

SQL

1. get value from other files

from python function

```
# app.py
from flask import Flask, render_template

app = Flask(__name__)

@app.route('/index')
def index():
    return render_template("index.html", title="This is title from def index()")

if __name__ == '__main__':
    app.run()
```

```
<!-- index.html -->
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <title>Title</title>
  <link rel="stylesheet" href="/static/plugins/bootstrap-3.4.1-dist/css/bootstrap.css">
</head>
<body>
<div class="navbar navbar-default">
  <div class="container">
    <div class="navbar-header">
      <a class="navbar-brand" href="#">
        
      </a>
    </div>
  </div>
</div>


<div class="container">
  <table class="table">
    <h3>{{title}}</h3>
    <thead>
      <tr>
        <th>#</th>
        <th>First Name</th>
        <th>Last Name</th>
        <th>Username</th>
      </tr>
    </thead>
    <tbody>
      <tr>
        <th scope="row">1</th>
        <td>Mark</td>
        <td>Otto</td>
        <td>@mdo</td>
      </tr>
      <tr>
        <th scope="row">2</th>
        <td>Jacob</td>
        <td>Thornton</td>
        <td>@fat</td>
      </tr>
      <tr>
        <th scope="row">3</th>
        <td>Larry</td>
        <td>the Bird</td>
        <td>@twitter</td>
      </tr>
    </tbody>
  </table>

</div>

</body>
</html>
```

This is title from def index()

#	First Name	Last Name	Username
1	Mark	Otto	@mdo
2	Jacob	Thornton	@fat
3	Larry	the Bird	@twitter

 <h3>{{title}}</h3>

 return render_template("index.html", title="This is title from def index()")

Thus we can get data in python, and pass these data as values into html. This introduce database into previous works.

```
from flask import Flask, render_template

app = Flask(__name__)

@app.route('/index')
def index():
    birds = ["Great Blue Heron", "Laughing Gull", "Sandwich Tern"]

    return render_template("index.html", \
                           title="This is title from def index()", \
                           data_list=birds)

if __name__ == '__main__':
    app.run()
```

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <title>Title</title>
    <link rel="stylesheet" href="/static/plugins/bootstrap-3.4.1-dist/css/bootstrap.css">
</head>
<body>
<div class="navbar navbar-default">
    <div class="container">
        <div class="navbar-header">
            <a class="navbar-brand" href="#">
                
            </a>
        </div>
    </div>
</div>

<div class="container">
    <table class="table">
        <h3>{{title}}</h3>
        <thead>
            <tr>
                <th>ID</th>
                <th>Name</th>
                <th>Concern</th>

            </tr>
        </thead>
        <tbody>
            {% for item in data_list %}
            <tr>
                <th scope="row">1</th>
                <td>{{item}}</td>
                <td>Low Concern</td>

            </tr>
            {% endfor %}
        </tbody>
    </table>

</div>

</body>
</html>
```

Title

127.0.0.1:5000/index

TheCornellLab

This is title from def index()

ID	Name	Concern
1	Great Blue Heron	Low Concern
1	Laughing Gull	Low Concern
1	Sandwich Tern	Low Concern

2. import mySQL

database:

MySQL 8.0 Command Line Client

```
mysql> SHOW databases;
+-----+
| Database |
+-----+
| information_schema |
| mysql |
| performance_schema |
| sakila |
| sql_hr |
| sql_inventory |
| sql_invoicing |
| sql_store |
| sys |
| world |
+-----+
10 rows in set (0.03 sec)
```

table used:

MySQL Workbench

Local instance MySQL80

File Edit View Query Database Server Tools Scripting Help

SCHEMAS

Filter objects

sakila

sql_hr

sql_inventory

sql_invoicing

Tables

clients

invoices

payment_methods

payments

Views

clients_balance

Stored Procedures

Functions

sql_store

Administration Schemas

No object selected

Query 1

clients

invoices

Limit to 1000 rows

1 • SELECT * FROM sql_invoicing.clients;

Result Grid

Filter Rows:

Edit

Export/Import:

	client_id	name	address	city	state	phone
▶	1	Vinte	3 Nevada Parkway	Syracuse	NY	315-252-7305
	2	Myworks	34267 Glendale Parkway	Huntington	WV	304-659-1170
	3	Yadel	096 Pawling Parkway	San Francisco	CA	415-144-6037
	4	Kwideo	81674 Westerfield Cirde	Waco	TX	254-750-0784
	5	Topiclounge	0863 Farmco Road	Portland	OR	971-888-9129
*	NULL	NULL	NULL	NULL	NULL	NULL

