

# Setting up a development environment

# First steps with MySQL via command-line

(for GNU/Linux, Mac OS, and Windows users)

# Prerequisites

- We **assume** in this **mini-course** that you **have just installed MySQL** in your **machine**.
- I have a **set of slides** that **explain, step by step, how to install MySQL on Mac OS** by using **Homebrew package manager**.



Installing MySQL on Mac OS  
with Homebrew

# Course goals

- To provide **step-by-step** instructions on **MySQL management tasks** all developers need to know.
  - For **GNU/Linux, Mac OS, and Windows** developers.
- All **demonstrations** are shown by using the **command-line**.
  - **Command-prompt** (Windows)
  - **Shell** (GNU/Linux)
  - **Terminal** (Mac OS)

```
mysql> show tables;
+-----+
| Tables_in_hostelapp_db |
+-----+
| GUEST                    |
+-----+
1 row in set (0.01 sec)

mysql> describe GUEST;
+-----+-----+-----+-----+-----+-----+
| Field      | Type      | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| GUEST_ID   | bigint(20) | NO    | PRI | NULL    | auto_increment |
| FIRST_NAME | varchar(64) | YES   |     | NULL    |               |
| LAST_NAME  | varchar(64) | YES   |     | NULL    |               |
| EMAIL_ADDRESS | varchar(64) | YES   |     | NULL    |               |
| ADDRESS    | varchar(64) | YES   |     | NULL    |               |
| COUNTRY    | varchar(32) | YES   |     | NULL    |               |
| STATE      | varchar(12) | YES   |     | NULL    |               |
| PHONE_NUMBER | varchar(24) | YES   |     | NULL    |               |
+-----+-----+-----+-----+-----+-----+
8 rows in set (0.09 sec)

mysql> GRANT ALL PRIVILEGES ON hostelapp_db.* TO 'florentino'@'%';
```

# All commands used in this course

Commands	
mysql -V	show tables
mysqladmin -u root password '123456'	describe GUEST
mysql -uroot -p	SELECT * FROM GUEST
show databases	SELECT first_name, last_name, email_address FROM GUEST
create database hostelapp_db	Crtl+l
quit	CREATE USER 'florentino'@'%' IDENTIFIED BY 'secret'
cat hostelApp_Schema.sql	GRANT ALL PRIVILEGES ON hostelapp_db.* TO 'florentino'@'%' ;
mysql -uroot -p hostelapp_db < HostelApp_Schema.sql	GRANT ALL PRIVILEGES ON hostelapp_db.* TO 'florentino'@'localhost' ;
use hostelapp_db	mysql -uflorentino -p

# Creating a database in MySQL

**Lecture:** Creating a database in MySQL

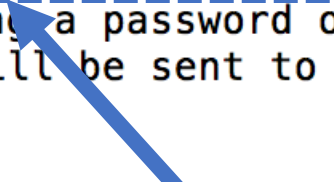
**Module:** First steps with MySQL via command-line

```
192:~ pagliares$ mysql -V  
mysql Ver 8.0.18 for osx10_13 on x86_64 (Homebrew)  
192:~ pagliares$
```



**Verifying the version that is installed on your local machine.**

```
192:~ pagliares$ mysqladmin -u root password '123456'  
mysqladmin: [Warning] Using a password on the command line interface can be insecure.  
Warning: Since password will be sent to server in plain text, use ssl connection to ensure password safety.  
192:~ pagliares$
```



Just after installing MySQL, we need to configure the root password. Here, we are configuring the password for the user `root` with the command `mysqladmin` (alternative way to the command `mysql_secure_installation` suggested for Mac OS users using Homebrew).



# Alternative way to change root password

```
mysql> ALTER USER 'root'@'localhost' IDENTIFIED BY '12345';  
Query OK, 0 rows affected (0.01 sec)
```

If the previous command didn't work, log into mysql with the root user account and from within the MySQL prompt, try this command (tested on MySQL 8.0.35 for MacOS).

```
192:~ pagliares$ mysql -uroot -p
```

```
Enter password:
```

```
Welcome to the MySQL monitor.  Commands end with ; or \g.
```

```
Your MySQL connection id is 5
```

```
Server version: 8.0.18 Homebrew
```

```
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```

```
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owners.
```

```
Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.
```

```
mysql> █
```



**Logging into MySQL with the root  
account and password just defined.**

```
192:~ pagliares$ mysql -uroot -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 9
Server version: 8.0.18 Homebrew
```

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Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

```
mysql> show databases;
+-----+
| Database                |
+-----+
| information_schema       |
| mysql                    |
| performance_schema       |
| sys                      |
+-----+
4 rows in set (0.01 sec)

mysql> █
```

This command shows the databases managed by MySQL. These are internal databases used by MySQL. As we create ours, they are gonna be listed here as well.

