

## # Introducción a Python – MySQL

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### 1. Instalar el conector de MySQL

- Requisito previo: Tener instalado MySQL
- <https://pypi.org/project/mysql-connector-python/>

### 2. Crear un programa para probar la conexión a la base de datos

- IP: 127.0.0.1

<https://dev.mysql.com/doc/connector-python/en/connector-python-example-connecting.html>

- Colocar en el repositorio python-rfid-mysql

### 3. Crear un programa para hacer una consulta a base de datos desde Python

<https://dev.mysql.com/doc/connector-python/en/connector-python-example-cursor-select.html>

## Instrucciones para la creación de la base de datos correspondiente a este ejercicio

1. Instalar MySQL Server
  - o `sudo apt install mysql-server`
2. Entrar a MySQL
  - o `sudo mysql`
3. Crear una nueva base de datos
  - o `create databases codigoloT;`
4. Seleccionar la base de datos creada
  - o `use codigoloT;`
5. Crear una nueva tabla que contenga los campos deseados
  - o `id, fecha, nombre, temperatura, humedad`
  - o `create table clima (id INT (6) UNSIGNED AUTO_INCREMENT PRIMARY KEY, fecha TIMESTAMP DEFAULT CURRENT_TIMESTAMP, nombre CHAR (248) NOT NULL, temperatura FLOAT (4,2), humedad INT (3));`
6. Crear un nuevo usuario para ser usado con NodeRed
  - o `CREATE USER 'newuser'@'localhost' IDENTIFIED BY 'password';`
  - o `CREATE USER 'hugohugo'@'localhost' IDENTIFIED BY '1234';`
  - o `GRANT ALL PRIVILEGES ON *.* TO 'hugohugo'@'localhost';`

## Notas

- Puedes consultar todas las bases de datos con el comando `show databases;`
- Puedes consultar las tablas en el interior de una base de datos seleccionada con el comando `show tables;`
- Puedes consultar la forma de la tabla con el comando `describe clima;`
- Para agregar información a la base de datos con NodeRed se requiere poner en un nodo Function la siguiente información

```
msg.topic = "INSERT INTO clima (nombre,temperatura,humedad) VALUES ('Hugo'," + global.get ("tempAPI")+  
"," + global.get ("humAPI") + ");";
```

`return msg;`

- Puedes consultar todos los datos de una tabla con el siguiente comando `SELECT * FROM clima;`

En la sesión 40 se generó la BD codigoloT y la tabla clima

```
mysql> describe clima;
+-----+-----+-----+-----+-----+-----+
| Field | Type          | Null | Key | Default        | Extra          |
+-----+-----+-----+-----+-----+-----+
| id     | int unsigned  | NO   | PRI | NULL           | auto_increment |
| fecha  | timestamp     | YES  |     | CURRENT_TIMESTAMP | DEFAULT_GENERATED |
| nombre | char(248)     | NO   |     | NULL           |                |
| temp   | float(4,2)    | NO   |     | NULL           |                |
| humedad | int unsigned  | NO   |     | NULL           |                |
+-----+-----+-----+-----+-----+-----+
5 rows in set (0.01 sec)

mysql> select * from clima;
Empty set (0.00 sec)

mysql> insert into "clima" ("nombre","temp","humedad") values ("Laura Balandran",26.20,49.00);
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near '"clima" ("nombre","temp","humedad") values ("Laura Balandran",26.20,49.00)' at line 1
mysql> insert into "clima" (nombre,temp,humedad) values ('Laura Balandran',26.20,49.00);
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near '"clima" (nombre,temp,humedad) values ('Laura Balandran',26.20,49.00)' at line 1
mysql> insert into "clima" (nombre,temp,humedad) values ('Laura Balandran','26.20','49.00');
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near '"clima" (nombre,temp,humedad) values ('Laura Balandran','26.20','49.00)' at line 1
mysql> insert into clima (nombre,temp,humedad) values ('Laura Balandran','26.20','49.00');
Query OK, 1 row affected (0.05 sec)

mysql> insert into clima (nombre,temp,humedad) values ('Laura Balandran','26.20','49.00');
```

