

Python — MySQL

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Python Interfaces

- There are several interfaces to several different databases
 - Use pip3 to install mysql.connector

MySQL connector

- Task 1: Connect to the mysql server / database

```
import mysql.connector

mydb = mysql.connector.connect(
    host = 'localhost',
    user = 'root',
    password = '1EmilLie'
)
```

MySQL connector

- You interact by creating a cursor.

MySQL connector

- Task 2: Create a data base.

```
mycursor = mydb.cursor()
mycursor.execute("DROP DATABASE mydatabase")

try:
    mycursor.execute("CREATE DATABASE IF NOT EXISTS mydatabase")
except:
    print('could not create database')
```

MySQL connector

```
mycursor.execute("SHOW DATABASES")
for item in mycursor:
    print(item)
```

- Some databases are part of mysql and always there

```
('classicmodels',)
('information_schema',)
('mydatabase',)
('mysql',)
('performance_schema',)
('sys',)
```

MySQL connector

- You can also connect directly to a database

```
mydb = mysql.connector.connect(  
    host = 'localhost',  
    user = 'root',  
    password = '1EmilLie',  
    database = 'mydatabase'  
)  
mycursor = mydb.cursor()
```

MySQL connector

- Creating a table:

```
try:
    mycursor.execute(
        """CREATE TABLE animals (name VARCHAR(63), food VARCHAR(63))"""
    )
except:
    print('did not create table')

mycursor.execute("SHOW TABLES")
print('Showing Tables')
for item in mycursor:
    print(item)
```


MySQL connector

- Insertion / Deletion

```
mycursor.execute(  
    """  
DELETE FROM animals;  
    """)  
  
)  
mycursor.execute(  
    """INSERT INTO animals Values ('elephant', 'bananas');  
    """)  
  
)
```

MySQL connector

```
mycursor.execute(  
    """  
    INSERT INTO  
        animals  
    VALUES  
        ('monkey', 'roti'),  
        ('dog', 'meat'),  
        ('cat', 'miece'),  
        ('mouse', 'grain');  
    """  
)
```

MySQL connector

- You can of course construct the statements in a more pythonesque way

```
food_list = []
food_list.append(('cat', 'fish'))
food_list.append(('goose', 'corn'))
food_list.append(('donkey', 'hay'))
food_list.append(('grizzly', 'cat'))
food_list.append(('grizzly', 'fish'))
food_list.append(('pheasant', 'insects'))
food_list.append(('fish', 'worm'))
food_list.append(('fish', 'fish'))
food_list.append(('fish', 'plancton'))
food_list.append(('grizzly', 'berries'))

for ani, prey in food_list:
    sql_statement = ('INSERT INTO animals\n' +
                    f"VALUES ('{ani}', '{prey}');")
    print(sql_statement)
    mycursor.execute(sql_statement)
```

MySQL connector

- Do not forget to commit:

```
mydb.commit()
```

MySQL connector

- Retrieval with select:

```
mycursor.execute("SELECT * FROM animals")
myresult = mycursor.fetchall()
for item in myresult:
    print(item)
```

```
print('Contained queries')
mycursor.execute(
    """SELECT a1.*, a2.food
FROM animals a1, animals a2
WHERE a1.food = a2.name
"""
)
myresult = mycursor.fetchall()
for item in myresult:
    print(item)
```