```
Rodrigos-MacBook-Air:Desktop pagliares$ mysql -u root -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 16
Server version: 8.0.18 Homebrew
```

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Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

```
mysql> show databases;
```

Database
information_schema
mysql
performance_schema
sys

```
4 rows in set (0.03 sec)
```

```
mysql> create database hostelapp_db;
```

```
Query OK, 1 row affected (0.01 sec)
```

```
mysql> █
```

The command create database is used in MySQL to create a new database. We name it hostelapp\_db



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Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

```
mysql> show databases;
```

Database
information_schema
mysql
performance_schema
sys

4 rows in set (0.03 sec)

```
mysql> create database hostelapp_db;
```

Query OK, 1 row affected (0.01 sec)

```
mysql> show databases;
```

Database
hostelapp_db
information_schema
mysql
performance_schema
sys

5 rows in set (0.00 sec)

```
mysql> █
```

The **command** show databases **confirms** the **creation** of the hostelapp\_db database.

owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

```
mysql> show databases;
```

Database
information_schema
mysql
performance_schema
sys

4 rows in set (0.03 sec)

```
mysql> create database hostelapp_db;
```

Query OK, 1 row affected (0.01 sec)

```
mysql> show databases;
```

Database
hostelapp_db
information_schema
mysql
performance_schema
sys

5 rows in set (0.00 sec)

```
mysql> quit;
```

Bye

Rodrigos-MacBook-Air:Desktop pagliares\$

**quit or exit leaves the MySQL prompt.**

# Summary: Shell & MySQL commands

ID	Command	Meaning
01	<code>mysql -V</code>	<b>Shows</b> the current <b>version</b> of <b>MySQL</b> installed
02	<code>mysqladmin -u root password '123456'</code>	Sets <b>123456</b> as the <b>password</b> for the user <b>root</b> .
03	<code>mysql -uroot -p</code>	<b>Prompts</b> for the <b>root</b> password in order to login into <b>MySQL</b>
04	<code>show databases</code>	When <b>logged</b> into <b>MySQL</b> , this <b>command</b> shows the <b>databases</b> managed by <b>MySQL</b>
05	<code>create database hostelapp_db</code>	When <b>logged</b> into <b>MySQL</b> , this <b>command</b> creates a <b>database</b> called <code>hostelapp_db</code> . You can <b>confirm</b> the <b>creation</b> with the <b>command</b> <code>show databases</code>
06	<code>quit</code>	<b>When</b> <b>logged</b> into <b>MySQL</b> , this <b>command</b> returns the <b>prompt</b> to the <b>shell</b> ( <b>terminal</b> ).

# Creating a table in MySQL and populating it with data

Lecture: Creating a table in MySQL and populating it with data

Module: First steps with MySQL via command-line





HostelApp\_Guest\_  
Data.sql



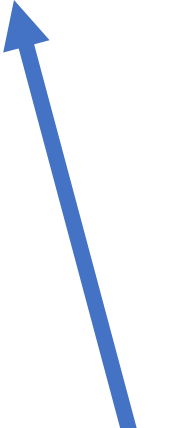
HostelApp\_Schem  
a.sql

`source_code/HostelApp_Guest_Data.sql`

`source_code/HostelApp_Schema.sql`

**Create the table GUEST**

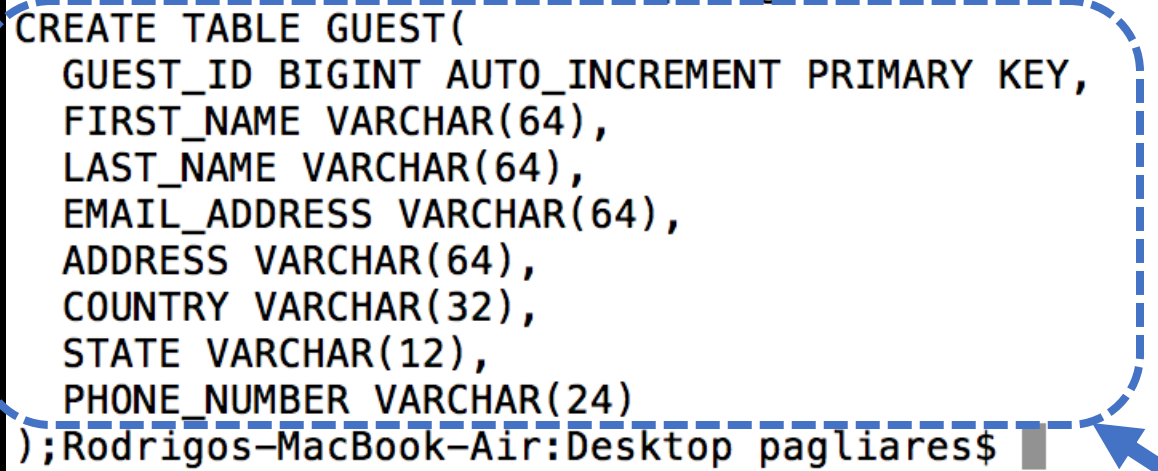
```
Rodrigos-MacBook-Air:Desktop pagliares$  
Rodrigos-MacBook-Air:Desktop pagliares$ cat HostelApp_Schema.sql  
CREATE TABLE GUEST(  
  GUEST_ID BIGINT AUTO_INCREMENT PRIMARY KEY,  
  FIRST_NAME VARCHAR(64),  
  LAST_NAME VARCHAR(64),  
  EMAIL_ADDRESS VARCHAR(64),  
  ADDRESS VARCHAR(64),  
  COUNTRY VARCHAR(32),  
  STATE VARCHAR(12),  
  PHONE_NUMBER VARCHAR(24)  
);Rodrigos-MacBook-Air:Desktop pagliares$
```



The Unix command `cat` shows the contents of a file.


`source_code/HostelApp_Schema.sql`

