

My project on using SQL Query “Where “and “Like” operator to Filter data

Maria Audu

In this scenario, I need to get specific information about employees, their machines, and the departments they're in. As a team we need this data to perform various tasks, such as running updates, posting a privacy notice in certain departments, and sending an alert to an employee with an issue on a machine.

I need to find the required information by querying a database, then add filters to the queries to locate the information more quickly.

To carry out this task: **First**, list all organization machines and their operating systems. **Second**, list all machines with the operating system OS 2. **Third**, list all the employees in the Finance and Sales departments. **Fourth**, obtain information about machines.

Task 1. List all organization machines

In this task, I will get a list of all organization machines and their operating systems. The data is contained in the machines table. using the SELECT keyword to return specific columns.

- Run a SQL query to retrieve only the device_id and operating_system columns from the machines table.

To execute this query:

```
SELECT device_id, operating_system  
FROM machines;
```

Question: How many rows were returned from the machines table? (You'd view the number of rows at the bottom of the output.)

Answer: The machines table returned 200 rows.

I completed this task and retrieved the information from the machines table.

Task 2. Retrieve a list of the machines with OS 2

In this task, I need to obtain a list of all machines with the 'OS 2' operating system because these machines need an update. To get this information, I'll run first SQL query with a filter.

- Select all the records from the machines table with a value of 'OS 2' in the operating_system column. Replace the value X with the correct string:

```
SELECT device_id, operating_system
```

```
FROM machines
```

```
WHERE operating_system = 'X';
```

To execute this query:

```
SELECT device_id, operating_system
```

```
FROM machines
```

```
WHERE operating_system = 'OS 2';
```

Note: The WHERE clause allows you to filter the results returned by a query by returning only the records that satisfy the condition.

The output displays the selected columns of the machines table, filtered by the operating system:

Question: How many machines in the database use the OS 2 operating system?

Answer: There are 80 machines in the database that use the OS 2 operating system.

I completed this task and retrieved all the records from the machines table with an operating_system of OS 2.

Task 3. List employees in specific departments

In this task, I need to retrieve a list of all the employees in the Finance and Sales departments to obtain their office numbers. A notice about handling confidential financial information will be posted to these offices.

1. Filter the rows returned from department column in the employees table to include only employees from the 'Finance' department. Replace X with the appropriate column name and Y with the appropriate value to complete the filter:

```
SELECT *  
FROM employees  
WHERE X = 'Y';
```

To execute this query:

```
SELECT *  
FROM employees  
WHERE department = 'Finance';
```

The output displays the contents of the employees table, including only employees in the Finance department.

Question: What is the employee_id of the first row returned?

Answer: The employee_id of the first row returned is 1003.

2. Modify the previous query so that it returns employees who are in the 'Sales' department.

To execute this query:

```
SELECT *  
FROM employees  
WHERE department = 'Sales';
```

The output will display the contents of the employees table, including only employees in the Sales department.

Question: How many employees work in the Sales department?

Answer: There are 33 employees who work in the Sales department.

I completed this task and retrieved the information about employees in the Finance and Sales departments from the employees table.

Task 4. Identify employee machines

As a team we recently discovered that there are issues with machines in the South building. In this task, I need to obtain certain employee and computer information.

A machine in 'South-109' has an issue. I need to determine which employee uses that computer so I can send them an alert.

1. Write a query to identify which employee uses the office in 'South-109'. (The data must be returned from the office column in the employees table.)

To execute this query:

```
SELECT *  
FROM employees  
WHERE office = 'South-109';
```

Question: Which of the following employees uses the computer with the issue?

Answer: The user ID of the employee with the computer issue is jlansky.

Next, the team has determined that there is an issue with all the machines in the South building. Offices in the organization are named with the building name, a hyphen, and the office number in that building (for example, 'South-109').

2. Modify the query you used in the previous step so that it returns information on all the employees in the 'South' building. Use the LIKE operator with % in this query.

To execute this query:

```
SELECT *  
FROM employees  
WHERE office LIKE 'South%';
```

Note: The LIKE keyword in SQL performs simple string matches. The matching pattern may include the wildcard % to represent a string of any length. This wildcard may be placed both before and after the targeted substring.

Question: Which department does the first employee listed in the South building belong to?

Answer: The first employee on the list returned works in the Finance department.

I completed this task and identified the employee who uses the office in South-109. I have also retrieved the information about all the machines in the South building.

I now have practical experience in using SQL to

- Apply the WHERE clause to filter what a SQL query returns and
- Use the LIKE operator to filter for patterns.