

Capturas de pantalla Docker

Docker instalado:

```
C:\Users\vborryayo>docker --version
Docker version 20.10.8, build 3967b7d

C:\Users\vborryayo>
```

Hello World

```
C:\Users\vborryayo>docker run hello-world
Unable to find image 'hello-world:latest' locally
latest: Pulling from library/hello-world
2db29710123e: Pull complete
Digest: sha256:37a0b92b08d4919615c3ee023f7ddb068d12b8387475d64c622ac30f45c29c51
Status: Downloaded newer image for hello-world:latest

Hello from Docker!
This message shows that your installation appears to be working correctly.

To generate this message, Docker took the following steps:
 1. The Docker client contacted the Docker daemon.
 2. The Docker daemon pulled the "hello-world" image from the Docker Hub.
    (amd64)
 3. The Docker daemon created a new container from that image which runs the
    executable that produces the output you are currently reading.
 4. The Docker daemon streamed that output to the Docker client, which sent it
    to your terminal.

To try something more ambitious, you can run an Ubuntu container with:
$ docker run -it ubuntu bash

Share images, automate workflows, and more with a free Docker ID:
https://hub.docker.com/

For more examples and ideas, visit:
https://docs.docker.com/get-started/
```

Docker pull

```
C:\Users\vborryayo>docker pull busybox
Using default tag: latest
latest: Pulling from library/busybox
01c2cdc13739: Pull complete
Digest: sha256:15e927f78df2cc772b70713543d6b651e3cd8370abf86b2ea4644a9fba21107f
Status: Downloaded newer image for busybox:latest
docker.io/library/busybox:latest
```

Docker images

```
C:\Users\vbarrayo>docker images
REPOSITORY          TAG                 IMAGE ID            CREATED             SIZE
busybox              latest             cabb9f684f8b      3 days ago        1.24MB
mysql                5.7.35            8a8a506ccfdc      2 weeks ago       448MB
jupyter/base-notebook latest            f14b646c836f      2 weeks ago       668MB
hello-world          latest            feb5d9fea6a5      5 weeks ago       13.3kB
```

Docker busybox

```
C:\Users\vbarrayo>docker run busybox
C:\Users\vbarrayo>docker run busybox echo "Hello from Galileo master"
Hello from Galileo master
C:\Users\vbarrayo>
```

Docker ps

```
C:\Users\vbarrayo>docker ps
CONTAINER ID   IMAGE     COMMAND   CREATED   STATUS    PORTS   NAMES
C:\Users\vbarrayo>docker ps -a
CONTAINER ID   IMAGE     COMMAND   CREATED   STATUS    PORTS   NAMES
aed3bc0366f9   busybox   "echo 'Hello from Ga..." About a minute ago   Exited (0) About a minute ago   frosty_boyd
196f9ac3f098   busybox   "sh"      About a minute ago   Exited (0) About a minute ago   friendly_noyce
5db1252c44bd   busybox   "Hello from Galileo ..." 2 minutes ago       Created                          peaceful_elbakyan
dfecfface372   busybox   "sh"      2 minutes ago       Exited (0) 2 minutes ago       agitated_wright
73c223aba2d0   busybox   "sh"      3 minutes ago       Exited (0) 3 minutes ago       festive_ride
7621081f7f59   hello-world "/hello"   10 minutes ago      Exited (0) 10 minutes ago      xenodochial_gates
44a1f00279bd   jupyter/base-notebook "tini -g -- start-no..." 2 weeks ago         Exited (0) 2 weeks ago         laughing_hypatia
550d0e7db476   jupyter/base-notebook "tini -g -- start-no..." 2 weeks ago         Exited (0) 2 weeks ago         busy_morse
2f124582cf71   mysql:5.7.35 "docker-entrypoint.s..." 2 weeks ago         Exited (0) 2 weeks ago         determined_bohr
c9f9c3f64b4d   jupyter/base-notebook "tini -g -- start-no..." 2 weeks ago         Exited (0) 2 weeks ago         beautiful_taussig
8bfdcaf39899   jupyter/base-notebook "tini -g -- start-no..." 2 weeks ago         Exited (0) 2 weeks ago         heuristic_wilson
C:\Users\vbarrayo>
```

Docker run -it

```
C:\Users\vbarrayo>docker run -it busybox sh
/ # ls
bin  dev  etc  home  proc  root  sys  tmp  usr  var
/ # uptime
03:49:27 up 19 min,  0 users,  load average: 0.01, 0.02, 0.00
/ #
```

