

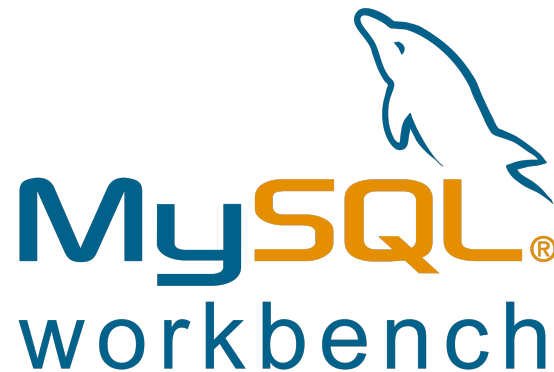
Database Design

Python

Install

Download MySQL Workbench

<https://dev.mysql.com/downloads/>



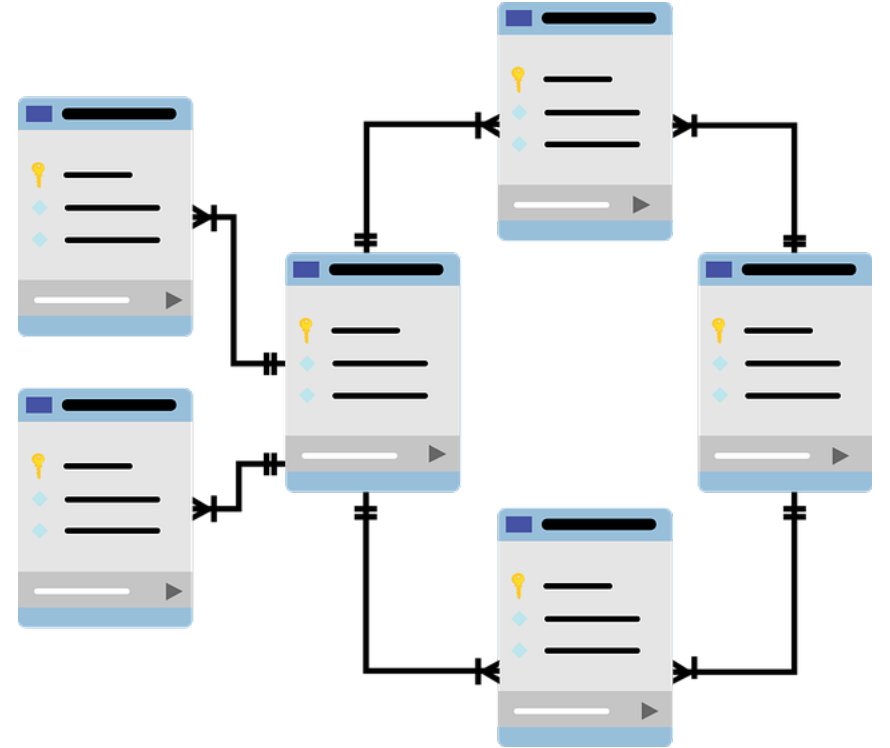
MySQL Workbench

- Windows users
 - You are done
- Mac users
 - Go back to community downloads
 - Select MySQL Workbench

Recap

Database design is deciding:

