Web with Python & Flask

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Files and location

```
app.py
static/
    logo.png
    base.css
templates/
    blog_post.html
    index.html
```

Files and location with package

```
my_app/
    __init__.py
    app.py
    models.py
    static/
        logo.png
        base.css
    templates/
        blog_post.html
        index.html
```

Web with python & Flask: Hello world

app.py

```
from flask import Flask

app = Flask(__name__)

@app.route('/')
def hello_world():
  return 'Hello World'

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

Rendering html files in Templates

```
from flask import render_template
...

return render_template('index.html',var1=value1,..)
```

Advanced Rendering html files in Templates

app.py

```
from flask import Flask, render_template

app = Flask(__name__)

@app.route("/")
def index():
    return render_template("index.html", message="Hello
Flask!", contacts=['c1','c2', 'c3']);
```

Advanced Rendering html files in Templates

index.html

```
<html>
     <head> <title>Flask Template Example</title> </head>
<body>
     <div> <p>{{ message }}</p><p>{{ contacts }}</p>
          <p>My Contacts:</p>
          <ul>
               {% for contact in contacts %}
               <li>{{ contact }}</li>
               {% endfor %}
          </ul>
     </div>
</body>
</html>
```

URL Routing (Virtual path)

```
@app.route('/foo/<name>/<int:age>’)
def view(name, age):
    return '%s is %d years old' % (name, age)
```

Set Cookie

```
from flask import make_response

@app.route('/')
def index():
 resp = make_response(render_template('index.html'))
 resp.set_cookie('cookie_name', 'cookie_value')
 return resp
```

Session handling

```
import session
app.config['SECRET_KEY'] = 'random string’ #initial a session
#set session
@app.route('/login_success')
def login_success():
  session['key_name'] = 'key_value' #a secure cookie session
  return redirect(url_for('index'))
#read session
@app.route('/')
def index():
  if 'key_name' in session: #session exists and has key
     session_var = session['key_value']
  else: #session does not exist
```

Return as JSON

```
import jsonify
@app.route('/returnstuff')
def returnstuff():
  num_list = [1,2,3,4,5]
  num_dict = {'numbers':num_list, 'name':'Numbers’}

  return jsonify({'output' : num_dict})
```

MySQL Connection

```
import mysql.connector

mydb = mysql.connector.connect(
  host="localhost",
  user="yourusername",
  password="yourpassword",
  database="mydatabase"
)

mycursor = mydb.cursor()
mycursor.execute("SELECT name, address FROM customers")
myresult = mycursor.fetchall()

for x in myresult:
  print(x)
```

MySQL Insert Table

```
import mysql.connector

mydb = mysql.connector.connect(
  host="localhost",
  user="yourusername",
  password="yourpassword",
  database="mydatabase"
)

mycursor = mydb.cursor()

sql = "INSERT INTO customers (name, address) VALUES (%s, %s)"
val = [
  ('Peter', 'Lowstreet 4'),
  ('Amy', 'Apple st 652'),
  ('Hannah', 'Mountain 21'),
  ('Michael', 'Valley 345')
]

mycursor.executemany(sql, val)
mydb.commit()

print(mycursor.rowcount, "was inserted.")
```

MySQL Connection with Flask

```
from flask import Flask,render_template, request
from flask_mysqldb import MySQL
app = Flask(__name__)

app.config['MYSQL_HOST'] = 'localhost'
app.config['MYSQL_USER'] = 'root'
app.config['MYSQL_PASSWORD'] = ''
app.config['MYSQL_DB'] = 'flask’

mysql = MySQL(app)
```

MySQL Execute Statements with Flask

```
mysql = MySQL(app)

#Creating a connection
cursor cursor = mysql.connection.cursor()

#Executing SQL Statements
cursor.execute("CREATE TABLE table_name(field1, field2...)")
cursor.execute("INSERT INTO table_name VALUES(v1,v2...)")
cursor.execute("DELETE FROM table_name WHERE condition")

#tComm the Actions performed on the DB
mysql.connection.commit()

#Closing the cursor
cursor.close()
```

MySQL Insert example from POST method with Flask

app.py

```
from flask import Flask, render_template, request
from flask_mysqldb import MySQL
app = Flask(__name__)
app.config['MYSQL_HOST'] = 'localhost'
app.config['MYSQL_USER'] = 'root'
app.config['MYSQL_PASSWORD'] = 'root'
app.config['MYSQL_DB'] = 'MyDB'
mysql = MySQL(app)

@app.route('/', methods=['GET', 'POST'])
def index():
   if request.method == "POST":
      details = request.form
      firstName = details['fname']
      lastName = details['lname']
      cursor = mysql.connection.cursor()
      cursor.execute("INSERT INTO MyUsers(firstName, lastName) VALUES (%s, %s)", (firstName,
lastName))
      mysql.connection.commit()
      cursor.close()
      return 'success'
   return render_template('index.html')
```

MySQL Insert example with Flask

index.html

```
<HTML>
<BODY bgcolor="cyan">
<form method="POST" action="">
    <center>
    <H1>Enter your details </H1> <br>
    First Name <input type = "text" name= "fname" /> <br>
    Last Name <input type = "text" name = "lname" /> <br>
    <input type = "submit">
    </center>
</form>
</BODY>
</HTML>
```