

Profile Application using Python Flask and MySQL

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A framework is a code library that makes a developer's life easier when building web applications by providing reusable code for common operations. There are a number of frameworks for Python, including Flask, Tornado, Pyramid, and Django. Flask is a lightweight web application framework. It is classified as a micro-framework because it does not require particular tools or libraries. Side tabs are used for single-page web applications or to display different contents.

Pre-requisite:

- Knowledge of Python,
- MySQL Workbench, and
- basics of Flask Framework.

Profile Application using Flask

Working with MySQL Workbench

Step-1: Install MySQL workbench. Link to install:

https://dev.mysql.com/downloads/workbench/ Know more about it:

https://www.mysql.com/products/workbench/ Step-2: Install 'mysqlbd' module in your venv.

pip install flask-mysgldb

Step 3: Open MySQL workbench.

Step 4: Write the following code. The above SQL statement will create our database **geekprofile** with the table **accounts**.

Step-5: Execute the query.

```
Query 1 × accounts
Trending Now
                                       Foundational Courses Data Science
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                                                                                                              Python
                                                                                                                          Machine Le
                 4 ● ⊖ CREATE TABLE IF NOT EXISTS `accounts` (
                 5
                           'id' int(11) NOT NULL AUTO_INCREMENT,
                            'username' varchar(50) NOT NULL,
                  6
                            'password' varchar(255) NOT NULL,
                 8
                            'email' varchar(100) NOT NULL,
                            `organisation` varchar(100) NOT NULL,
                 9
                            `address` varchar(100) NOT NULL,
                 10
                           `city` varchar(100) NOT NULL,
                 11
                 12
                           `state` varchar(100) NOT NULL,
                 13
                           `country` varchar(100) NOT NULL,
                 14
                           'postalcode' varchar(100) NOT NULL,
                 15
                           PRIMARY KEY ('id')
                        ) ENGINE=InnoDB AUTO_INCREMENT=1 DEFAULT CHARSET=utf8;
                 16
```

Creating Project

- Step 1: Create an environment, and install Flask
- Step 2: Create an empty folder 'geeksprofile'.
- Step 3: Now open your code editor and open this 'geeksprofile' folder.
- **Step 4:** Create 'app.py' folder and write the code given below.

