irst, you need to retrieve all the information about the employee devices.

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

```
SELECT *
FROM machines;
```

Copied!

Note: *Using the asterisk (*) returns all data from the specified table. Also, table names in MySQL are case-sensitive.*

The output returns all the contents of the `machines` table:

```
MariaDB [organization]> clear
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 |
| a398b471c573 | OS 3            | Email Client 2 | 2021-12-01   |           0 |
| a667b270c984 | OS 1            | Email Client 1 | 2021-03-01   |        1078 |
| a821b452c176 | OS 2            | Email Client 2 | 2021-12-01   |        1104 |
| a998b568c863 | OS 3            | Email Client 1 | 2021-12-01   |        1026 |
| b157c491d493 | OS 2            | Email Client 1 | 2021-03-01   |           0 |
| b239c825d303 | OS 1            | Email Client 1 | 2021-03-01   |        1001 |
| b264c773d977 | OS 2            | Email Client 2 | 2021-03-01   |        1157 |
| b265c937d713 | OS 2            | Email Client 1 | 2021-09-01   |        1131 |
| b433c245d868 | OS 1            | Email Client 1 | 2021-06-01   |        1079 |
| b551c837d758 | OS 3            | Email Client 1 | 2021-03-01   |        1105 |
| b566c710d544 | OS 1            | Email Client 1 | 2021-06-01   |        1183 |
| b806c503d354 | OS 2            | Email Client 1 | 2021-12-01   |        1027 |
```

2. Run the following query to select only the `device_id` and `email_client`columns from the `machines` table. Replace X with `device_id` and Y with `email_client`:

```
SELECT X, Y FROM machines;
```

Copied!

What email client is returned in the third row?

Email Client 4

Email Client 1

checkEmail Client 2

Email Client 3

Now, you need information on the operating systems used on various devices and their last patch date.

```
MariaDB [organization]> select device_id, email_client
    -> from machines;
+--------------+----------------+
| device_id    | email_client   |
+--------------+----------------+
| a184b775c707 | Email Client 1 |
| a192b174c940 | Email Client 1 |
| a305b818c708 | Email Client 2 |
| a317b635c465 | Email Client 2 |
| a320b137c219 | Email Client 2 |
| a398b471c573 | Email Client 2 |
| a667b270c984 | Email Client 1 |
| a821b452c176 | Email Client 2 |
| a998b568c863 | Email Client 1 |
```

Now, you need information on the operating systems used on various devices and their last patch date.

3. Complete the query to return only the `device_id`, `operating_system`, and `OS_patch_date` columns from the `machines` table. Replace `X`, `Y`, and `Z` with the columns that you need to return:

```
SELECT X, Y, Z FROM machines;
```

Copied!

What is the patch date of the first entry?

2021-12-01

check2021-09-01

2021-06-01

2021-03-01

Click **Check my progress** to verify that you have completed this task correctly.

First, you need to investigate the locations where login attempts were made to ensure that they're in expected areas (the United States, Canada, or Mexico).

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

Were any login attempts made from Australia?

checkNo

Yes

```
from log_in_attempts' at line 1
MariaDB [organization]> select event_id, country
    -> from log_in_attempts;
+----------+---------+
| event_id | country |
+----------+---------+
|        1 | CAN     |
|        2 | CAN     |
|        3 | USA     |
|        4 | USA     |
|        5 | CANADA  |
|        6 | MEXICO  |
|        7 | CAN     |
|        8 | US      |
|        9 | MEX     |
```

Next, you need to check if login attempts were made outside of the organization's working hours.

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

What username is returned in the fifth row?

checkjrafael

apatel

dkot

mrah

```
MariaDB [organization]>
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   |
| arutley  | 2022-05-12 | 17:00:59   |
| eraab    | 2022-05-11 | 01:45:14   |
| bisles   | 2022-05-08 | 01:30:17   |
| yappiah  | 2022-05-11 | 13:47:29   |
```

Now, you need to get a complete picture of all login attempts.

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

```
MariaDB [organization]>
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 |
|        6 | arutley  | 2022-05-12 | 17:00:59   | MEXICO  | 192.168.3.24    |       0 |
|        7 | eraab    | 2022-05-11 | 01:45:14   | CAN     | 192.168.170.243 |       1 |
|        8 | bisles   | 2022-05-08 | 01:30:17   | US      | 192.168.119.173 |       0 |
|        9 | yappiah  | 2022-05-11 | 13:47:29   | MEX     | 192.168.59.136  |       1 |
|       10 | jrafael  | 2022-05-12 | 09:33:19   | CANADA  | 192.168.228.221 |       0 |
|       11 | sgilmore | 2022-05-11 | 10:16:29   | CANADA  | 192.168.140.81  |       0 |
|       12 | dkot     | 2022-05-08 | 09:11:34   | USA     | 192.168.100.158 |       1 |
```

Task 3. Order login attempts data

In this task, you need to use the `ORDER BY` keyword. You'll sequence the data that your query returns according to the login date and time.

First, you need to sort the information by date.

1. Run the following query, which orders `log_in_attempts` data by `login_date`:

```
SELECT *
FROM log_in_attempts
ORDER BY login_date;
```

```
MariaDB [organization]>
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 | jlansky  | 2022-05-08 | 13:25:42   | USA     | 192.168.210.94  |       1 |
|      169 | alevitsk | 2022-05-08 | 08:10:43   | CANADA  | 192.168.210.228 |       0 |
|       72 | alevitsk | 2022-05-08 | 12:09:10   | CANADA  | 192.168.139.176 |       1 |
|      101 | sbaelish | 2022-05-08 | 12:01:22   | US      | 192.168.145.158 |       0 |
|      172 | mabadi   | 2022-05-08 | 08:06:50   | US      | 192.168.180.41  |       1 |
```

```
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    |
| a398b471c573 | OS 3             | 2021-12-01    |
| a667b270c984 | OS 1             | 2021-03-01    |
| a821b452c176 | OS 2             | 2021-12-01    |
| a998b568c863 | OS 3             | 2021-12-01    |
```

Now, you need to further organize the previous results by ordering them by `login_time`.

2. Modify the query from the previous step by adding the login time to the `ORDER BY` clause. You must replace `X` with the appropriate column name:

```
SELECT *
FROM log_in_attempts
ORDER BY login_date, X;
```

Copied!

What are the username and login time of the first record returned by the above query?

bsand at 00:19:11

gesparza at 00:40:00

pwashing at 00:36:12

wjaffrey at 00:15:55

```
MariaDB [organization]>
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 |
|       43 | mcouliba | 2022-05-08 | 02:35:34   | CANADA  | 192.168.16.208  |       0 |
|      184 | alevitsk | 2022-05-08 | 03:09:48   | CAN     | 192.168.33.70   |       0 |
|       56 | acook    | 2022-05-08 | 04:56:30   | CAN     | 192.168.209.130 |       1 |
|       47 | dkot     | 2022-05-08 | 05:06:45   | US      | 192.168.233.24  |       1 |
|      189 | pmason   | 2022-05-08 | 05:37:24   | CANADA  | 192.168.168.117 |       1 |
```