

Exécuter une requête SQL

Scénario

Dans ce scénario, vous allez identifier les appareils des employés qui doivent être mis à jour. Vous allez également analyser l'activité de connexion des utilisateurs afin de détecter toute activité inhabituelle.

Les informations dont vous avez besoin se trouvent dans les tables `machines` et `login_attempts` de la base de données `organization`.

Voici comment procéder : **tout d'abord**, récupérez les informations sur les appareils des employés qui doivent être mis à jour. **Ensuite**, examinez les tentatives de connexion pour détecter toute activité inhabituelle. **Enfin**, utilisez le mot clé `ORDER BY` pour trier les données renvoyées par vos requêtes SQL.

Tâche 1 : Récupérer les données des appareils des employés

Dans cette tâche, vous allez récupérer des informations sur les appareils des employés que votre équipe doit mettre à jour. Les informations dont vous avez besoin se trouvent dans la table `machines` de la base de données `organization`.

Tout d'abord, récupérez toutes les informations sur les appareils des employés.

1. Exécutez une requête pour sélectionner toutes les informations sur les appareils dans la table `machines`.
2. Exécutez une requête pour sélectionner uniquement les colonnes `device_id` et `email_client` de la table `machines`. Remplacez X par `device_id` et Y par `email_client`.
3. Complétez la requête pour renvoyer uniquement les colonnes `device_id`, `operating_system` et `OS_patch_date` de la table `machines`. Remplacez X, Y et Z par les colonnes que vous souhaitez renvoyer.

```
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
b979c871d361	OS 2	Email Client 1	2021-03-01	1053
c116d593e558	OS 3	Email Client 1	2021-09-01	1002
c150d982e144	OS 2	Email Client 2	2021-06-01	1132
c185d679e493	OS 1	Email Client 2	2021-09-01	0
c406d877e950	OS 2	Email Client 1	2021-06-01	1158
c547d140e477	OS 2	Email Client 1	2021-03-01	1054
c568d742e974	OS 2	Email Client 2	2021-09-01	1080
c597d792e215	OS 2	Email Client 1	2021-09-01	1106
c603d749e374	OS 1	Email Client 1	2021-12-01	1028
c986d200e170	OS 2	Email Client 2	2021-09-01	1184
d168e758f876	OS 2	Email Client 1	2021-09-01	1107
d280e557f635	OS 3	Email Client 1	2021-03-01	0
d336e475f676	OS 2	Email Client 2	2021-06-01	1029
d394e816f943	OS 3	Email Client 2	2021-03-01	1003
d647e310f618	OS 2	Email Client 2	2021-06-01	1081
d693e351f221	OS 2	Email Client 2	2021-09-01	1133
d790e839f461	OS 1	Email Client 1	2021-06-01	1185
d831e972f553	OS 1	Email Client 1	2021-09-01	1055
d881e710f732	OS 3	Email Client 2	2021-03-01	1159
e113f288g203	OS 2	Email Client 2	2021-03-01	1108
e121f951g937	OS 3	Email Client 2	2021-06-01	0
e127f591g924	OS 3	Email Client 2	2021-12-01	1160
e218f877g788	OS 2	Email Client 1	2021-09-01	1004
e281f433g404	OS 1	Email Client 2	2021-12-01	1186
e301f659g551	OS 3	Email Client 2	2021-12-01	1082
e391f189g913	OS 3	Email Client 2	2021-12-01	1030