```
Rodrigos-MacBook-Air:Desktop pagliares$  
Rodrigos-MacBook-Air:Desktop pagliares$ cat HostelApp_Schema.sql  
CREATE TABLE GUEST(  
  GUEST_ID BIGINT AUTO_INCREMENT PRIMARY KEY,  
  FIRST_NAME VARCHAR(64),  
  LAST_NAME VARCHAR(64),  
  EMAIL_ADDRESS VARCHAR(64),  
  ADDRESS VARCHAR(64),  
  COUNTRY VARCHAR(32),  
  STATE VARCHAR(12),  
  PHONE_NUMBER VARCHAR(24)  
);Rodrigos-MacBook-Air:Desktop pagliares$
```



The SQL script file named `HostelApp_Schema.sql` has the DDL description of a database table named `GUEST`.

```
Rodrigos-MacBook-Air:Desktop pagliares$ ls -l
total 24
-rwxr--r--@ 1 pagliares  staff  4847 May 20  2020 HostelApp_Guest_Data.sql
-rwxr--r--@ 1 pagliares  staff   243 Dec 20 18:16 HostelApp_Schema.sql
Rodrigos-MacBook-Air:Desktop pagliares$
Rodrigos-MacBook-Air:Desktop pagliares$ mysql -u root -p hostelapp_db < HostelApp_Schema.sql
Enter password:
Rodrigos-MacBook-Air:Desktop pagliares$ █
```



**This command executes, as user root, the contents of the script file HostelApp\_Schema.sql into the database hostelapp\_db created in the previous lecture.**

**Populate the table GUEST with fake data**

```
Rodrigos-MacBook-Air:Desktop pagliares$  
Rodrigos-MacBook-Air:Desktop pagliares$ cat HostelApp_Guest_Data.sql  
INSERT INTO GUEST (LAST_NAME, FIRST_NAME, EMAIL_ADDRESS, COUNTRY, ADDRESS, STATE, PHONE_NUMBER)  
VALUES('Gatsby', 'Jay', 'jay@gmail.com', 'United States', '1187 Fleming Street', 'AL', '+1-205-555-0178');  
  
INSERT INTO GUEST (LAST_NAME, FIRST_NAME, EMAIL_ADDRESS, COUNTRY, ADDRESS, STATE, PHONE_NUMBER)  
VALUES('Caulfield', 'Holden', 'holden@mit.edu', 'United States', '3998 Davis Lane', 'CO', '+1-303-555-0137');  
  
INSERT INTO GUEST (LAST_NAME, FIRST_NAME, EMAIL_ADDRESS, COUNTRY, ADDRESS, STATE, PHONE_NUMBER)  
VALUES('Humbert', 'Humbert', 'humbert@gmail.com', 'United States', '499 McKinley Avenue', 'CO', '+1-303-555-0156');  
  
INSERT INTO GUEST (LAST_NAME, FIRST_NAME, EMAIL_ADDRESS, COUNTRY, ADDRESS, STATE, PHONE_NUMBER)  
VALUES('Bloom', 'Molly', 'molly@microsoft.com', 'United States', '4206 Mulberry Avenue', 'AR', '+1-501-555-0120');  
  
INSERT INTO GUEST (LAST_NAME, FIRST_NAME, EMAIL_ADDRESS, COUNTRY, ADDRESS, STATE, PHONE_NUMBER)  
VALUES('Finch', 'Atticus', 'finch@hotmail.com', 'United States', '3566 Parkway Drive', 'AZ', '+1-480-555-0198');  
  