Docker rm

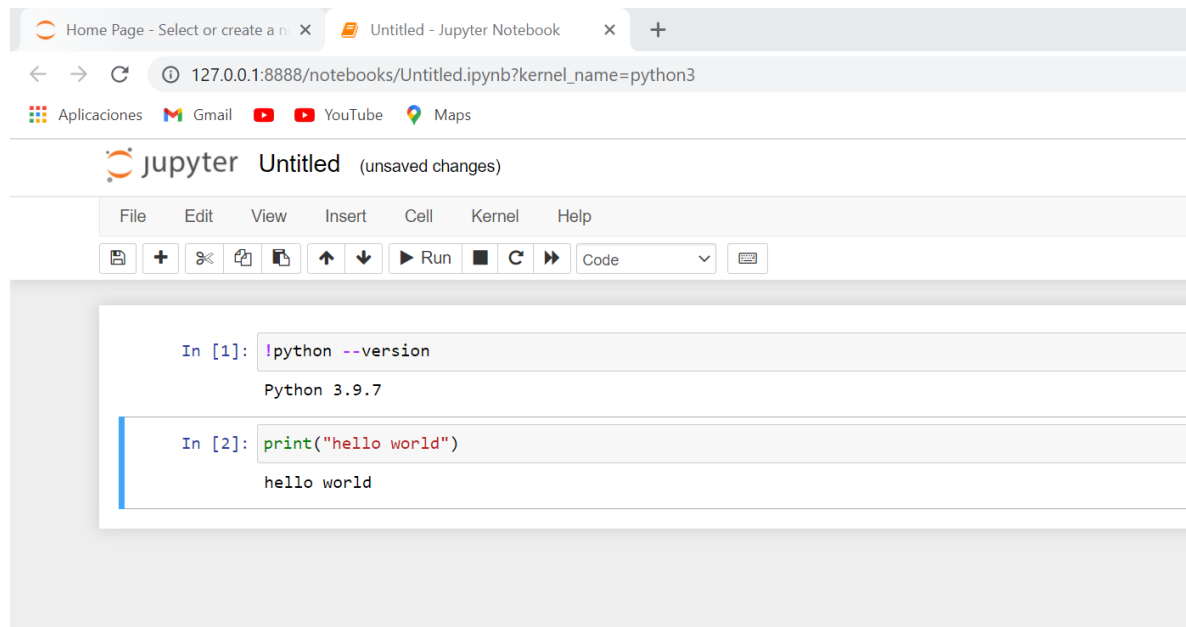
```
C:\Users\vbarrayo>docker ps -a
CONTAINER ID   IMAGE     COMMAND   CREATED   STATUS    PORTS   NAMES
748afcb388f5   busybox   "sh"      About a minute ago   Exited (0) 54 seconds ago   pedantic_wright
aed3bc0366f9   busybox   "echo 'Hello from Ga..." 6 minutes ago       Exited (0) 6 minutes ago   frosty_boyd
196f9ac3f098   busybox   "sh"      6 minutes ago       Exited (0) 6 minutes ago   friendly_noyce
5db1252c44bd   busybox   "Hello from Galileo ..." 7 minutes ago       Created                          peaceful_elbakyan
dfecfface372   busybox   "sh"      7 minutes ago       Exited (0) 7 minutes ago       agitated_wright
73c223aba2d0   busybox   "sh"      8 minutes ago       Exited (0) 8 minutes ago       festive_ride
7621081f7f59   hello-world "/hello"   15 minutes ago      Exited (0) 15 minutes ago      xenodochial_gates
44a1f00279bd   jupyter/base-notebook "tini -g -- start-no..." 2 weeks ago         Exited (0) 2 weeks ago         laughing_hypatia
550d0e7db476   jupyter/base-notebook "tini -g -- start-no..." 2 weeks ago         Exited (0) 2 weeks ago         busy_morse
2f124582cf71   mysql:5.7.35 "docker-entrypoint.s..." 2 weeks ago         Exited (0) 2 weeks ago         determined_bohr
c9f9c3f64b4d   jupyter/base-notebook "tini -g -- start-no..." 2 weeks ago         Exited (0) 2 weeks ago         beautiful_taussig
8bfdcaf39899   jupyter/base-notebook "tini -g -- start-no..." 2 weeks ago         Exited (0) 2 weeks ago         heuristic_wilson
C:\Users\vbarrayo>docker rm 748afcb388f5
748afcb388f5
C:\Users\vbarrayo>
```

