

Apply filters to SQL queries

Project description

You are a security professional at a large organization. Part of your job is to investigate security issues to help keep the system secure. You recently discovered some potential security issues that involve login attempts and employee machines. Your task is to examine the organization's data in their employees and log_in_attempts tables. You'll need to use SQL filters to retrieve records from different datasets and investigate the potential security issues.

Retrieve after hours failed login attempts

To get the login time from the login attempts I select *(select all) from the login attempts and then since we only want login time for after 18:00 that were failed, I use > and the AND operator success = 0 (0 represents failed) to get the desired query.

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

Retrieve login attempts on specific dates

For this query, I wanted to retrieve login attempts that occurred on 2022-05-08 or 2022-05-09 so I used select all again and from the login attempts, they I filtered the two dates using OR operator to get queries from either one or both.

```
MariaDB [organization]> SELECT *  
-> FROM log_in_attempts  
-> WHERE login_date = '2022-05-09' OR login_date = '2022-05-08';
```

Retrieve login attempts outside of Mexico

In this example, the team was investigating logins that did not originate from Mexico and the country filed entries included MEX and Mexico, so in order to do this I selected all again from the login attempts but this time used NOT to exclude Mexico and used the LIKE operator to include MEX as well.

```
MariaDB [organization]> SELECT *  
-> FROM log_in_attempts  
-> WHERE NOT country LIKE 'MEX%';
```

Retrieve employees in Marketing

This example I needed to obtain information about employees from the Marketing department who are located in all offices in the East building. To do this I used select all again and from employees because we are searching for employees and then filtered for the Marketing department since that is the type of employees I am looking for and then used AND and LIKE because we want the marketing employees in the East buildings and since the buildings can be

any number I used the % for the pattern to encompass them all.

```
MariaDB [organization]> select *  
-> from employees  
-> WHERE department = 'Marketing' AND office LIKE 'East%';
```

Retrieve employees in Finance or Sales

For this example, I was tasked with locating the information for employees in the Sales or finance department, so I again select all, from employees and since we are okay with having either one I used the OR operator. This gave me a query of employees from the sales and finance departments.

```
MariaDB [organization]> select *  
-> from employees  
-> WHERE department = 'Finance' OR department = 'Sales';
```

Retrieve all employees not in IT

This task needed me to get information on employees who are not in the IT department. So once again I use select all, from employees and then use the NOT operator to exclude the IT department but include everything else.

```
MariaDB [organization]> select *  
-> from employees  
-> WHERE NOT department = 'Information Technology';
```

Summary

This exercise gave me practical experience in using SQL to run SQL queries to retrieve information from a database and apply SQL AND, OR and NOT operators to filter SQL queries.