INSERT INTO GUEST (LAST_NAME, FIRST_NAME, EMAIL_ADDRESS, COUNTRY, ADDRESS, STATE, PHONE_NUMBER)  
VALUES('Bloom', 'Molly', 'molly@microsoft.com', 'United States', '4206 Mulberry Avenue', 'AR', '+1-501-555-0120');
```

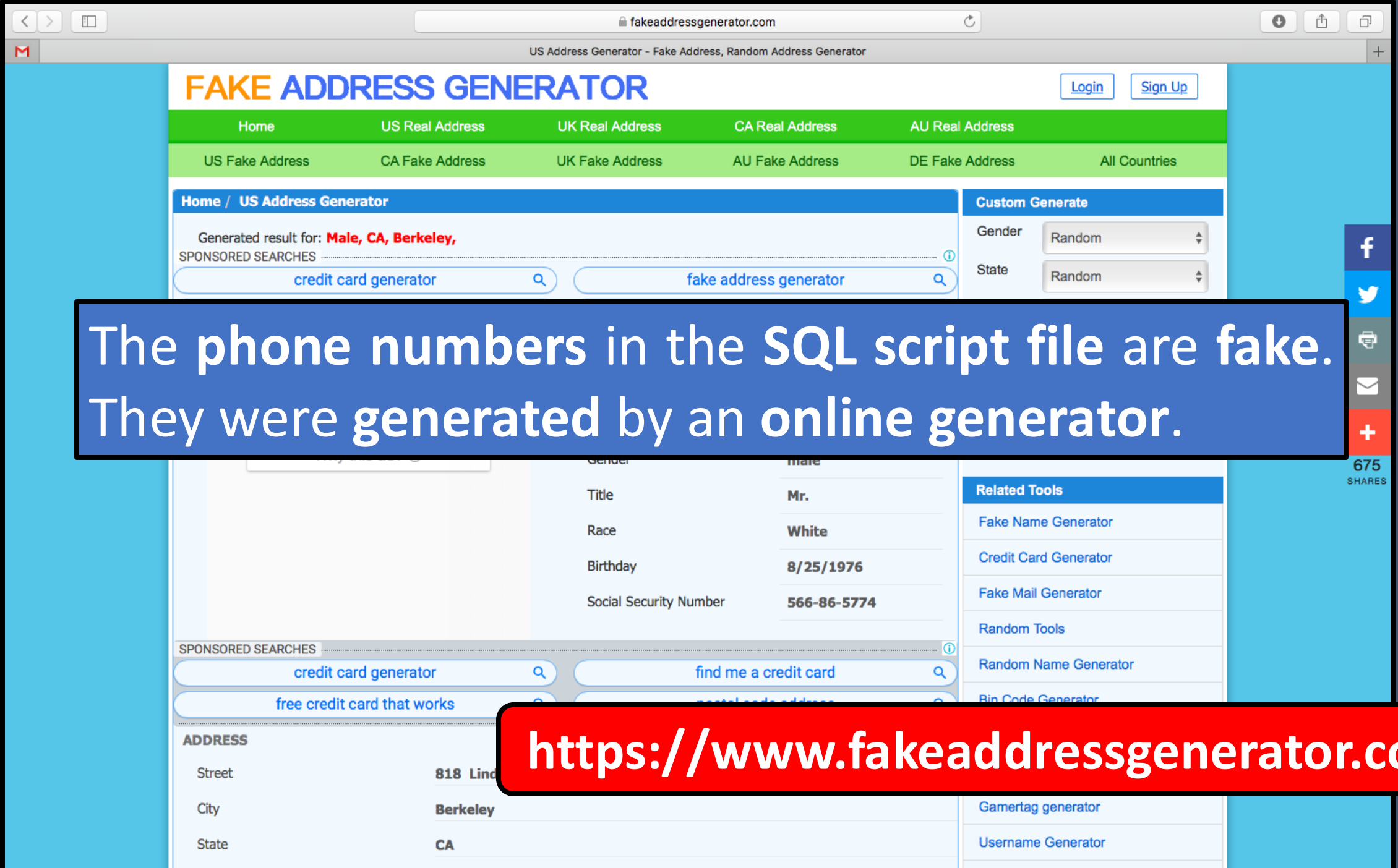
The SQL script file `HostelApp_Guest_Data.sql` contains data of fictitious guests of the Hostel Sparkling Water to be inserted into the database via SQL.

[source\\_code/HostelApp\\_Guest\\_Data.sql](#)

```
Rodrigos-MacBook-Air:Desktop pagliares$  
Rodrigos-MacBook-Air:Desktop pagliares$ cat HostelApp_Guest_Data.sql  
INSERT INTO GUEST (LAST_NAME, FIRST_NAME, EMAIL_ADDRESS, COUNTRY, ADDRESS, STATE, PHONE_NUMBER)  
VALUES('Gatsby', 'Jay', 'jay@gmail.com', 'United States', '1187 Fleming Street', 'AL', '+1-205-555-0178');  
  
INSERT INTO GUEST (LAST_NAME, FIRST_NAME, EMAIL_ADDRESS, COUNTRY, ADDRESS, STATE, PHONE_NUMBER)  
VALUES('Caulfield', 'Holden', 'holden@mit.edu', 'United States', '3998 Davis Lane', 'CO', '+1-303-555-0137');  
  
INSERT INTO GUEST (LAST_NAME, FIRST_NAME, EMAIL_ADDRESS, COUNTRY, ADDRESS, STATE, PHONE_NUMBER)  
VALUES('Humbert', 'Humbert', 'humbert@gmail.com', 'United States', '499 McKinley Avenue', 'CO', '+1-303-555-0156');  
  
INSERT INTO GUEST (LAST_NAME, FIRST_NAME, EMAIL_ADDRESS, COUNTRY, ADDRESS, STATE, PHONE_NUMBER)  
VALUES('Bloom', 'Leo', 'bloom@stanford.edu', 'United States', '1234 Elm Street', 'CA', '+1-415-555-0123');  
  
INSERT INTO GUEST (LAST_NAME, FIRST_NAME, EMAIL_ADDRESS, COUNTRY, ADDRESS, STATE, PHONE_NUMBER)  
VALUES('Angstrom', 'Eric', 'angstrom@stanford.edu', 'United States', '5678 Oak Avenue', 'CA', '+1-415-555-0135');  
  
INSERT INTO GUEST (LAST_NAME, FIRST_NAME, EMAIL_ADDRESS, COUNTRY, ADDRESS, STATE, PHONE_NUMBER)  
VALUES('Holmes', 'Sherlock', 'holmes@aol.com', 'United States', '1395 Dola Mine Road', 'AK', '+1-907-555-0187');  
  