```

import pymysql

# connect MySQL
conn = pymysql.connect(host="127.0.0.1", port=3306, user='root', password="****", charset='utf8', db="sql_invoicing")
cursor = conn.cursor(cursor=pymysql.cursors.DictCursor)

# send
sqlStr = "SELECT * FROM clients"
cursor.execute(sqlStr)
data_list = cursor.fetchall()
print(data_list)

# print by rows
for row in data_list:
    print(row)

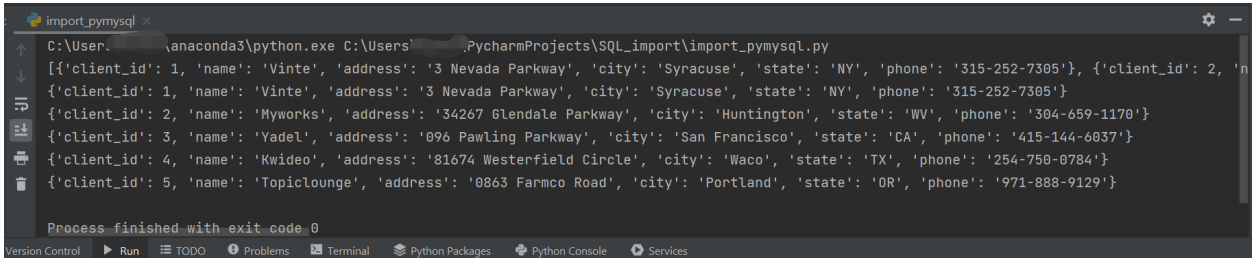
"""
attention:
When insert data, do not use normal format method in python
if you are quite familiar with C, this is quite like what you do scanf

sqlStr = "insert into tableName(colName1, colName2, colName3) value(%s, %s, %s)"
cursor.execute(sqlStr, ["value1", "value2", "value3"])
conn.commit()

also, you can named %s, ex:
sqlStr = "insert into tableName(colName1, colName2, colName3) value(%(name1)s, %(name2)s, %(name3)s)"
cursor.execute(sqlStr, {"name1": "value1", "name2": "value2", "name3": "value3"})
conn.commit()
"""

# close
cursor.close()
conn.close()

```



```

import_pymysql x
C:\Users\...anaconda3\python.exe C:\Users\...PycharmProjects\SQL_import\import_pymysql.py
[{'client_id': 1, 'name': 'Vinte', 'address': '3 Nevada Parkway', 'city': 'Syracuse', 'state': 'NY', 'phone': '315-252-7305'}, {'client_id': 2, 'n
{'client_id': 1, 'name': 'Vinte', 'address': '3 Nevada Parkway', 'city': 'Syracuse', 'state': 'NY', 'phone': '315-252-7305'}
{'client_id': 2, 'name': 'Myworks', 'address': '34267 Glendale Parkway', 'city': 'Huntington', 'state': 'WV', 'phone': '304-659-1170'}
{'client_id': 3, 'name': 'Yadel', 'address': '096 Pawling Parkway', 'city': 'San Francisco', 'state': 'CA', 'phone': '415-144-6037'}
{'client_id': 4, 'name': 'Kwideo', 'address': '81674 Westerfield Circle', 'city': 'Waco', 'state': 'TX', 'phone': '254-750-0784'}
{'client_id': 5, 'name': 'Topiclounge', 'address': '0863 Farmco Road', 'city': 'Portland', 'state': 'OR', 'phone': '971-888-9129'}

Process finished with exit code 0
Version Control Run TODO Problems Terminal Python Packages Python Console Services

```

```

import pymysql

# connect MySQL
conn = pymysql.connect(host="127.0.0.1", port=3306, user='root', password="****", charset='utf8', db="sql_invoicing")
cursor = conn.cursor(cursor=pymysql.cursors.DictCursor)

# send
sqlStr = "SELECT * FROM clients WHERE client_id > %s"
cursor.execute(sqlStr, [3, ])
data_list = cursor.fetchall()
print(data_list)