```
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
b157c491d493	Email Client 1
b239c825d303	Email Client 1
b264c773d977	Email Client 2
b265c937d713	Email Client 1
b433c245d868	Email Client 1
b551c837d758	Email Client 1
b566c710d544	Email Client 1
b806c503d354	Email Client 1
b979c871d361	Email Client 1
c116d593e558	Email Client 1
c150d982e144	Email Client 2
c185d679e493	Email Client 2
c406d877e950	Email Client 1
c547d140e477	Email Client 1
c568d742e974	Email Client 2
c597d792e215	Email Client 1
c603d749e374	Email Client 1
c986d200e170	Email Client 2
d168e758f876	Email Client 1
d280e557f635	Email Client 1
d336e475f676	Email Client 2
d394e816f943	Email Client 2
d647e310f618	Email Client 2
d693e351f221	Email Client 2
d790e839f461	Email Client 1
d831e972f553	Email Client 1
d881e710f732	Email Client 2
e113f288g203	Email Client 2
e121f951g937	Email Client 2
e127f591g924	Email Client 2

```
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
b157c491d493	OS 2	2021-03-01
b239c825d303	OS 1	2021-03-01
b264c773d977	OS 2	2021-03-01
b265c937d713	OS 2	2021-09-01
b433c245d868	OS 1	2021-06-01
b551c837d758	OS 3	2021-03-01
b566c710d544	OS 1	2021-06-01
b806c503d354	OS 2	2021-12-01
b979c871d361	OS 2	2021-03-01
c116d593e558	OS 3	2021-09-01
c150d982e144	OS 2	2021-06-01
c185d679e493	OS 1	2021-09-01
c406d877e950	OS 2	2021-06-01
c547d140e477	OS 2	2021-03-01
c568d742e974	OS 2	2021-09-01
c597d792e215	OS 2	2021-09-01
c603d749e374	OS 1	2021-12-01
c986d200e170	OS 2	2021-09-01
d168e758f876	OS 2	2021-09-01
d280e557f635	OS 3	2021-03-01
d336e475f676	OS 2	2021-06-01
d394e816f943	OS 3	2021-03-01
d647e310f618	OS 2	2021-06-01
d693e351f221	OS 2	2021-09-01
d790e839f461	OS 1	2021-06-01
d831e972f553	OS 1	2021-09-01
d881e710f732	OS 3	2021-03-01
e113f288g203	OS 2	2021-03-01
e121f951g937	OS 3	2021-06-01
e127f591g924	OS 3	2021-12-01
e218f877g788	OS 2	2021-09-01
e281f433g404	OS 1	2021-12-01
e301f659g551	OS 3	2021-12-01

Tâche 2 : Analyser l'activité de connexion

Dans cette tâche, vous allez analyser les informations de la table `log_in_attempts` pour détecter toute activité inhabituelle.

Tout d'abord, analysez l'emplacement des tentatives de connexion pour déterminer s'il se trouve dans une zone normale (États-Unis, Canada ou Mexique).

1. Écrivez une requête SQL pour sélectionner les colonnes `event_id` et `country` de la table `log_in_attempts`.
2. Écrivez une requête SQL pour sélectionner les colonnes `username`, `login_date` et `login_time` de la table `log_in_attempts`.

3. Écrivez une requête SQL pour sélectionner toutes les colonnes de la table `log_in_attempts` en utilisant un seul symbole après le mot clé `SELECT`.

```
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
10	CANADA
11	CANADA
12	USA
13	USA
14	US
15	USA
16	CAN
17	USA
18	US
19	US
20	MEXICO
21	US
22	MEX
23	MEXICO
24	MEXICO
25	US
26	CANADA
27	MEX
28	MEXICO
29	US
30	MEX
31	CANADA
32	CANADA
33	US
34	US
35	MEX
36	US
37	CANADA
38	USA
39	MEXICO
40	MEX
41	CANADA
42	US