INSERT INTO GUEST (LAST_NAME, FIRST_NAME, EMAIL_ADDRESS, COUNTRY, ADDRESS, STATE, PHONE_NUMBER)  
VALUES('Finch', 'Atticus', 'finch@hotmail.com', 'United States', '3566 Parkway Drive', 'AZ', '+1-480-555-0198');  
  
INSERT INTO GUEST (LAST_NAME, FIRST_NAME, EMAIL_ADDRESS, COUNTRY, ADDRESS, STATE, PHONE_NUMBER)  
VALUES('Bloom', 'Molly', 'molly@microsoft.com', 'United States', '4206 Mulberry Avenue', 'AR', '+1-501-555-0120');  
  
INSERT INTO GUEST (LAST_NAME, FIRST_NAME, EMAIL_ADDRESS, COUNTRY, ADDRESS, STATE, PHONE_NUMBER)  
VALUES('Dedalus', 'Stephen', 'dedalus@apple.com', 'United States', '359 Hide A Way Road', 'CA', '+1-510-555-0121');
```

All names in the script are literature characters.





The phone numbers in the SQL script file are fake. They were generated by an online generator.

<https://www.fakeaddressgenerator.com>

The addresses in the SQL Script file are also fake.  
They were generated by an online generator

SPONSORED SEARCHES

<input type="text" value="free fake phone number"/>	<input type="text" value="free number for verification"/>
<input type="text" value="mobile phone verification"/>	<input type="text" value="get number usa free"/>

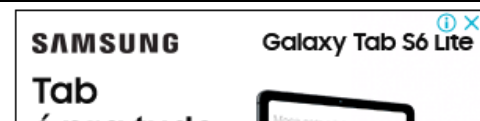
## Fake US Telephone Numbers, United States

Local (US)	International (US)
202-555-0163	+1-202-555-0163
202-555-0166	+1-202-555-0166
202-555-0112	+1-202-555-0112
202-555-0160	+1-202-555-0160

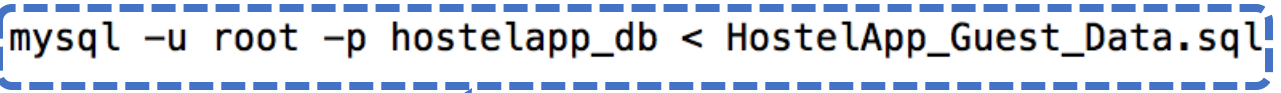
SPONSORED SEARCHES

<input type="text" value="free number for verification"/>
<input type="text" value="free fake phone number"/>
<input type="text" value="get number usa free"/>

<https://fakenumbers.org>



```
Rodrigos-MacBook-Air:Desktop pagliares$ ls -l
total 24
-rwxr--r--@ 1 pagliares  staff  4847 May 20  2020 HostelApp_Guest_Data.sql
-rwxr--r--@ 1 pagliares  staff   243 Dec 20 18:16 HostelApp_Schema.sql
Rodrigos-MacBook-Air:Desktop pagliares$
Rodrigos-MacBook-Air:Desktop pagliares$ mysql -u root -p hostelapp_db < HostelApp_Guest_Data.sql
Enter password:
Rodrigos-MacBook-Air:Desktop pagliares$ █
```



This command executes, as user root, the contents of the **script file** HostelApp\_Guest\_Data.sql into the **database** hostelapp\_db created in the **previous lecture** in order to **populate** it's **GUEST** table.

```
Rodrigos-MacBook-Air:Desktop pagliares$ mysql -uroot -p  
Enter password:  
Welcome to the MySQL monitor.  Commands end with ; or \g.  
Your MySQL connection id is 20  
Server version: 8.0.18 Homebrew
```

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Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

```
mysql> █
```

Let's log in to MySQL to see the effects of running the SQL script files.

```
Rodrigos-MacBook-Air:Desktop pagliares$ mysql -uroot -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 20
Server version: 8.0.18 Homebrew
```

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Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

```
mysql> show databases;
+-----+
| Database |
+-----+
| hostelapp_db |
| information_schema |
| mysql |
| performance_schema |
| sys |
+-----+
5 rows in set (0.01 sec)

mysql> █
```



The databases being managed by MySQL at this moment.

```
Rodrigos-MacBook-Air:Desktop pagliares$ mysql -uroot -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 20
Server version: 8.0.18 Homebrew
```

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Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

```
mysql> show databases;
```

Database
hostelapp_db
information_schema
mysql
performance_schema
sys

5 rows in set (0.01 sec)

Let's select our database of interest.

```
mysql> use hostelapp_db;
```

Reading table information for completion of table and column names  
You can turn off this feature to get a quicker startup with -A

Database changed

```
mysql> █
```

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Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

```
mysql> show databases;
```

Database
hostelapp_db
information_schema
mysql
performance_schema
sys

5 rows in set (0.01 sec)

```
mysql> use hostelapp_db;
```

Reading table information for completion of table and column names  
You can turn off this feature to get a quicker startup with -A

Database changed

```
mysql> show tables;
```

Tables_in_hostelapp_db
GUEST

1 row in set (0.00 sec)

```
mysql> █
```

Let's confirm the creation of the GUEST table with the show tables command.