# print by rows
for row in data_list:
    print(row)

# close
cursor.close()
conn.close()

```



```

import_pymysql x
C:\Users\...anaconda3\python.exe C:\User...PycharmProjects\SQL_import\import_pymysql.py
[{'client_id': 4, 'name': 'Kwideo', 'address': '81674 Westerfield Circle', 'city': 'Waco', 'state': 'TX', 'phone': '254-750-0784'}, {'client_id':
{'client_id': 4, 'name': 'Kwideo', 'address': '81674 Westerfield Circle', 'city': 'Waco', 'state': 'TX', 'phone': '254-750-0784'}
{'client_id': 5, 'name': 'Topiclounge', 'address': '0863 Farmco Road', 'city': 'Portland', 'state': 'OR', 'phone': '971-888-9129'}

```

Ex: SQL & flask Add to database

1. create database

```
mysql> CREATE DATABASE WEB_intro DEFAULT CHARSET utf8 COLLATE utf8_general_ci;
Query OK, 1 row affected, 2 warnings (0.02 sec)

mysql> SHOW databases;
+-----+
| Database |
+-----+
| information_schema |
| mysql |
| performance_schema |
| sakila |
| sql_hr |
| sql_inventory |
| sql_invoicing |
| sql_store |
| sys |
| web_intro |
| world |
+-----+
11 rows in set (0.00 sec)

mysql>
```

2. create table

```
mysql> use web_intro
Database changed
mysql> DROP TABLE IF EXISTS SQL_import_add_user;
Query OK, 0 rows affected, 1 warning (0.00 sec)

mysql> CREATE TABLE SQL_import_add_user(
  -> user VARCHAR(50),
  -> email VARCHAR(50),
  -> password VARCHAR(50),
  -> mobile VARCHAR(16)) default charset=utf8;
Query OK, 0 rows affected, 1 warning (0.07 sec)

mysql>
```

3. flask

```
from flask import Flask, render_template, request
import pymysql

app = Flask(__name__)

@app.route('/add/user', methods=["GET", "POST"])
def add_user():
    # if we are not getting data from user
    if request.method == "GET":
        return render_template("add_user.html")

    username = request.form.get('user')
    email = request.form.get('email')
    password = request.form.get('psw')
    mobile = request.form.get('mobile')
    print(username, email, mobile, password)

    # connect MySQL
    conn = pymysql.connect(host="127.0.0.1", port=3306, user='root', password="*****", charset='utf8',
                           db="web_intro")
    cursor = conn.cursor(cursor=pymysql.cursors.DictCursor)

    # send
    sqlStr = "insert into SQL_import_add_user(user, email, password, mobile) value(%(user)s, %(email)s, %(psw)s, %(mobile)s)"
    cursor.execute(sqlStr, {
        "user": username,
        "email": email,
        "psw": password,
        "mobile": mobile
    })
    conn.commit()

    # close
    cursor.close()
```

```
conn.close()

return "success"

if __name__ == '__main__':
    app.run()
```

4. html

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <title>Title</title>
  <style>
    .container{
      width: 1000px;
      margin: 0 auto;
    }
    .container input {
      margin-top: 5px;
    }
  </style>
</head>
<body>
<div class="container">
  <form method="POST" action="/add/user">
    <h2 style="color: darkred;">User Information</h2>
    <input type="text" name="user" placeholder="User Name" style="display: block"/>
    <input type="text" name="email" placeholder="Email" style="display: block"/>
    <input type="text" name="mobile" placeholder="Mobile" style="display: block"/>
    <input type="password" name="psw" placeholder="Password" style="display: block"/>
    <input type="submit" value="Submit" style="display: block"/>
  </form>
</div>
</body>
</html>
```

User Information

39conn.commit()
40
41# close
42cursor.close()
43conn.close()
44
45return "success"
46
47if __name__ == '__main__':
48app.run()

add_user()