FROM log_in_attempts' at line 5

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
jrafael	2022-05-12	09:33:19
sgilmore	2022-05-11	10:16:29
dkot	2022-05-08	09:11:34
mrach	2022-05-11	09:29:34
sbaelish	2022-05-10	10:20:18
lyamamot	2022-05-09	17:17:26
mcouliba	2022-05-11	06:44:22
pwashing	2022-05-11	02:33:02
pwashing	2022-05-11	19:28:50
jhill	2022-05-12	13:09:04
tshah	2022-05-12	18:56:36
iuduike	2022-05-11	17:50:00
rjensen	2022-05-11	00:59:26
yappiah	2022-05-10	18:11:53
arusso	2022-05-09	06:49:39
sbaelish	2022-05-09	07:04:02
apatel	2022-05-08	17:27:00
aalonso	2022-05-10	01:55:35
astrada	2022-05-09	19:28:12
bisles	2022-05-11	01:21:22
yappiah	2022-05-09	03:22:22
acook	2022-05-12	17:36:45
acook	2022-05-09	02:52:02
zbernal	2022-05-11	02:52:10
drosas	2022-05-11	21:02:04
tshah	2022-05-10	15:26:08
asundara	2022-05-08	09:00:42
eraab	2022-05-10	06:03:41
sbaelish	2022-05-09	14:40:01
yappiah	2022-05-09	07:56:40
aalonso	2022-05-12	15:15:46
apatel	2022-05-10	17:39:42
cgriffin	2022-05-09	23:04:05

```
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
13	mrah	2022-05-11	09:29:34	USA	192.168.246.135	1
14	sbaelish	2022-05-10	10:20:18	US	192.168.16.99	1
15	lyamamot	2022-05-09	17:17:26	USA	192.168.183.51	0
16	mcouliba	2022-05-11	06:44:22	CAN	192.168.172.189	1
17	pwashing	2022-05-11	02:33:02	USA	192.168.81.89	1
18	pwashing	2022-05-11	19:28:50	US	192.168.66.142	0
19	jhill	2022-05-12	13:09:04	US	192.168.142.245	1
20	tshah	2022-05-12	18:56:36	MEXICO	192.168.109.50	0
21	iuduike	2022-05-11	17:50:00	US	192.168.131.147	1
22	rjensen	2022-05-11	00:59:26	MEX	192.168.213.128	0
23	yappiah	2022-05-10	18:11:53	MEXICO	192.168.200.48	1
24	arusso	2022-05-09	06:49:39	MEXICO	192.168.171.192	1
25	sbaelish	2022-05-09	07:04:02	US	192.168.33.137	1
26	apatel	2022-05-08	17:27:00	CANADA	192.168.123.105	1
27	aalonso	2022-05-10	01:55:35	MEX	192.168.103.210	0
28	astrada	2022-05-09	19:28:12	MEXICO	192.168.27.57	0
29	bisles	2022-05-11	01:21:22	US	192.168.85.186	0
30	yappiah	2022-05-09	03:22:22	MEX	192.168.124.48	1
31	acook	2022-05-12	17:36:45	CANADA	192.168.58.232	0
32	acook	2022-05-09	02:52:02	CANADA	192.168.142.239	0
33	zbernal	2022-05-11	02:52:10	US	192.168.72.59	1
34	drosas	2022-05-11	21:02:04	US	192.168.45.93	0
35	tshah	2022-05-10	15:26:08	MEX	192.168.92.147	0
36	asundara	2022-05-08	09:00:42	US	192.168.78.151	1
37	eraab	2022-05-10	06:03:41	CANADA	192.168.152.148	0
38	sbaelish	2022-05-09	14:40:01	USA	192.168.60.42	1
39	yappiah	2022-05-09	07:56:40	MEXICO	192.168.57.115	1

Tâche 3 : Trier les données sur les tentatives de connexion

Dans cette tâche, vous allez utiliser le mot clé **ORDER BY**. Vous allez séquencer les données renvoyées par la requête en fonction de la date et de l'heure de connexion.

Tout d'abord, triez les informations par date.

1. Exécutez une requête qui permet de trier les données **log_in_attempts** en fonction de **login_date** :
2. Modifiez la requête de l'étape précédente en ajoutant l'heure de connexion à la clause **ORDER BY**.