Docker con Python

Obteniendo contenedor jupyter/base-notebook

```
c:\Users\vberrayo>docker pull jupyter/base-notebook
Using default tag: latest
latest: Pulling from jupyter/base-notebook
7b1a6ab2e44d: Pull complete
aae7ac7ba423: Pull complete
ac5e015e0bca: Pull complete
d7ee77f7580c: Pull complete
a5db759ff9c8: Pull complete
c464ee64836c: Pull complete
ae5313d07705: Pull complete
0c52b58dd46b: Pull complete
6030cc7cf343: Pull complete
25203b1e1be1: Pull complete
464a3cf035e8: Pull complete
Digest: sha256:5876e42c22c5df950880518f13f9c8e08b2c8fd50d1072519887735c14ee63f7
Status: Downloaded newer image for jupyter/base-notebook:latest
docker.io/jupyter/base-notebook:latest
```

Jupyter notebook

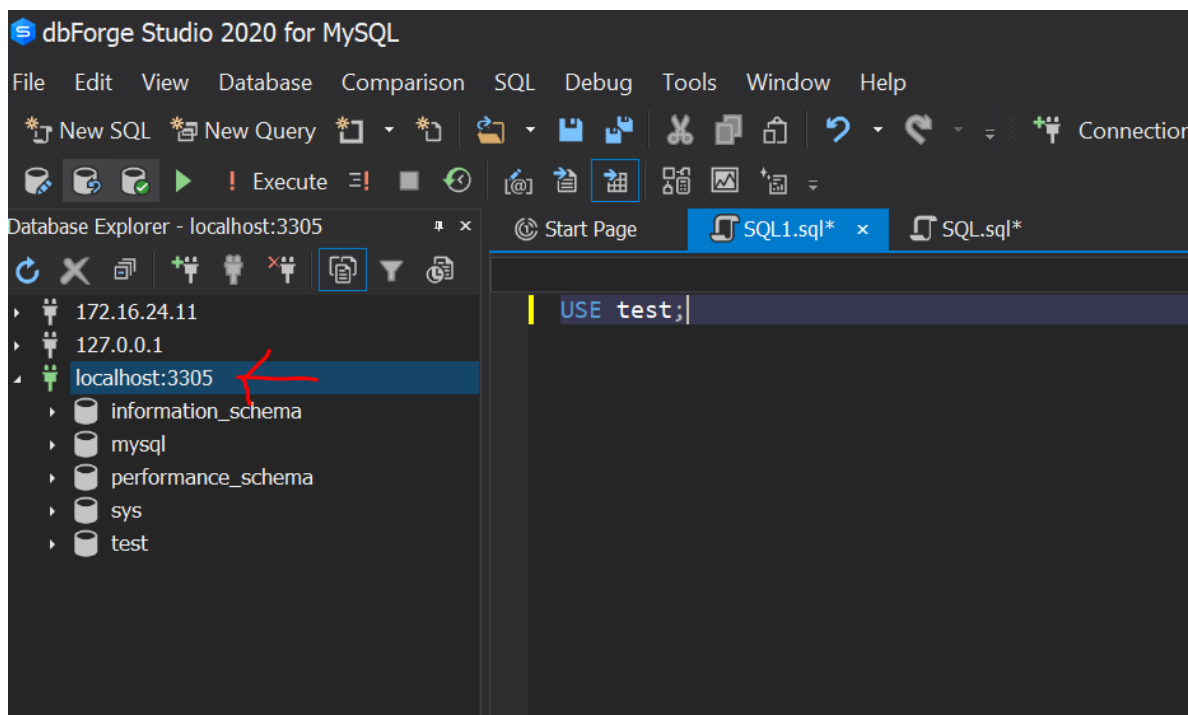


Creando red para contenedores

```
C:\Users\vborroway>docker network create --driver bridge network-test
18412abfb5dbf8f1421cfba5a47eae42bb3985a15e16cf6c5df09cbafb012efc
```