Python3

```
# Store this code in 'app.py' file
from flask import Flask, render_template, request, redirect, url_for, session
from flask_mysqldb import MySQL
import MySQLdb.cursors
import re

app = Flask(__name__)

app.secret_key = 'your secret key'

app.config['MYSQL_HOST'] = 'localhost'
app.config['MYSQL_USER'] = 'root'
app.config['MYSQL_PASSWORD'] = 'password'
app.config['MYSQL_DB'] = 'geekprofile'
```

```
mysql = MySQL(app)
@app.route('/')
@app.route('/login', methods=['GET', 'POST'])
def login():
    msg = ''
    if request.method == 'POST' and 'username' in
    request.form and 'password' in request.form:
        username = request.form['username']
        password = request.form['password']
        cursor = mysql.connection.cursor(MySOLdb.cursors.DictCursor)
        cursor.execute(
            'SELECT * FROM accounts WHERE username = % s \
            AND password = % s', (username, password, ))
        account = cursor.fetchone()
        if account:
            session['loggedin'] = True
            session['id'] = account['id']
            session['username'] = account['username']
            msg = 'Logged in successfully !'
            return render template('index.html', msg=msg)
        else:
            msg = 'Incorrect username / password !'
    return render template('login.html', msg=msg)
@app.route('/logout')
def logout():
session.pop('loggedin', None)
session.pop('id', None)
session.pop('username', None)
return redirect(url for('login'))
@app.route('/register', methods=['GET', 'POST'])
def register():
    msg = ''
    if request.method == 'POST' and 'username' in
    request.form and 'password' in request.form and
    'email' in request.form and 'address' in
    request.form and 'city' in request.form and
    'country' in request.form and 'postalcode'
    in request.form and 'organisation' in request.form:
        username = request.form['username']
        password = request.form['password']
        email = request.form['email']
```

```
organisation = request.form['organisation']
       address = request.form['address']
       city = request.form['city']
       state = request.form['state']
       country = request.form['country']
       postalcode = request.form['postalcode']
       cursor = mysql.connection.cursor(MySQLdb.cursors.DictCursor)
       cursor.execute(
            'SELECT * FROM accounts WHERE username = % s', (username, ))
       account = cursor.fetchone()
       if account:
           msg = 'Account already exists !'
       elif not re.match(r'[^@]+@[^@]+\.[^@]+', email):
           msg = 'Invalid email address !'
       elif not re.match(r'[A-Za-z0-9]+', username):
           msg = 'name must contain only characters and numbers !'
       else:
           cursor.execute('INSERT INTO accounts VALUES \
           (username, password, email,
                           organisation, address, city,
                           state, country, postalcode, ))
           mysql.connection.commit()
           msg = 'You have successfully registered !'
   elif request.method == 'POST':
       msg = 'Please fill out the form !'
   return render template('register.html', msg=msg)
@app.route("/index")
def index():
   if 'loggedin' in session:
       return render template("index.html")
   return redirect(url for('login'))
@app.route("/display")
def display():
   if 'loggedin' in session:
       cursor = mysql.connection.cursor(MySQLdb.cursors.DictCursor)
       cursor.execute('SELECT * FROM accounts WHERE id = % s',
                      (session['id'], ))
       account = cursor.fetchone()
       return render template("display.html", account=account)
   return redirect(url for('login'))
@app.route("/update", methods=['GET', 'POST'])
def update():
```

```
msg = ''
   if 'loggedin' in session:
       if request.method == 'POST' and 'username' in request.form
        and 'password' in request.form and 'email' in request.form and
        'address' in request.form and 'city' in request.form and 'country'
        in request.form and 'postalcode' in request.form and
        'organisation' in request.form:
            username = request.form['username']
            password = request.form['password']
            email = request.form['email']
            organisation = request.form['organisation']
            address = request.form['address']
            city = request.form['city']
            state = request.form['state']
            country = request.form['country']
            postalcode = request.form['postalcode']
            cursor = mysql.connection.cursor(MySQLdb.cursors.DictCursor)
            cursor.execute(
                'SELECT * FROM accounts WHERE username = % s',
                      (username, ))
            account = cursor.fetchone()
            if account:
                msg = 'Account already exists !'
            elif not re.match(r'[^@]+@[^@]+\.[^@]+', email):
               msg = 'Invalid email address !'
            elif not re.match(r'[A-Za-z0-9]+', username):
               msg = 'name must contain only characters and numbers !'
            else:
                cursor.execute('UPDATE accounts SET username =% s,\
                password =% s, email =% s, organisation =% s, \
                address =% s, city =% s, state =% s, \
                country =% s, postalcode =% s WHERE id =% s', (
                    username, password, email, organisation,
                  address, city, state, country, postalcode,
                  (session['id'], ), ))
                mysql.connection.commit()
                msg = 'You have successfully updated !'
        elif request.method == 'POST':
            msg = 'Please fill out the form !'
        return render template("update.html", msg=msg)
   return redirect(url for('login'))
if name == " main ":
    app.run(host="localhost", port=int("5000"))
```

Step 5: Create the folder 'templates'. create the files 'index.html', 'display.html', 'update.html', 'login.html', and 'register.html' inside the 'templates' folder.

Step 6: Open the 'login.html' file and write the code given below. In 'login.html', we have two fields i.e. username and password. When a user enters the correct username and password, it will route you to the index page otherwise 'Incorrect username/password' is displayed.

```
<!--Store this code in 'login.html' file inside the 'templates' folder-->
<html>
    <head>
        <meta charset="UTF-8">
        <title> Login </title>
        <link rel="stylesheet" href="../static/style.css">
    </head>
    <body>
        <div class="logincontent" align="center">
            <div class="logintop">
                <h1>Login</h1>
            </div></br></br></br></br>
            <div class="loginbottom">
            <form action="{{ url_for('login')}}" method="post" autocomplete="off"</pre>
            <div class="msg">{{ msg }}</div>
            <input type="text" name="username" placeholder="Enter Your Username"</pre>
            input type="password" name="password" placeholder="Enter Your Passwo
            <input type="submit" class="btn" value="Login">
            </form></br></br>
            New to this page? <a class="worddark" href="{{ ur</pre>
            </div>
        </div>
    </body>
</html>
```