```
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
150	nmason	2022-05-08	14:40:02	CAN	192.168.204.124	0
68	mrh	2022-05-08	17:16:13	US	192.168.42.248	1
66	aestrada	2022-05-08	21:58:32	MEX	192.168.67.223	1
53	nmason	2022-05-08	11:51:38	CAN	192.168.133.188	1
147	yappiah	2022-05-08	06:04:34	MEX	192.168.65.245	0
148	daquino	2022-05-08	06:15:55	CANADA	192.168.135.6	1
49	asundara	2022-05-08	14:00:01	US	192.168.173.213	0
47	dkot	2022-05-08	05:06:45	US	192.168.233.24	1
44	daquino	2022-05-08	07:02:35	CANADA	192.168.168.144	0
43	mcouliba	2022-05-08	02:35:34	CANADA	192.168.16.208	0
56	acook	2022-05-08	04:56:30	CAN	192.168.209.130	1
80	cjackson	2022-05-08	02:18:10	CANADA	192.168.33.140	1
117	bsand	2022-05-08	00:19:11	USA	192.168.197.187	0
12	dkot	2022-05-08	09:11:34	USA	192.168.100.158	1
189	nmason	2022-05-08	05:37:24	CANADA	192.168.168.117	1
191	cjackson	2022-05-08	06:46:07	CANADA	192.168.7.187	0
8	bisles	2022-05-08	01:30:17	US	192.168.119.173	0
193	lrodriqu	2022-05-08	07:11:29	US	192.168.125.240	0
4	dkot	2022-05-08	02:00:39	USA	192.168.178.71	0
197	jsoto	2022-05-08	09:05:09	US	192.168.36.21	0
26	apatel	2022-05-08	17:27:00	CANADA	192.168.123.105	1
92	pwashing	2022-05-08	00:36:12	US	192.168.247.219	0
178	sgilmore	2022-05-08	12:27:22	CAN	192.168.52.216	0
83	lrodriqu	2022-05-08	08:10:23	USA	192.168.67.69	1
184	alevitsk	2022-05-08	03:09:48	CAN	192.168.33.70	0
87	apatel	2022-05-08	22:38:31	CANADA	192.168.132.153	0
70	tmitchel	2022-05-09	10:55:17	MEXICO	192.168.87.199	1
61	dtanaka	2022-05-09	09:45:18	USA	192.168.98.221	1
96	ivelasco	2022-05-09	22:36:36	CAN	192.168.84.194	0
58	ivelasco	2022-05-09	17:20:54	CAN	192.168.57.162	0
120	tmitchel	2022-05-09	02:58:17	MEXICO	192.168.134.62	0
97	jreckley	2022-05-09	02:49:23	MEXICO	192.168.32.231	1
79	abernard	2022-05-09	11:41:15	MEX	192.168.158.170	0


```

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 | nmason | 2022-05-08 | 05:37:24 | CANADA | 192.168.168.117 | 1 |
| 147 | yappiah | 2022-05-08 | 06:04:34 | MEX | 192.168.65.245 | 0 |
| 148 | daquino | 2022-05-08 | 06:15:55 | CANADA | 192.168.135.6 | 1 |
| 191 | cjackson | 2022-05-08 | 06:46:07 | CANADA | 192.168.7.187 | 0 |
| 44 | daquino | 2022-05-08 | 07:02:35 | CANADA | 192.168.168.144 | 0 |
| 193 | lrodriqu | 2022-05-08 | 07:11:29 | US | 192.168.125.240 | 0 |
| 172 | mabadi | 2022-05-08 | 08:06:50 | US | 192.168.180.41 | 1 |
| 83 | lrodriqu | 2022-05-08 | 08:10:23 | USA | 192.168.67.69 | 1 |
| 169 | alevitsk | 2022-05-08 | 08:10:43 | CANADA | 192.168.210.228 | 0 |
| 36 | asundara | 2022-05-08 | 09:00:42 | US | 192.168.78.151 | 1 |
| 197 | jsoto | 2022-05-08 | 09:05:09 | US | 192.168.36.21 | 0 |
| 145 | ivelasco | 2022-05-08 | 09:06:02 | CANADA | 192.168.39.196 | 1 |
| 12 | dkot | 2022-05-08 | 09:11:34 | USA | 192.168.100.158 | 1 |
| 163 | tmitchel | 2022-05-08 | 09:21:16 | MEX | 192.168.119.29 | 0 |
| 53 | nmason | 2022-05-08 | 11:51:38 | CAN | 192.168.133.188 | 1 |
| 101 | sbaelish | 2022-05-08 | 12:01:22 | US | 192.168.145.158 | 0 |
| 72 | alevitsk | 2022-05-08 | 12:09:10 | CANADA | 192.168.139.176 | 1 |
| 178 | sgilmore | 2022-05-08 | 12:27:22 | CAN | 192.168.52.216 | 0 |
| 168 | jlansky | 2022-05-08 | 13:25:42 | USA | 192.168.210.94 | 1 |
| 49 | asundara | 2022-05-08 | 14:00:01 | US | 192.168.173.213 | 0 |
| 150 | nmason | 2022-05-08 | 14:40:02 | CAN | 192.168.204.124 | 0 |
| 165 | jreckley | 2022-05-08 | 15:28:43 | MEXICO | 192.168.34.193 | 0 |
| 68 | mrah | 2022-05-08 | 17:16:13 | US | 192.168.42.248 | 1 |
| 26 | apatel | 2022-05-08 | 17:27:00 | CANADA | 192.168.123.105 | 1 |
| 66 | aestrada | 2022-05-08 | 21:58:32 | MEX | 192.168.67.223 | 1 |
| 87 | apatel | 2022-05-08 | 22:38:31 | CANADA | 192.168.132.153 | 0 |
| 110 | mabadi | 2022-05-09 | 00:01:54 | USA | 192.168.90.124 | 1 |
| 187 | arusso | 2022-05-09 | 00:36:26 | MEX | 192.168.77.137 | 0 |
| 90 | gesparza | 2022-05-09 | 00:49:05 | CANADA | 192.168.87.201 | 0 |
| 97 | jreckley | 2022-05-09 | 02:49:23 | MEXICO | 192.168.32.231 | 1 |
| 32 | acook | 2022-05-09 | 02:52:02 | CANADA | 192.168.142.239 | 0 |
| 120 | tmitchel | 2022-05-09 | 02:58:17 | MEXICO | 192.168.134.62 | 0 |

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