## Introduce datos:

insert into clima (nombre,temp,humedad) values ('Laura Balandran','26.20','49.00');

```
mysql> insert into clima (nombre,temp,humedad) values ('Cristina Balandrans','23.00','48.00');
Query OK, 1 row affected (0.03 sec)

mysql> insert into clima (nombre,temp,humedad) values ('Cristina Balandran','23.10','48.00');
Query OK, 1 row affected (0.05 sec)

mysql> insert into clima (nombre,temp,humedad) values ('Cristina Balandran','23.00','48.10');
Query OK, 1 row affected (0.00 sec)

mysql> select * from clima;
+-----+-----+-----+-----+-----+
| id | fecha                | nombre          | temp | humedad |
+-----+-----+-----+-----+-----+
| 1  | 2022-10-04 18:41:01 | Laura Balandran | 26.20 | 49      |
| 2  | 2022-10-04 18:49:33 | Laura Balandran | 26.20 | 49      |
| 3  | 2022-10-04 18:54:19 | Lyan Balandran  | 27.30 | 49      |
| 4  | 2022-10-04 18:54:49 | Lyan Balandran  | 27.30 | 49      |
| 5  | 2022-10-04 18:55:06 | Lyan Balandran  | 27.00 | 50      |
| 6  | 2022-10-04 18:56:03 | Manuel Salas    | 26.10 | 49      |
| 7  | 2022-10-04 18:56:07 | Manuel Salas    | 26.10 | 49      |
| 8  | 2022-10-04 18:56:20 | Manuel Salas    | 26.20 | 49      |
| 9  | 2022-10-04 18:57:54 | Cristina Balandrans | 23.00 | 48      |
| 10 | 2022-10-04 18:58:09 | Cristina Balandran | 23.10 | 48      |
| 11 | 2022-10-04 18:58:22 | Cristina Balandran | 23.00 | 48      |
+-----+-----+-----+-----+-----+
11 rows in set (0.00 sec)

mysql>
```