Corriendo contenedor mysql

```
C:\Users\vborroway>docker run -it --network network-test -e "MYSQL_ROOT_PASSWORD=root123" -e "MYSQL_DATABASE=test" -e "MYSQL_PASSWORD=test123" -p
3305:3306 mysql:5.7.35
2021-10-31 04:18:16:00:00 [Note] [Entrypoint]: Entrypoint script for MySQL Server 5.7.35-1debian10 started.
2021-10-31 04:18:16:00:00 [Note] [Entrypoint]: Switching to dedicated user 'mysql'
2021-10-31 04:18:16:00:00 [Note] [Entrypoint]: Entrypoint script for MySQL Server 5.7.35-1debian10 started.
2021-10-31 04:18:17:00:00 [Warn] [Entrypoint]: MYSQL_PASSWORD specified, but missing MYSQL_USER; MYSQL_PASSWORD will be ignored
2021-10-31 04:18:17:00:00 [Note] [Entrypoint]: Initializing database files
2021-10-31T04:18:17.122797Z 0 [warning] TIMESTAMP with implicit DEFAULT value is deprecated. Please use --explicit_defaults_for_timestamp server
option (see documentation for more details).
2021-10-31T04:18:17.411659Z 0 [warning] InnoDB: New log files created, LSN=45790
2021-10-31T04:18:17.492222Z 0 [warning] InnoDB: Creating foreign key constraint system tables.
2021-10-31T04:18:17.563389Z 0 [warning] No existing UUID has been found, so we assume that this is the first time that this server has been start
ed. Generating a new UUID: 92e70106-3a01-11ec-a310-0242ac140002.
2021-10-31T04:18:17.569368Z 0 [warning] Gtid table is not ready to be used. Table 'mysql.gtid_executed' cannot be opened.
2021-10-31T04:18:19.788596Z 0 [warning] A deprecated TLS version TLSv1 is enabled. Please use TLSv1.2 or higher.
2021-10-31T04:18:19.788795Z 0 [warning] A deprecated TLS version TLSv1.1 is enabled. Please use TLSv1.2 or higher.
2021-10-31T04:18:19.789955Z 0 [warning] CA certificate ca.pem is self signed.
2021-10-31T04:18:20.224984Z 1 [warning] root@localhost is created with an empty password ! Please consider switching off the --initialize-insecur
e option.
2021-10-31 04:18:24:00:00 [Note] [Entrypoint]: Database files initialized
2021-10-31 04:18:24:00:00 [Note] [Entrypoint]: Starting temporary server
2021-10-31 04:18:24:00:00 [Note] [Entrypoint]: Waiting for server startup
2021-10-31T04:18:24.843865Z 0 [warning] TIMESTAMP with implicit DEFAULT value is deprecated. Please use --explicit_defaults_for_timestamp server
option (see documentation for more details).
2021-10-31T04:18:24.847783Z 0 [Note] mysqld (mysqld 5.7.35) starting as process 78 ...
2021-10-31T04:18:24.855614Z 0 [Note] InnoDB: PUNCH HOLE support available
2021-10-31T04:18:24.855718Z 0 [Note] InnoDB: Mutexes and rw_locks use gcc atomic builtins
2021-10-31T04:18:24.855735Z 0 [Note] InnoDB: Uses event mutexes
2021-10-31T04:18:24.855744Z 0 [Note] InnoDB: GCC builtin __atomic_thread_fence() is used for memory barrier
2021-10-31T04:18:24.855803Z 0 [Note] InnoDB: Compressed tables use zlib 1.2.11
2021-10-31T04:18:24.855869Z 0 [Note] InnoDB: Using Linux native AIO
2021-10-31T04:18:24.856506Z 0 [Note] InnoDB: Number of pools: 1
2021-10-31T04:18:24.856858Z 0 [Note] InnoDB: Using CPU crc32 instructions
2021-10-31T04:18:24.862290Z 0 [Note] InnoDB: Initializing buffer pool, total size = 128M, instances = 1, chunk size = 128M
2021-10-31T04:18:24.884860Z 0 [Note] InnoDB: Completed initialization of buffer pool
2021-10-31T04:18:24.894001Z 0 [Note] InnoDB: If the mysqld execution user is authorized, page cleaner thread priority can be changed. See the man
page of setpriority().
2021-10-31T04:18:24.910426Z 0 [Note] InnoDB: Highest supported file format is Barracuda.
2021-10-31T04:18:24.931713Z 0 [Note] InnoDB: Creating shared tablespace for temporary tables
2021-10-31T04:18:24.931883Z 0 [Note] InnoDB: Setting file './ibtmp1' size to 12 MB. Physically writing the file full; Please wait ...
```

