

Portfolio Activity: Apply filters to SQL queries

Practice Assignment • 30 min
English

Activity Overview

In this activity, you will create a new portfolio document to demonstrate your experience using SQL. You can add this document to your cybersecurity portfolio, which you can share with prospective employers or recruiters. To review the importance of building a professional portfolio and options for creating your portfolio, read [Create a cybersecurity portfolio](#).

To create your portfolio document, you will review a scenario and follow a series of steps. This scenario is connected to the lab you have just completed about using the AND, OR, and NOT operators in SQL to filter for information. You will explain the queries you performed in that lab, and this will help you prepare for future job interviews and other steps in the hiring process.

Be sure to complete this activity and answer the questions that follow before moving on. The next course item will provide you with a completed exemplar to compare to your own work.

Scenario

Review the scenario below. Then complete the step-by-step instructions.

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.

Note: This scenario involves the same queries as the ones the Filter with AND, OR, and NOT lab. You can revisit the lab to get screenshots to include in your portfolio document. If you choose, it's also possible to complete this activity without revisiting the lab by typing your queries in the template

Step-By-Step Instructions

Follow the instructions to complete each step of the activity. Then, answer the 8 questions in the next course item before comparing your work to a completed exemplar.

Step 1: Access the template

To use the template for this course item:

- Click the following link and select *Use Template*: [Apply filters to SQL queries](#) (In this step, you will just open the template. More instructions for how to use the template will be included in later steps.)

OR

If you don't have a Google account, you can download the template directly from the following link: [Apply filters to SQL queries](#)

Step 2: Access supporting materials

The following supporting materials will help you complete this activity. Keep them open as you proceed to the next steps.

Note: It is recommended that you use the Filter with AND, OR, and NOT lab to complete this portfolio activity.

To use the supporting materials for this course item, click the following links:

- The Instructions for including SQL queries document provides instructions and best practices for including samples of SQL queries in your portfolio activity: [Instructions for including SQL queries](#)
- The Table formats document describes how the tables used for this portfolio activity are organized: [Table formats](#)

OR

- If you don't have a Google account, you can download the supporting materials directly from the following link: [Instructions for including SQL queries](#)

If you're revisiting the lab, the Table formats document is optional. You will also be able to view the tables in the lab: [Table formats](#)

Step 3: Retrieve after hours failed login attempts

You recently discovered a potential security incident that occurred after business hours. To investigate this, you need to query the `log_in_attempts` table and review after hours login activity. Use filters in SQL to create a query that identifies all failed login attempts that occurred after 18:00. (The time of the login attempt is found in the `login_time` column. The success column contains a value of 0 when a login attempt failed; you can use either a value of 0 or FALSE in your query to identify failed login attempts.)

Describe your query and how it works in the Retrieve after hours failed login attempts section of the Apply filters to SQL queries template.

In the Filter with AND, OR, and NOT lab, take a screenshot of the SQL query you used and copy it into the template. Or, type this query directly into the template.

Step 4: Retrieve login attempts on specific dates

A suspicious event occurred on 2022-05-09. To investigate this event, you want to review all login attempts which occurred on this day and the day before. Use filters in SQL to create a query that identifies all login attempts that occurred on 2022-05-09 or 2022-05-08. (The date of the login attempt is found in the login_date column.)

Describe your query and how it works in the Retrieve login attempts on specific dates section of the Apply filters to SQL queries template.

In the Filter with AND, OR, and NOT lab, take a screenshot of the SQL query you used and copy it into the template. Or, type this query directly into the template.

Step 5: 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, you need to investigate login attempts that occurred outside of Mexico. Use filters in SQL to create a query that identifies all login attempts that occurred outside of Mexico. (When referring to Mexico, the country column contains values of both MEX and MEXICO, and you need to use the LIKE keyword with % to make sure your query reflects this.)

Describe your query and how it works in the Retrieve login attempts on specific dates section of the Apply filters to SQL queries template.

In the Filter with AND, OR, and NOT lab, take a screenshot of the SQL query you used and copy it into the template. Or, type this query directly into the template.

Step 6: Retrieve employees in Marketing

Your team wants to perform security updates on specific employee machines in the Marketing department. You're responsible for getting information on these employee machines and will need to query the employees table. Use filters in SQL to create a query that identifies all employees in the Marketing department for all offices in the East building.

(The department of the employee is found in the department column, which contains values that include Marketing. The office is found in the office column. Some examples of values in this column are East-170, East-320, and North-434. You'll need to use the LIKE keyword with % to filter for the East building.)

Describe your query and how it works in the Retrieve employees in Marketing section of the Apply filters to SQL queries template.

In the Filter with AND, OR, and NOT lab, take a screenshot of the SQL query you used and copy it into the template. Or, type this query directly into the template.

Step 7: Retrieve employees in Finance or Sales

Your team now needs to perform a different security update on machines for employees in the Sales and Finance departments. Use filters in SQL to create a query that identifies

all employees in the Sales or Finance departments. (The department of the employee is found in the department column, which contains values that include Sales and Finance.) Describe your query and how it works in the Retrieve employees in Finance or Sales section of the Apply filters to SQL queries template.

In the Filter with AND, OR, and NOT lab, take a screenshot of the SQL query you used and copy it into the template. Or, type this query directly into the template.

Step 8: Retrieve all employees not in IT

Your team needs to make one more update to employee machines. The employees who are in the Information Technology department already had this update, but employees in all other departments need it. Use filters in SQL to create a query which identifies all employees not in the IT department. (The department of the employee is found in the department column, which contains values that include Information Technology.)

Describe your query and how it works in the Retrieve all employees not in IT section of the Apply filters to SQL queries template.

In the Filter with AND, OR, and NOT lab, take a screenshot of the SQL query you used and copy it into the template. Or, type this query directly into the template.

Step 9: Finalize your document

To finalize the document and make its purpose clear to potential employers, be sure to complete the Project description and Summary sections of the Apply filters to SQL queries template.

In the Project description section, give a general overview of the scenario and what you accomplish through SQL. Write two to four sentences.

In the Summary section, provide a short summary of the previous tasks and connect them to the scenario. Write approximately two to four sentences.

What to Include in Your Response



Be sure to include the following in your completed activity:

- Screenshots of your queries or typed versions of the queries
- Explanations of your queries
- A project description at the beginning
- A summary at the end
- Details on using LIKE to search for a pattern
- Details on filtering for dates and times
- Details on using AND and OR to filter on multiple conditions

Details on using NOT in filters

Step 10: Assess your activity

The next course item is a self-assessment for your Apply filters to SQL queries portfolio activity. You will use these statements to review your own work. The self-assessment process is an important part of the learning experience because it allows you to *objectively* assess your Apply filters to SQL queries portfolio activity.

There are a total of 8 points possible for this activity and each statement is worth 1 point. To complete the self-assessment, first open your Apply filters to SQL queries portfolio activity. Then respond yes or no to each statement.

When you complete and submit your responses, you will receive a percentage score. This score will help you confirm whether you completed the required steps of the activity. The recommended passing grade for this project is at least 80% (or 7/8 points). If you want to increase your score, you can revise your project and then resubmit your responses to reflect any changes you made. Try to achieve at least 7 points before continuing on to the exemplar.