEX%’ was used because in the country column, Mexico was written both as ‘MEX’ and ‘MEXICO’ and the % indicates to retrieve anything that starts with MEX and ends with any number of letters. And doing this ensures that both MEX and MEXICO could be retrieved.

## Retrieve employees in Marketing

A screenshot of a computer screen

Description automatically generated with low confidence

In this query all the columns were selected using **SELECT \*** from the log\_in\_attempts table using **FROM employees**. Then using the filters **AND** and **LIKE** on the department and office columns, it returned information about employees in the Marketing department who are located in all offices in the East building. This was achieved using the query **WHERE department = ‘Marketing’ AND office LIKE ‘East%’;**

## Retrieve employees in Finance or Sales



The team needed to perform a different update to the computers of all employees in the Finance or the Sales department and needed to locate information on these employees. This was done by using the query above where column that was being filtered using OR, department was equaled to Finance or Sales.

## Retrieve all employees not in IT



The team needed to make one more update and the update was already made to employee computers in the Information Technology department. The team needed information about employees who are not in that department which was done with the above query using the **NOT** operator to identify these employees. In this case, the department column was filtered through to return everything that was NOT ‘Information Technology’.

## Summary

First, all failed login attempts after business hours (18:00) were retrieved using the AND operator. Second, all login attempts that occurred on specific dates like, 2022-05-05 or 2022-05-09 were retrieved using the OR operator. Third, logins that didn't originate in Mexico were retrieved using the NOT operator and LIKE filter. Fourth, information about certain employees in the Marketing department was retrieved using the AND operator and LIKE filter. Fifth, information about employees in the Finance or the Sales department was retrieved using the OR operator. Finally, information about employees who are not in the Information Technology department was obtained using the NOT operator. Using the AND, OR, NOT operator and LIKE filter helped obtain specific information about employees, their machines, and the departments they belong to from the MariaDB. This information was used to investigate potential security issues and to update computers.