Run: app ×
* Environment: production
WARNING: This is a development server. Do not use it in a production deployment.
Use a production WSGI server instead.
* Debug mode: off
* Running on http://127.0.0.1:5000/ (Press CTRL+C to quit)
127.0.0.1 - - [09/May/2023 19:16:19] "GET /add/user?user=123&email=12345647%4012.com&mobile=9832023&psw=asdfa89234ff HTTP/1.1" 200
user1 user1_abc@123.com 9973451877 9i9i7y3e4r5t
127.0.0.1 - - [09/May/2023 19:17:30] "POST /add/user HTTP/1.1" 200 -

```
MySQL 8.0 Command Line Client
Database changed
mysql> DROP TABLE IF EXISTS SQL_import_add_user;
Query OK, 0 rows affected, 1 warning (0.00 sec)

mysql> CREATE TABLE SQL_import_add_user(
  -> user VARCHAR(50),
  -> email VARCHAR(50),
  -> password VARCHAR(50),
  -> mobile VARCHAR(16)) default charset=utf8;
Query OK, 0 rows affected, 1 warning (0.07 sec)

mysql> SELECT * FROM SQL_import_add_user;
+-----+-----+-----+-----+
| user | email          | password | mobile |
+-----+-----+-----+-----+
| user1 | user1_abc@123.com | 9i9i7y3e4r5t | 9973451877 |
+-----+-----+-----+-----+
1 row in set (0.01 sec)

mysql>
```

add other info:

```
127.0.0.1 - - [09/May/2023 19:23:39] "GET /add/us
user2 user2jaq@123.com 8645562398 8u6y4r5t5t
127.0.0.1 - - [09/May/2023 19:23:49] "POST /add/u
127.0.0.1 - - [09/May/2023 19:23:51] "GET /add/us
user3 user3nyb@123.com 7492236588 7y4r9i2w2w
127.0.0.1 - - [09/May/2023 19:24:32] "POST /add/u
127.0.0.1 - - [09/May/2023 19:24:33] "GET /add/us
user4 user4rf89@123.com 6756615433 6t7y5t6t6y
127.0.0.1 - - [09/May/2023 19:25:09] "POST /add/u
```

Ex: SQL & spark show data in database

```
from flask import Flask, render_template, request
import pymysql

app = Flask(__name__)

@app.route('/show/user')
def show_user():
    import pymysql

    # connect MySQL
    conn = pymysql.connect(host="127.0.0.1", port=3306, user='root', password="*****", charset='utf8',
                           db="web_intro")
    cursor = conn.cursor(cursor=pymysql.cursors.DictCursor)

    # send
    sqlStr = "SELECT * FROM SQL_import_add_user"
    cursor.execute(sqlStr)
    data_list = cursor.fetchall()

    cursor.close()
    conn.close()

    return render_template('show_user.html', data_list=data_list)

if __name__ == '__main__':
    app.run()
```

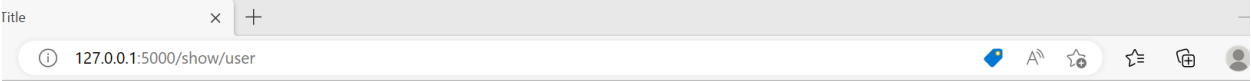
```
<!-- show_user.html -->
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <title>Title</title>
  <style>
    .container {
      width: 1000px;
      margin: 0 auto;
    }

    .container th {
      width: 200px;
    }
  </style>
</head>
<body>
  <table>
    <tr>
      <th>user</th>
      <th>email</th>
      <th>password</th>
      <th>mobile</th>
    </tr>
    <tr>
      <td>user1</td>
      <td>user1_abc@123.com</td>
      <td>9i9i7y3e4r5t</td>
      <td>9973451877</td>
    </tr>
  </table>
</body>
</html>
```

```

        .container td {
            text-align: center;
        }
    }
</style>
</head>
<body>
<div class="container">
    <h2 style="color: darkred; text-align: center">User list</h2>
    <table border="1">
        <thead>
            <tr>
                <th>ID</th>
                <th>name</th>
                <th>email</th>
                <th>password</th>
                <th>mobile</th>
            </tr>
        </thead>
        <tbody>
            {% for row in data_list %}
            <tr>
                <td>{{ data_list.index(row)+1 }}</td>
                <td>{{ row.user }}</td>
                <td>{{ row.email }}</td>
                <td>{{ row.password }}</td>
                <td>{{ row.mobile }}</td>
            </tr>
            {% endfor %}
        </tbody>
    </table>
</div>
</body>
</html>

```



User list

ID	name	email	password	mobile
1	user1	user1_abc@123.com	9i9i7y3e4r5t	9973451877
2	user2	user2jaq@123.com	8u6y4r5t5t	8645562398
3	user3	user3nyb@123.com	7y4r9i2w2w	7492236588
4	user4	user4rf89@123.com	6t7y5t6t6y	6756615433