### Usuario ya creado anteriormente:

rociobc

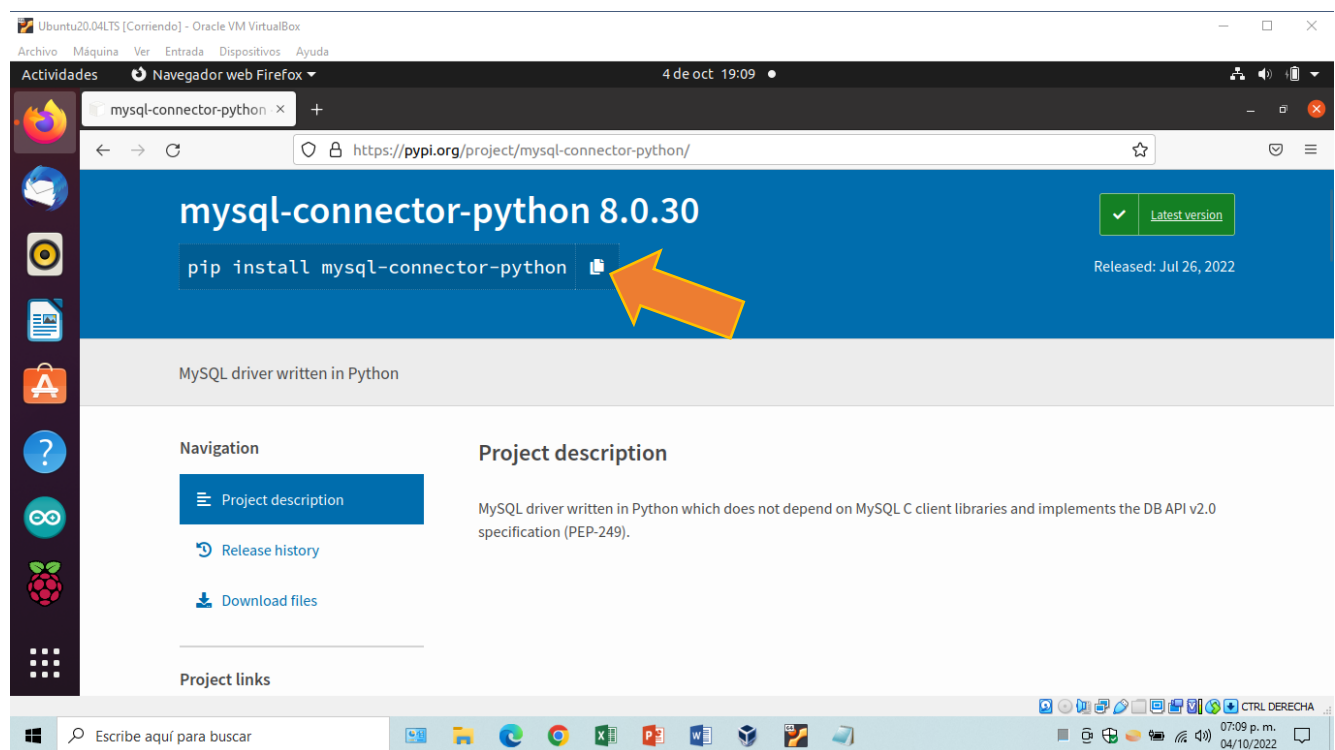
pw: 1234

### Instalar conector de MySql

- Requisito previo: Tener instalado MySQL
- <https://pypi.org/project/mysql-connector-python/>

Python permite que los programas accedan a las bases de datos de MYSQL, utilizando una API que cumple con la especificación de la Api de la base de datos de Python v2.0

Hay varias versiones de MySql Connector /Python disponibles



Ubuntu20.04 LTS [Corriendo] - Oracle VM VirtualBox

Archivo Máquina Ver Entrada Dispositivos Ayuda

Actividades Terminal 4 de oct 19:11

```
mysql-co
rocl@VMUbuntu: ~
rocl@VMUbuntu: ~
rocl@VMUbuntu: ~
rocl@VMUbuntu:~$ pip install mysql-connector-python
Defaulting to user installation because normal site-packages is not writeable
Collecting mysql-connector-python
  Downloading mysql_connector_python-8.0.30-cp38-cp38-manylinux1_x86_64.whl (25.4 MB)
    25.4/25.4 MB 4.5 MB/s eta 0:00:00
Collecting protobuf<=3.20.1,>=3.11.0
  Downloading protobuf-3.20.1-cp38-cp38-manylinux2_5_x86_64.whl (1.0 MB)
    1.0/1.0 MB 7.1 MB/s eta 0:00:00
Installing collected packages: protobuf, mysql-connector-python
Successfully installed mysql-connector-python-8.0.30 protobuf-3.20.1
--- Logging error ---
Traceback (most recent call last):
  File "/usr/local/lib/python3.8/dist-packages/pip/_internal/utils/logging.py", line 177, in emit
    self.console.print(renderable, overflow="ignore", crop=False, style=style)
  File "/usr/local/lib/python3.8/dist-packages/pip/_vendor/rich/console.py", line 1752, in print
    extend(render(renderable, render_options))
  File "/usr/local/lib/python3.8/dist-packages/pip/_vendor/rich/console.py", line 1390, in render
    for render_output in iter_render:
  File "/usr/local/lib/python3.8/dist-packages/pip/_internal/utils/logging.py", line 134, in __rich_console__
    for line in lines:
  File "/usr/local/lib/python3.8/dist-packages/pip/_vendor/rich/segment.py", line 245, in split_lines
    for segment in segments:
  File "/usr/local/lib/python3.8/dist-packages/pip/_vendor/rich/console.py", line 1368, in render
    renderable = rich_cast(renderable)
  File "/usr/local/lib/python3.8/dist-packages/pip/_vendor/rich/protocol.py", line 36, in rich_cast
    renderable = cast_method()
  File "/usr/local/lib/python3.8/dist-packages/pip/_internal/self_outdated_check.py", line 130, in __rich__
    pip_cmd = get_best_invocation_for_this_pip()
  File "..."
```

07:11 p. m. 04/10/2022