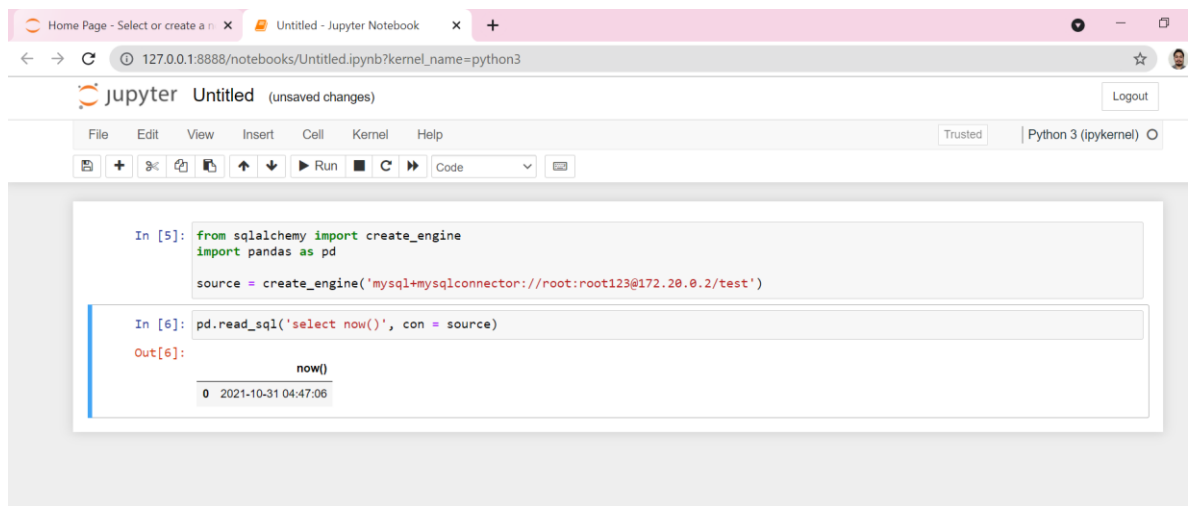


Conectando contenedor de Jupyter notebook con contenedor Mysql

```
C:\Users\vbarrayo>docker run -p 8888:8888 --network network-test jupyter/base-notebook
WARN: Jupyter Notebook deprecation notice https://github.com/jupyter/docker-stacks#jupyter-notebook-deprecation-notice.
Executing the command: jupyter notebook
[I 04:27:06.493 NotebookApp] Writing notebook server cookie secret to /home/jovyan/.local/share/jupyter/runtime/notebook_cookie_secret
[W 2021-10-31 04:27:08.206 LabApp] 'ip' has moved from NotebookApp to ServerApp. This config will be passed to ServerApp. Be sure to update your
config before our next release.
[W 2021-10-31 04:27:08.206 LabApp] 'port' has moved from NotebookApp to ServerApp. This config will be passed to ServerApp. Be sure to update your
config before our next release.
[W 2021-10-31 04:27:08.206 LabApp] 'port' has moved from NotebookApp to ServerApp. This config will be passed to ServerApp. Be sure to update your
config before our next release.
[W 2021-10-31 04:27:08.231 LabApp] JupyterLab extension loaded from /opt/conda/lib/python3.9/site-packages/jupyterlab
[W 2021-10-31 04:27:08.231 LabApp] JupyterLab application directory is /opt/conda/share/jupyter/lab
[I 04:27:08.244 NotebookApp] Serving notebooks from local directory: /home/jovyan
[I 04:27:08.245 NotebookApp] Jupyter Notebook 6.4.5 is running at:
[I 04:27:08.245 NotebookApp] http://fc857885a08d:8888/?token=9b99e994a88ab067aa7df653aa130920c451837f3248d6ca
[I 04:27:08.245 NotebookApp] or http://127.0.0.1:8888/?token=9b99e994a88ab067aa7df653aa130920c451837f3248d6ca
[I 04:27:08.245 NotebookApp] Use Control-C to stop this server and shut down all kernels (twice to skip confirmation).
[C 04:27:08.258 NotebookApp]

To access the notebook, open this file in a browser:
file:///home/jovyan/.local/share/jupyter/runtime/nbserver-7-open.html
Or copy and paste one of these URLs:
http://fc857885a08d:8888/?token=9b99e994a88ab067aa7df653aa130920c451837f3248d6ca
or http://127.0.0.1:8888/?token=9b99e994a88ab067aa7df653aa130920c451837f3248d6ca
```

```
C:\Users\vbarrayo>docker exec -it sharp_shamir sh
$ pip install mysql-connector-python
Collecting mysql-connector-python
  Downloading mysql_connector_python-8.0.27-1commercial-cp39-cp39-manylinux1_x86_64.whl (37.5 MB)
    37.5 MB 226 kB/s
Collecting protobuf>=3.0.0
  Downloading protobuf-3.19.1-cp39-cp39-manylinux_2_17_x86_64.manylinux2014_x86_64.whl (1.1 MB)
    1.1 MB 713 kB/s
Installing collected packages: protobuf, mysql-connector-python
Successfully installed mysql-connector-python-8.0.27 protobuf-3.19.1
$ pip install pandas
Collecting pandas
  Downloading pandas-1.3.4-cp39-cp39-manylinux_2_17_x86_64.manylinux2014_x86_64.whl (11.5 MB)
    11.5 MB 365 kB/s
Requirement already satisfied: pytz>=2017.3 in /opt/conda/lib/python3.9/site-packages (from pandas) (2021.3)
Collecting numpy>=1.17.3
  Downloading numpy-1.21.3-cp39-cp39-manylinux_2_12_x86_64.manylinux2010_x86_64.whl (15.7 MB)
    15.7 MB 178 kB/s
Requirement already satisfied: python-dateutil>=2.7.3 in /opt/conda/lib/python3.9/site-packages (from pandas) (2.8.2)
Requirement already satisfied: six>=1.5 in /opt/conda/lib/python3.9/site-packages (from python-dateutil>=2.7.3->pandas) (1.16.0)
Installing collected packages: numpy, pandas
Successfully installed numpy-1.21.3 pandas-1.3.4
$ -
```