```
+-----+
5 rows in set (0.01 sec)
```

```
mysql> use hostelapp_db;
```

Reading table information for completion of table and column names  
You can turn off this feature to get a quicker startup with -A

Database changed

```
mysql> show tables;
```

```
+-----+
| Tables_in_hostelapp_db |
+-----+
| GUEST                   |
+-----+
1 row in set (0.00 sec)
```

The MySQL's `describe` command shows metadata about the table `GUEST`.

```
mysql> describe GUEST;
```

Field	Type	Null	Key	Default	Extra
GUEST_ID	bigint(20)	NO	PRI	NULL	auto_increment
FIRST_NAME	varchar(64)	YES		NULL	
LAST_NAME	varchar(64)	YES		NULL	
EMAIL_ADDRESS	varchar(64)	YES		NULL	
ADDRESS	varchar(64)	YES		NULL	
COUNTRY	varchar(32)	YES		NULL	
STATE	varchar(12)	YES		NULL	
PHONE_NUMBER	varchar(24)	YES		NULL	

```
8 rows in set (0.05 sec)
```

```
mysql> █
```



```
mysql> SELECT * FROM GUEST;
```

GUEST_ID	FIRST_NAME	LAST_NAME	EMAIL_ADDRESS	ADDRESS	COUNTRY
STATE	PHONE_NUMBER				
AL	1   Jay	Gatsby			
	+1-205-555-0178				
CO	2   Holden	Caulfield			
	+1-303-555-0137				
CO	3   Humbert	Humbert			
	+1-303-555-0156				
FL	4   Leopold	Bloom	bloom@blogs.com	4239 Marigold Lane	United States
	+1-561-555-0145				
FL	5   Rabbit	Angstrom	angstrom@hotmail.com	4306 Jacobs Street	United States
	+1-561-555-0135				
AK	6   Sherlock	Holmes	holmes@aol.com	1395 Dola Mine Road	United States
	+1-907-555-0187				
AZ	7   Atticus	Finch	finch@hotmail.com	3566 Parkway Drive	United States
	+1-480-555-0198				
AR	8   Molly	Bloom	molly@microsoft.com	4206 Mulberry Avenue	United States
	+1-501-555-0120				
CA	9   Stephen	Dedalus	dedalus@apple.com	359 Hide A Way Road	United States
	+1-510-555-0183				
CT	10   Lily	Bart	bart@gmail.com	639 Airplane Avenue	United States
	+1-860-555-0154				
IL	11   Holly	Golightly	golightly@gmail.com	3786 Scenic Way	United States
	+1-847-555-0127				
HI	12   Gregor	Samsa	samsa@yahoo.com	1833 Don Jackson Lane	United States
	+1-808-555-0162				

Let's confirm that the table **GUEST** was populated with the fake data from the SQL script file

```
mysql> SELECT FIRST_NAME, LAST_NAME, EMAIL_ADDRESS FROM GUEST
```

FIRST_NAME	LAST_NAME	EMAIL_ADDRESS
Jay	Gatsby	jay@gmail.com
Holden	Caulfield	holden@mit.edu
Humbert	Humbert	humbert@gmail.com
Leopold	Bloom	bloom@blogs.com
Rabbit	Angstrom	angstrom@hotmail.com
Sherlock	Holmes	holmes@aol.com
Atticus	Finch	finch@hotmail.com
Molly	Bloom	molly@microsoft.com
Stephen	Dedalus	dedalus@apple.com
Lily	Bart	bart@gmail.com
Holly	Golightly	golightly@gmail.com
Gregor	Samsa	samsa@yahoo.com
Aureliano	Buendia	buendia@yahoo.com
Clarissa	Dalloway	dalloway@gmail.com
Ignatius	Reilly	reilly@gmail.com
George	Smiley	smiley@gmail.com
Winnie	Pooh	pooh@yahoo.com
Bigger	Thomas	thomas@hotmail.com
Nick	Adams	adams@gmail.com
Scarlett	OHara	ohara@gmail.com
Scout	Finch	finch@gmail.com
Philip	Marlowe	marlowe@hotmail.com
Cosimo	di Rondo	dirondo@gmail.com

```
23 rows in set (0.00 sec)
```

```
mysql> █
```

Let's restrict the results of our SQL query.

# Summary: Unix, MySQL and SQL commands

ID	Command	Meaning
01	<code>cat hostelApp_Schema.sql</code>	Shows the <b>contents</b> of the <b>file</b>
02	<code>mysql -uroot -p hostelapp_db &lt; HostelApp_Schema.sql</code>	<b>Executes</b> , as user <b>root</b> , the <b>contents</b> of the <b>script file</b> <code>HostelApp_Schema.sql</code> into the <b>database</b> <code>hostelapp_db</code>
03	<code>use hostelapp_db</code>	<b>Selects</b> the <code>hostelapp_db</code> to be used as <b>target</b> of <b>SQL queries</b> .
04	<code>show tables</code>	<b>Show all</b> the <b>tables</b> for a <b>database selected</b> with the <code>use</code> command (Row 4 in this table).
05	<code>describe GUEST</code>	<b>Shows metadata</b> about the <b>table GUEST</b> .
06	<code>SELECT * FROM GUEST</code>	<b>Retrieves all rows</b> of <b>data</b> for <b>all columns</b> in table <b>GUEST</b> .
07	<code>SELECT first_name, last_name, email_address FROM GUEST</code>	<b>Retrieves all rows</b> of <b>data</b> for the <b>columns</b> <code>first_name</code> , <code>last_name</code> , <code>email_address</code> in table <b>GUEST</b> .

# Creating and granting privileges to a user in MySQL

Lecture: Creating and granting privileges to a user in MySQL

Module: First steps with MySQL via command-line

