File Permission and SQL(WEEK 4) Assignment: OLUSOLA Joseph

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Checking for file and working directory.

```
analyst@e59259fbf4a6:~$ ls && pwd
/home/analyst
analyst@e59259fbf4a6:~$ 
```

Creating, confirming and checking permissions for file1 and file2.

```
analyst@e59259fbf4a6:~$ touch file1; echo "" > file2
analyst@e59259fbf4a6:~$ ls
file1   file2
analyst@e59259fbf4a6:~$ ls -l
total 4
-rw-r--r-- 1 analyst research_team 0 Feb 23 10:35 file1
-rw-r--r-- 1 analyst research_team 1 Feb 23 10:35 file2
analyst@e59259fbf4a6:~$ 
```

Checking, Creating and Verifying user1 account.

```
analyst@22993c91e7b5:~$ tail -n 5 /etc/passwd
messagebus:x:104:105::/nonexistent:/usr/sbin/nologin
sshd:x:105:65534::/run/sshd:/usr/sbin/nologin
student:x:1000:1000::/home/student:/bin/bash
analyst:x:1001:1003::/home/analyst:/bin/sh
researcher2:x:1002:1003::/home/researcher2:/bin/sh
analyst@22993c91e7b5:~$ sudo useradd user1 -p user1passwd
analyst@22993c91e7b5:~$ tail -n 5 /etc/passwd
sshd:x:105:65534::/run/sshd:/usr/sbin/nologin
student:x:1000:1000::/home/student:/bin/bash
analyst:x:1001:1003::/home/analyst:/bin/sh
researcher2:x:1002:1003::/home/researcher2:/bin/sh
user1:x:1003:1005::/home/user1:/bin/sh
analyst@22993c91e7b5:~$ 
```

Checking , Creating and Verifying group1.

```
analyst@22993c91e7b5:~$ tail -n 5 /etc/group
analyst:x:1001:
researcher2:x:1002:
research_team:x:1003:
sales_team:x:1004:
user1:x:1005:
analyst@22993c91e7b5:~$ sudo addgroup group1
Adding group `group1' (GID 1006) ...
Done.
analyst@22993c91e7b5:~$ tail -n 5 /etc/group
researcher2:x:1002:
research_team:x:1003:
sales_team:x:1004:
user1:x:1005:
group1:x:1006:
analyst@22993c91e7b5:~$
```

Since user1 is "other users" in the machine, it already inherited read-only access to file1 by default.

```
analyst@a1643bb6787c:~$ ls -la
total 32
drwxr-xr-x 2 analyst research_team 4096 Feb 23 11:47 .
drwxr-xr-x 1 root    root          4096 Feb 23 11:08 ..
-rw------- 1 analyst research_team  371 Feb 23 12:03 .bash_history
-rw-r--r-- 1 analyst research_team  220 Apr 18  2019 .bash_logout
-rw-r--r-- 1 analyst research_team 3597 Feb 23 11:08 .bashrc
-rw-r--r-- 1 analyst research_team 3597 Feb 23 11:08 .profile
-rw-r--r-- 1 analyst research_team    0 Feb 23 11:47 file1
-rw-r--r-- 1 analyst research_team    1 Feb 23 11:47 file2
analyst@a1643bb6787c:~$
```

Verifying Permission, Changing Ownership and Permission of file2, and Reverifying Permission.

```
analyst@8280a548ef0d:~$ ls -la
total 32
drwxr-xr-x 2 analyst research_team 4096 Feb 23 12:17 .
drwxr-xr-x 1 root    root          4096 Feb 23 11:54 ..
-rw------- 1 analyst research_team  354 Feb 23 12:22 .bash_history
-rw-r--r-- 1 analyst research_team  220 Apr 18  2019 .bash_logout
-rw-r--r-- 1 analyst research_team 3597 Feb 23 11:54 .bashrc
-rw-r--r-- 1 analyst research_team 3597 Feb 23 11:54 .profile
-rw-r--r-- 1 analyst research_team    0 Feb 23 12:17 file1
-rw-r--r-- 1 analyst research_team    1 Feb 23 12:17 file2
analyst@8280a548ef0d:~$ sudo chown user1 file2; sudo chmod 744 file2; ls -la
total 32
drwxr-xr-x 2 analyst research_team 4096 Feb 23 12:17 .
drwxr-xr-x 1 root    root          4096 Feb 23 11:54 ..
-rw------- 1 analyst research_team  361 Feb 23 12:22 .bash_history
-rw-r--r-- 1 analyst research_team  220 Apr 18  2019 .bash_logout
-rw-r--r-- 1 analyst research_team 3597 Feb 23 11:54 .bashrc
-rw-r--r-- 1 analyst research_team 3597 Feb 23 11:54 .profile
-rw-r--r-- 1 analyst research_team    0 Feb 23 12:17 file1
-rwxr--r-- 1 user1   research_team    1 Feb 23 12:17 file2
analyst@8280a548ef0d:~$
```