Docker compose

Archivo.yml

```
main.py  docker-compose.yml  Release Notes: 1.61.0  conteo.py
C: > Users > vborrayo > Desktop > ProductDevelopment > Tarea1 > docker-compose.yml

13     MYSQL_DATABASE: test
14     MYSQL_USER: test
15     MYSQL_PASSWORD: test123
16
17     jupyter:
18     image: jupyter/base-notebook
19     ports:
20     - 8888:8888
21
22     volumes:
23     - db_data:/data

PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL
desktop-jupyter-1 | [I 05:12:53.392 NotebookApp] or http://127.0.0.1:8888/?token=4ad2d51ffe09d57b749b8541f00ebb36ca04cd7c7354503c
desktop-jupyter-1 | [I 05:12:53.393 NotebookApp] Use Control-C to stop this server and shut down all kernels (twice to skip confirmation).
desktop-jupyter-1 | [C 05:12:53.413 NotebookApp]
desktop-jupyter-1 |
desktop-jupyter-1 | To access the notebook, open this file in a browser:
desktop-jupyter-1 | file:///home/jovyan/.local/share/jupyter/runtime/nbserver-7-open.html
desktop-jupyter-1 | Or copy and paste one of these URLs:
desktop-jupyter-1 | http://b1b83414a969:8888/?token=4ad2d51ffe09d57b749b8541f00ebb36ca04cd7c7354503c
desktop-jupyter-1 | or http://127.0.0.1:8888/?token=4ad2d51ffe09d57b749b8541f00ebb36ca04cd7c7354503c
desktop-jupyter-1 | [I 05:13:06.595 NotebookApp] 302 GET /?token=4ad2d51ffe09d57b749b8541f00ebb36ca04cd7c7354503c (172.21.0.1) 2.580000ms
```

→ X 127.0.0.1:8888/notebooks/Untitled.ipynb?kernel_name=python3

jupyter Untitled (unsaved changes) Logo

File Edit View Insert Cell Kernel Help Trusted Python 3 (ipykernel)

Code

```
In [2]: !pip install mysql-connector-python

Collecting mysql-connector-python
  Downloading mysql_connector_python-8.0.27-1commercial-cp39-cp39-manylinux1_x86_64.whl (37.5 MB)
    37.5 MB 570 kB/s
Collecting protobuf>=3.0.0
  Downloading protobuf-3.19.1-cp39-cp39-manylinux2014_x86_64.whl (1.1 MB)
    1.1 MB 1.0 MB/s
Installing collected packages: protobuf, mysql-connector-python
Successfully installed mysql-connector-python-8.0.27 protobuf-3.19.1

In [5]: from sqlalchemy import create_engine
import pandas as pd

source = create_engine('mysql+mysqlconnector://test:test123@mydb/test')

In [6]: pd.read_sql('select now()', source)

Out[6]:
```

	now()
0	2021-10-31 05:17:52

