

# Jesse's Bootcamp

- 1) Go to <https://dev.mysql.com/downloads/mysql/>
  - a) Create Oracle account
  - b) Download **Mac OS X 10.12 (x86, 64-bit), DMG Archive**
- 2) Install the dmg that you just downloaded
  - a) Go to the drive and install the database
  - b) **SAVE THE PASSWORD!!!!!!!!!!**
    - i) Otherwise prepare to reinstall everything
  - c) Press “cmd + space” and type in “mysql”
  - d) Press “Start MySql Server”
- 3) Go to the terminal
  - a) Copy the following: `PATH="/usr/local/mysql/bin:$PATH"`
    - i) This lets the terminal know where you have executable binaries and allows you to type `mysql` in the terminal instead of `/usr/local/mysql/bin/mysql`
  - b) Type `mysql -u root -p`
  - c) Paste the password you saved and press enter
- 4) Congrats you got MySQL up!
- 5) Change your password `ALTER USER 'root'@'localhost' IDENTIFIED BY 'admin';`
  - a) Feel free to change `admin` to anything you prefer

- 6) Let's explore the databases that we currently have: `show databases;`
- 7) Create a new database: `create database bootcamp;`
- 8) Check that it was created: `show databases;`
- 9) Select the database that you just created: `use bootcamp;`
- 10) See if there are any tables in the database: `show tables;`
  - a) There shouldn't be any.
  - b) Let's create one: `CREATE TABLE first_table (name VARCHAR(20), AGE INTEGER);`
    - i) In SQL column and tables names follow the underscore nomenclature
  - c) Check out some of the other datatypes here:  
<https://dev.mysql.com/doc/refman/5.7/en/data-type-overview.html>
- 11) Let's query the table: `SELECT * FROM first_table;`
  - a) Notice that it's empty because you haven't added anything to it yet
  - b) Let's add a row: `INSERT INTO first_table (name, age) VALUES ("Jesse", 24);`
  - c) Query the table again: `SELECT * FROM first_table;`
    - i) You should now see what you stored in the table!
- 12) Let's use a GUI
  - a) Download DB Visualizer here: <https://www.dbvis.com/download/>
- 13) Connect to your MySQL instance
  - a) Create a new connection to: `localhost:3306`
  - b) Username is: `root`
  - c) Password is whatever you made it

~~~ So you say you want to do data science eh? Let's get some data! ~~~

- 14) Go to: <https://www.data.gov/>

a) Download some data, for example:

[http://www.nts.gov/investigations/data/Documents/datafiles/table10\\_2014.csv](http://www.nts.gov/investigations/data/Documents/datafiles/table10_2014.csv)

i) Rename the file to something sensible

b) Let's create a table that will work with dataset

i) Go to DB Visualizer, on the top select bootcamp for the database

ii) Then run the following query to create a table: `CREATE TABLE oh_ohs (year INTEGER, injuries INTEGER, fatal_injuries INTEGER, total_fatalities INTEGER, fatalities_abroad INTEGER, flight_hours INTEGER, everything DOUBLE, fatal DOUBLE);`

iii) Clean the table.

(1) Get used to having to clean data!

(2) Remove the header rows, and all of the garbage on the bottom of the file.

(3) Select all of the integer values

(a) Right click

(b) Click format data

(c) Select 'Number' on the left side

(d) Set the precision at 0

(4) Save the file

iv) You should now have another empty table

(1) Test it by querying: `SELECT * FROM oh_ohs;`

v) Let's import some data: `LOAD DATA LOCAL INFILE '/Users/R594437/Downloads/data.csv' INTO TABLE oh_ohs FIELDS TERMINATED BY ',';`

(1) Ensure that your query features your path / file name

vi) See what you have:

(1) `SELECT * FROM oh_ohs;`

vii) Let's try a more complicated query:

```
(1) SELECT * FROM oh_ohs WHERE flight_hours >
    20000000 AND (fatal_injuries * 2) < total_fatalities;
```

~~~ SQL isn't enough? Let's have python do some number crunching! ~~~

15) Let's create a python script: `vim script.py`

16) Let's edit the script, press 'i', then paste the following:

```
import mysql.connector
from mysql.connector import errorcode

try:
    config = {
        'user': 'root',
        'password': 'admin',
        'host': 'localhost',
        'database': 'bootcamp'
    }
    cnx = mysql.connector.connect(**config)
except mysql.connector.Error as err:
    if err.errno == errorcode.ER_ACCESS_DENIED_ERROR:
        print("Something is wrong with your user name or password")
    elif err.errno == errorcode.ER_BAD_DB_ERROR:
        print("Database does not exist")
    else:
        print(err)
else:
    print 'Connected!'
    cnx.close()
```

- 17) Press 'esc'
  - a) Type: `:wq` to save your work and press 'enter'
- 18) For the script to run we need the packages that we import in the script to be installed
  - a) Determine which packages you can install on your version of the machine: `pip search mysql-connector`
  - b) This worked for me: `pip install mysql-connector`
- 19) Now run the script: `python script.py`

~~~ Are you an all-star who got this far? Well that's all that I prepared in 4 hours, please read the link below for more! ~~~

<http://stackoverflow.com/questions/372885/how-do-i-connect-to-a-mysql-database-in-python>