

Activity: Perform a SQL query

Scenario

In this scenario, you have to determine which employee devices must be updated. You also need to investigate user login activity to explore if any unusual activity has occurred.

The information you need is located in the `machines` and `login_attempts` tables in the organization database.

Here's how you'll do this task: **First**, you'll obtain information on the employee devices that must be updated. **Next**, you'll examine the login attempts for unusual activity. **Finally**, you'll use the `ORDER BY` keyword to sort the data returned by your SQL queries.

Task 1. Retrieve employee device data

1. Run the following query to select all device information from the `machines` table:

```
MariaDB [organization]> SELECT *
->
-> FROM machines;
```

device_id	operating_system	email_client	OS_patch_date	employee_id
a184b775c707	OS 1	Email Client 1	2021-09-01	1156
a192b174c940	OS 2	Email Client 1	2021-06-01	1052
a305b818c708	OS 3	Email Client 2	2021-06-01	1182
a317b635c465	OS 1	Email Client 2	2021-03-01	1130
a320b137c219	OS 2	Email Client 2	2021-03-01	1000

2. Run the following query to select only the `device_id` and `email_client` columns from the `machines` table.

```
MariaDB [organization]> SELECT device_id, operating_system
->
-> FROM machines;
```

device_id	operating_system
a184b775c707	OS 1
a192b174c940	OS 2
a305b818c708	OS 3
a317b635c465	OS 1
a320b137c219	OS 2

3. Complete the query to return only the **device_id**, **operating_system**, and **OS_patch_date** columns from the machines table.

```
MariaDB [organization]> SELECT device_id, operating_system, OS_patch_date FROM machines ;
```

device_id	operating_system	OS_patch_date
a184b775c707	OS 1	2021-09-01
a192b174c940	OS 2	2021-06-01
a305b818c708	OS 3	2021-06-01
a317b635c465	OS 1	2021-03-01
a320b137c219	OS 2	2021-03-01

Task 2. Investigate login activity

1. Write a SQL query to select the **event_id** and **country** columns from the **log_in_attempts** table.

```
MariaDB [organization]> SELECT event_id, country
->
-> FROM log_in_attempts
-> ;
```

event_id	country
1	CAN
2	CAN
3	USA
4	USA
5	CANADA

2. Write a SQL query that selects the **username**, **login_date**, and **login_time** columns from the **log_in_attempts** table.

```
MariaDB [organization]> SELECT username, login_date ,login_time
->
-> FROM log_in_attempts;
```

username	login_date	login_time
jrafael	2022-05-09	04:56:27
apatel	2022-05-10	20:27:27
dkot	2022-05-09	06:47:41
dkot	2022-05-08	02:00:39
jrafael	2022-05-11	03:05:59

- Write a SQL query that selects all columns from the **log_in_attempts** table, using a **single symbol** after the SELECT keyword.

```
MariaDB [organization]> SELECT *
->
-> FROM log_in_attempts
-> ;
```

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

Task 3. Order login attempts data

- Run the following query, which orders **log_in_attempts** data by **login_date**:

```
MariaDB [organization]> SELECT *
->
-> FROM log_in_attempts
->
-> ORDER BY login_date;
```

event_id	username	login_date	login_time	country	ip_address	success
145	ivelasco	2022-05-08	09:06:02	CANADA	192.168.39.196	1
163	tmitchel	2022-05-08	09:21:16	MEX	192.168.119.29	0
36	asundara	2022-05-08	09:00:42	US	192.168.78.151	1
165	jreckley	2022-05-08	15:28:43	MEXICO	192.168.34.193	0
168	jlanaky	2022-05-08	13:25:42	USA	192.168.210.94	1

- Modify the query from the previous step by adding the login time to the ORDER BY clause.

```
MariaDB [organization]> SELECT *
->
-> FROM log_in_attempts
->
-> ORDER BY login_date, login_time;
```

event_id	username	login_date	login_time	country	ip_address	success
117	bsand	2022-05-08	00:19:11	USA	192.168.197.187	0
92	pwashing	2022-05-08	00:36:12	US	192.168.247.219	0
8	bisles	2022-05-08	01:30:17	US	192.168.119.173	0
4	dkot	2022-05-08	02:00:39	USA	192.168.178.71	0
80	cjackson	2022-05-08	02:18:10	CANADA	192.168.33.140	1