```
Last login: Mon Dec 21 09:08:23 on console
Rodrigo@MacBook-Air:~ pagliares$ mysql -uroot -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 8
Server version: 8.0.18 Homebrew

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owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current
statement.

mysql> █
```

Let's access the MySQL monitor in order to create a new database user with enough privileges to manage the hostel database (hostelapp\_db). We are doing this, since it is not a good practice, for security reasons, to use the root user to manage a specific database.

```
Last login: Mon Dec 21 09:08:23 on console
Rodrigos-MacBook-Air:~ pagliares$ mysql -uroot -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 8
Server version: 8.0.18 Homebrew
```

```
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```

```
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affiliates. Other names may be trademarks of their respective
owners.
```

```
Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.
```

```
mysql> show databases;
```

Database
hostelapp_db
information_schema
mysql
performance_schema
sys

```
5 rows in set (0.17 sec)
```

```
mysql> █
```


As you can see, the root user has access to ALL databases managed by MySQL.

mysql> █

We can **hit Ctrl+L** to **clear the console**

```
mysql> CREATE USER 'florentino'@'%' IDENTIFIED BY 'secret';  
Query OK, 0 rows affected (0.26 sec)
```

```
mysql> █
```



Let's create the user florentino with password secret. This user will be responsible to manage the hostel database.



```
mysql> CREATE USER 'florentino'@'%' IDENTIFIED BY 'secret';  
Query OK, 0 rows affected (0.26 sec)
```

```
mysql> GRANT ALL PRIVILEGES ON hostelapp_db.* TO 'florentino'@'%';  
Query OK, 0 rows affected (0.03 sec)
```

```
mysql> █
```




We need to grant all privileges (create/alter tables, insert and update data, etc) to the user Florentino to manage the hostel database.

```
mysql> CREATE USER 'florentino'@'%' IDENTIFIED BY 'secret';  
Query OK, 0 rows affected (0.26 sec)
```

```
mysql> GRANT ALL PRIVILEGES ON hostelapp_db.* TO 'florentino'@'%' ;  
Query OK, 0 rows affected (0.03 sec)
```

```
mysql> █
```



% means any host. In this example, the user **florentino** is able to log in on MySQL monitor **locally** or from a **remote location** (using the IP address or DNS name of the server with MySQL). If you want to **restrict access to localhost only**, replace % with `localhost`.

```
mysql> CREATE USER 'florentino'@'%' IDENTIFIED BY 'secret';  
Query OK, 0 rows affected (0.26 sec)  
  
mysql> GRANT ALL PRIVILEGES ON hostelapp_db.* TO 'florentino'@'%';  
Query OK, 0 rows affected (0.03 sec)  
  
mysql> █
```

**NOTE:** Before MySQL 8, we could create a user and grant privileges to him/her with a single command:

```
GRANT ALL PRIVILEGES ON hostelapp_db.* TO 'florentino'@'%' IDENTIFIED BY 'secret';
```

For security reasons, this is not possible anymore.

```
mysql> CREATE USER 'florentino'@'%' IDENTIFIED BY 'secret';  
Query OK, 0 rows affected (0.26 sec)  
  
mysql> GRANT ALL PRIVILEGES ON hostelapp_db.* TO 'florentino'@'%';  
Query OK, 0 rows affected (0.03 sec)  
  
mysql> quit;  
Bye  
Rodrigos-MacBook-Air:~ pagliares$
```



Let's exit the MySQL monitor in order to test our newly created user.

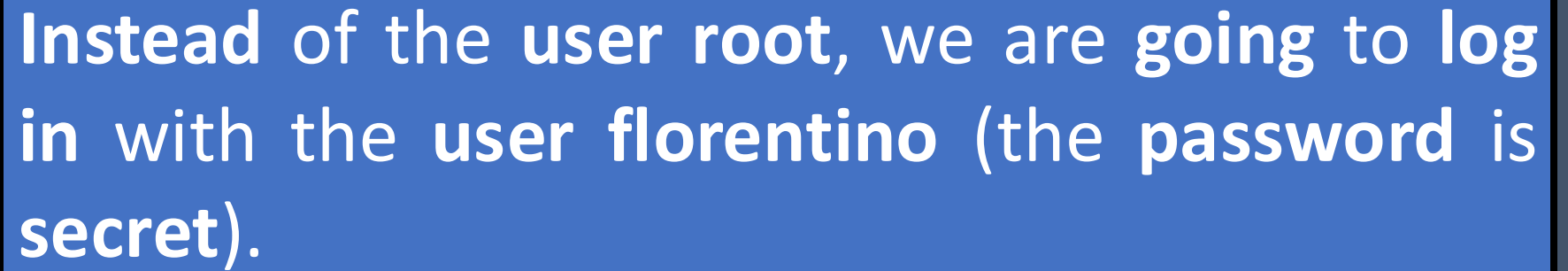
```
Rodrigos-MacBook-Air:~ pagliaress$ mysql -uflorentino -p  
Enter password:  
Welcome to the MySQL monitor.  Commands end with ; or \g.  
Your MySQL connection id is 13  
Server version: 8.0.18 Homebrew
```

```
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```