- The tables
- The columns
- The relationships

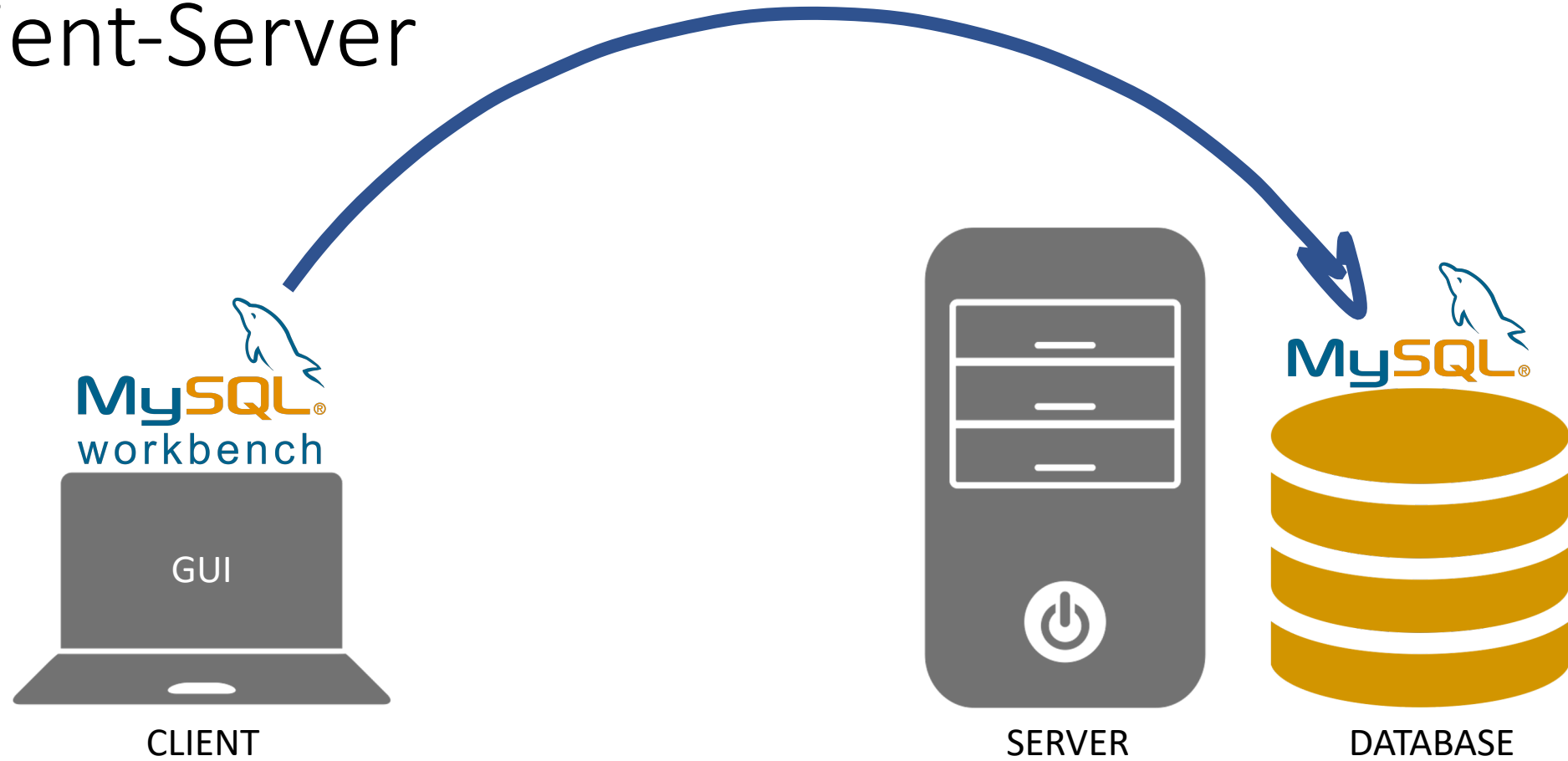


Summary: Database design is Entity Relationship Modeling

- The things, the entities
- The properties of entities
- The relationships between tables

Database Clients

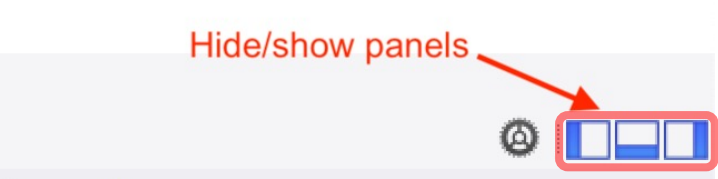
Client-Server

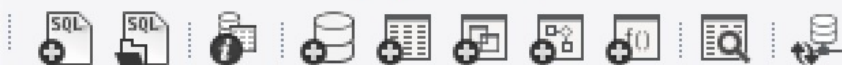


Client-Server



Database Client: MySQL Workbench





Navigator.....

SCHEMAS

Filter objects

- ▶ sakila
- ▶ sys
- ▶ world

Query 1 x



Limit to 1000 rows

1 • SHOW DATABASES



Result Grid



Filter Rows:

Export:



Wrap Cell Content:



Database

▶ information_schema

mysql

performance_schema

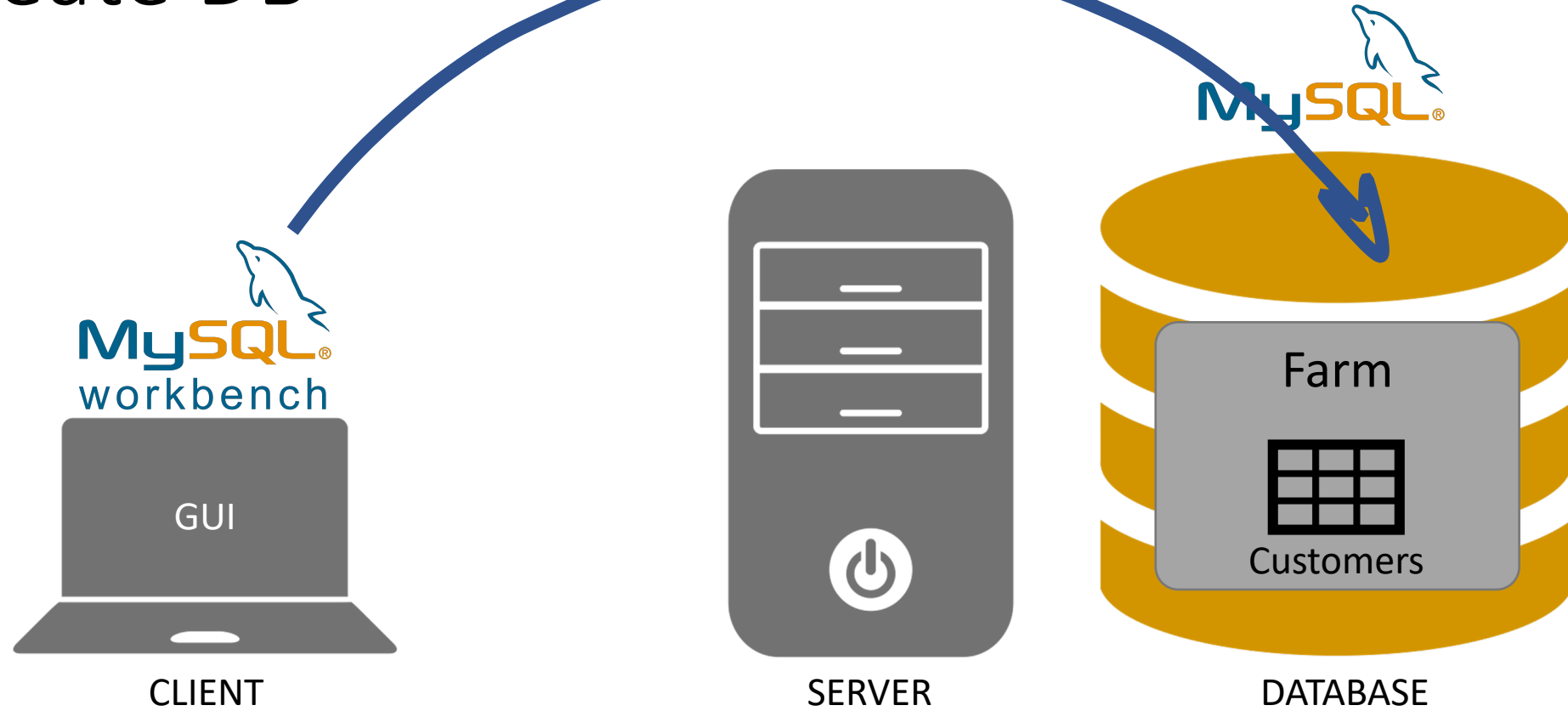
sakila

sys

world

Create a simple database

Create DB



Database Client: Python Driver

Client-Server



Driver

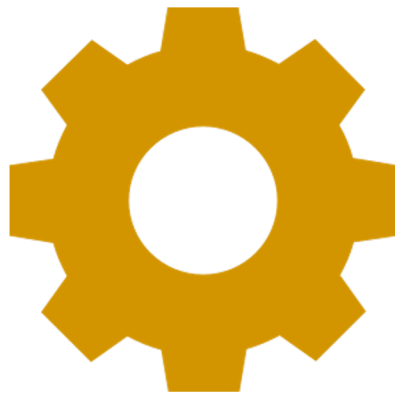
Python needs a driver to speak to the database. A driver is a python package that allows an application to communicate with the database.



Install driver

Make sure you **DO NOT** install the similarly named "mysql-connector"

```
$ pip install mysql-connector-python
```



If you install the wrong one by mistake

```
# To solve the driver problem
# uninstall the following
# -----
# pip3 uninstall mysql-connector
# pip3 install mysql-connector-python
# -----
# Then install
# -----
# pip3 install mysql-connector-python
# -----
```

Quick test

If no errors, your driver has been installed and ready to be used.

```
import mysql.connector
```

Connect to database

Connect to MySQL

```
import mysql.connector
```

Driver

```
cnx = mysql.connector.connect(user='root',  
    password='MyNewPass',  
    host='127.0.0.1',  
    database='education',  
    auth_plugin='mysql_native_password')
```

Connection String

```
cursor = cnx.cursor()  
query = ("SELECT * FROM colleges")  
cursor.execute(query)
```

Cursor can execute
SQL statements

```
# print all the rows  
for row in cursor.fetchall():  
    print(row)
```

```
cursor.close()  
cnx.close()
```

Close Connection

Insert column

```
import mysql.connector

cnx = mysql.connector.connect(user='root',
                              password='MyNewPass',
                              host='127.0.0.1',
                              database='education',
                              auth_plugin='mysql_native_password')

college = input('Enter college name: ')
students = input('Enter student population: ')

cursor = cnx.cursor()
query = (f'INSERT INTO `Colleges` VALUES(NULL,"{college}",{students},NULL,NULL,NULL)')
cursor.execute(query)

query = ("SELECT * FROM colleges")
cursor.execute(query)

# print all the first cell of all the rows
for row in cursor.fetchall():
    print(row)

cursor.close()
cnx.close()
```