Verifying group permission, Changing group ownership, and group permission for file1 and file2(group permission for file2 is read-only by default).

```
analyst@8280a548ef0d:~$ ls -la
total 32
drwxr-xr-x 2 analyst research_team 4096 Feb 23 12:17 .
drwxr-xr-x 1 root    root          4096 Feb 23 11:54 ..
-rw------- 1 analyst research_team  420 Feb 23 12:34 .bash_history
-rw-r--r-- 1 analyst research_team  220 Apr 18  2019 .bash_logout
-rw-r--r-- 1 analyst research_team 3597 Feb 23 11:54 .bashrc
-rw-r--r-- 1 analyst research_team 3597 Feb 23 11:54 .profile
-rw-r--r-- 1 analyst research_team    0 Feb 23 12:17 file1
-rwxr--r-- 1 user1   research_team    1 Feb 23 12:17 file2
analyst@8280a548ef0d:~$ sudo chgrp group1 file2; sudo chgrp group1 file1; sudo chmod
674 file1
analyst@8280a548ef0d:~$ ls -la
total 32
drwxr-xr-x 2 analyst research_team 4096 Feb 23 12:17 .
drwxr-xr-x 1 root    root          4096 Feb 23 11:54 ..
-rw------- 1 analyst research_team  498 Feb 23 12:40 .bash_history
-rw-r--r-- 1 analyst research_team  220 Apr 18  2019 .bash_logout
-rw-r--r-- 1 analyst research_team 3597 Feb 23 11:54 .bashrc
-rw-r--r-- 1 analyst research_team 3597 Feb 23 11:54 .profile
-rw-rwxr-- 1 analyst group1           0 Feb 23 12:17 file1
-rwxr--r-- 1 user1   group1           1 Feb 23 12:17 file2
analyst@8280a548ef0d:~$
```

SQL

Checking for columns in both machines and employees table

```
MariaDB [organization]> SELECT *
    -> FROM machines
    -> LIMIT 5;
+--------------+------------------+----------------+---------------+-------------+
| 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 |
+--------------+------------------+----------------+---------------+-------------+
5 rows in set (0.090 sec)

MariaDB [organization]> SELECT *
    -> FROM employees
    -> LIMIT 5;
+-------------+--------------+----------+-----------------+-------------+
| employee_id | device_id    | username | department      | office      |
+-------------+--------------+----------+-----------------+-------------+
|        1000 | a320b137c219 | elarson  | Marketing       | East-170    |
|        1001 | b239c825d303 | bmoreno  | Marketing       | Central-276 |
|        1002 | c116d593e558 | tshah    | Human Resources | North-434   |
|        1003 | d394e816f943 | sgilmore | Finance         | South-153   |
|        1004 | e218f877g788 | eraab    | Human Resources | South-127   |
+-------------+--------------+----------+-----------------+-------------+
5 rows in set (0.001 sec)

MariaDB [organization]>
```

Full details of the Left Join of Machines and Employees Tables

```
MariaDB [organization]> SELECT * FROM machines LEFT JOIN employees ON machines.employee_id = employees.employee_id LIMIT 10;
+--------------+------------------+----------------+---------------+-------------+-------------+--------------+----------+------------------------+----------+
| device_id    | operating_system | email_client   | OS_patch_date | employee_id | employee_id | device_id    | username | department             | office   |
+--------------+------------------+----------------+---------------+-------------+-------------+--------------+----------+------------------------+----------+
| a184b775c707 | OS 1             | Email Client 1 | 2021-09-01    |        1156 |        1156 | a184b775c707 | dellery  | Marketing              | East-417 |
| a192b174c940 | OS 2             | Email Client 1 | 2021-06-01    |        1052 |        1052 | a192b174c940 | jdarosa  | Marketing              | East-195 |
| a305b818c708 | OS 3             | Email Client 2 | 2021-06-01    |        1182 |        1182 | a305b818c708 | mmora    | Information Technology  | Central- |
| a317b635c465 | OS 1             | Email Client 2 | 2021-03-01    |        1130 |        1130 | a317b635c465 | tsnow    | Sales                  | Central- |
| a320b137c219 | OS 2             | Email Client 2 | 2021-03-01    |        1000 |        1000 | a320b137c219 | elarson  | Marketing              | East-170 |
| a398b471c573 | OS 3             | Email Client 2 | 2021-12-01    |           0 |        NULL | NULL         | NULL     | NULL                   | NULL     |
| a667b270c984 | OS 1             | Email Client 1 | 2021-03-01    |        1078 |        1078 | a667b270c984 | sharley  | Sales                  | North-41 |
| a821b452c176 | OS 2             | Email Client 2 | 2021-12-01    |        1104 |        1104 | a821b452c176 | mreed    | Information Technology  | West-288 |
| a998b568c863 | OS 3             | Email Client 1 | 2021-12-01    |        1026 |        1026 | a998b568c863 | apatel   | Human Resources        | West-320 |
| b157c491d493 | OS 2             | Email Client 1 | 2021-03-01    |           0 |        NULL | NULL         | NULL     | NULL                   | NULL     |
+--------------+------------------+----------------+---------------+-------------+-------------+--------------+----------+------------------------+----------+
10 rows in set (0.000 sec)
```