```
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owners.
```

```
Type 'help;' or '\h' for
```

```
mysql> █
```



**Instead of the user root, we are going to log in with the user florentino (the password is secret).**

```
Rodrigos-MacBook-Air:~ pagliares$ mysql -uflorentino -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 13
Server version: 8.0.18 Homebrew
```

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Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

```
mysql> show databases;
+-----+
| Database |
+-----+
| hostelapp_db |
| information_schema |
+-----+
2 rows in set (0.12 sec)

mysql> █
```

**Notice that the user florentino does not have access to all databases the user root has.**

```
mysql> use hostelapp_db;
```

Reading table information for completion of table and column names

You can turn off this feature to get a quicker startup with -A

Database changed

```
mysql> █
```



Select the hostelapp\_db

```
mysql> use hostelapp_db;  
Reading table information for completion of table and column names  
You can turn off this feature to get a quicker startup with -A
```

Database changed

```
mysql> show tables;
```

Tables_in_hostelapp_db
GUEST

1 row in set (0.00 sec)

```
mysql> █
```

The **command** `show tables` exhibits the tables in the database. In our example, we have only one table named **GUEST**.



```
mysql> show tables;
```

Tables_in_hostelapp_db
GUEST

```
1 row in set (0.01 sec)
```

```
mysql> describe GUEST;
```

Field	Type	Null	Key	Default	Extra
GUEST_ID	bigint(20)	NO	PRI	NULL	auto_increment
FIRST_NAME	varchar(64)	YES		NULL	
LAST_NAME	varchar(64)	YES		NULL	
EMAIL_ADDRESS	varchar(64)	YES		NULL	
ADDRESS	varchar(64)	YES		NULL	
COUNTRY	varchar(32)	YES		NULL	
STATE	varchar(12)	YES		NULL	
PHONE_NUMBER	varchar(24)	YES		NULL	

```
8 rows in set (0.09 sec)
```

```
mysql> █
```

The MySQL's `describe` command shows metadata about the table `GUEST`.

```
mysql> SELECT first_name, last_name, email_address FROM GUEST;
```

first_name	last_name	email_address
Jay	Gatsby	jay@gmail.com
Holden	Caulfield	holden@mit.edu
Humbert	Humbert	humbert@gmail.com
Leopold	Bloom	bloom@blogs.com
Rabbit	Angstrom	angstrom@hotmail.com
Sherlock	Holmes	holmes@aol.com
Atticus	Finch	finch@hotmail.com
Molly	Bloom	molly@microsoft.com
Stephen	Dedalus	dedalus@apple.com
Lily	Bart	bart@gmail.com
Holly	Golightly	golightly@gmail.com
Gregor	Samsa	samsa@yahoo.com
Aureliano	Buendia	buendia@yahoo.com
Clarissa	Dalloway	dalloway@gmail.com
Ignatius	Reilly	reilly@gmail.com
George	Smiley	smiley@gmail.com
Winnie	Pooh	pooh@yahoo.com
Bigger	Thomas	thomas@hotmail.com
Nick	Adams	adams@gmail.com
Scarlett	OHara	ohara@gmail.com
Scout	Finch	finch@gmail.com
Philip	Marlowe	marlowe@hotmail.com
Cosimo	di Rondo	dirondo@gmail.com

```
23 rows in set (0.03 sec)
```

Let's restrict the results of our SQL query

# Summary: Unix, MySQL and SQL commands

ID	Command	Meaning
01	<code>Crtl+l</code>	<b>Clears the console</b> of the <b>MySQL monitor</b>
02	<code>CREATE USER 'florentino'@'%' IDENTIFIED BY 'secret'</code>	<b>Creates a user</b> named <code>florentino</code> with <b>password</b> equals to <code>secret</code> .
03	<code>GRANT ALL PRIVILEGES ON hostelapp_db.* TO 'florentino'@'%';</code>	<b>Grants all privileges (create/alter tables, insert and update data, etc)</b> to the <b>user</b> <code>florentino</code> to <b>manage the hostel database</b> from <b>anywhere</b> .
04	<code>GRANT ALL PRIVILEGES ON hostelapp_db.* TO 'florentino'@'localhost';</code>	<b>Grants all privileges (create/alter tables, insert and update data, etc)</b> to the <b>user</b> <code>florentino</code> to <b>manage the hostel database</b> from the <b>same machine MySQL is installed (localhost)</b> .
05	<code>mysql -uflorentino -p</code>	<b>Logs in to MySQL monitor</b> with the <b>user</b> <code>florentino</code>

Questions?