Step 7: Open 'register.html' file and write the code given below. In 'register.html', we have nine fields i.e. username, password, email, organisation, address, city, state, country, postal code. When user enters all the information, it stored the data in the database and 'Registration successful' is displayed.

html

```
<!--Store this code in 'register.html' file inside the 'templates' folder-->
<html>
    <head>
        <meta charset="UTF-8">
        <title> register </title>
        <link rel="stylesheet" href="../static/style.css">
    </head>
    <body>
        <div class="registercontent" align="center">
            <div class="registertop">
                <h1>Register</h1>
            </div></br></br>
            <div class="registerbottom">
            <form action="{{ url for('register')}}" method="post" autocomplete="o</pre>
            <div class="msg">{{ msg }}</div>
            <input type="text" name="username" placeholder="Enter Your Username"</pre>
            input type="password" name="password" placeholder="Enter Your Passwo
            <input type="email" name="email" placeholder="Enter Your Email ID" cl</pre>
            input type="text" name="organisation" placeholder="Enter Your Organi
            <input type="text" name="address" placeholder="Enter Your Address" cl</pre>
            <input type="text" name="city" placeholder="Enter Your City" class="t</pre>
            <input type="text" name="state" placeholder="Enter Your State" class=</pre>
            input type="text" name="country" placeholder="Enter Your Country" cl
            <input type="text" name="postalcode" placeholder="Enter Your Postal C</pre>
            <input type="submit" class="btn" value="Register">
            </form>
            Already have account? <a class="worddark" href="{</pre>
            </div>
        </div>
    </body>
</html>
```

Step 8: Open 'index.html' file and write the code given below. When a user logs in successfully, this page is displayed, and 'Logged in successful!' is displayed.

```
<!--Store this code in 'index.html' file inside the 'templates' folder-->
<html lang="en">
```

```
<head>
       <title>index</title>
       <link rel="stylesheet" href="../static/style.css">
    </head>
   <body bgcolor="#e6ffee">
       <div class="one">
           <div class="two">
               <h1>Side Bar</h1>
               <u1>
                   class="active"><a href="{{url for('index')}}">Index</a></!
                   <a href="{{url for('display')}}">Display</a>
                   <a href="{{url_for('update')}}">Update</a>
                   <a href="{{url for('logout')}}">Log out</a>
               </div>
           <div class="content" align="center">
               <div class="topbar">
                   <h2>Welcome!! You are in Index Page!! </h2>
               </div></br></br>
               <div class="contentbar">
                   <div class="msg">{{ msg }}</div>
               </div>
           </div>
       </div>
   </body>
</html>
```

Step 9: Open 'display.html' file and write the code given below. Here, the user information stored in database are displayed.

```
<h1>Side Bar</h1>
   <u1>
      <a href="{{url for('index')}}">Index</a>
      class="active"><a href="{{url_for('display')}}">Display</r></r/>
      <a href="{{url for('update')}}">Update</a>
      <a href="{{url for('logout')}}">Log out</a>
  </div>
<div class="content" align="center">
  <div class="topbar">
      <h2>Welcome!! You are in Display Page!! </h2>
  </div> </br>
   <div class="contentbar">
      <h1>Your Details</h1> </br>
      {% block content %}
         <div class="border">
            </br></br></br>
               >
                  Username:
                  {{ account['username'] }}
               <tr>
                  Password:
                  {{ account['password'] }}
               </tr>
               Email ID:
                  {{ account['email'] }}
               >
                  Organisation:
                  {{ account['organisation'] }}
               </tr>
               >
                  Address:
                  {{ account['address'] }}
               City:
                  {{ account['city'] }}
               State:
                  {{ account['state'] }}
               Country:
                  {{ account['country'] }}
```

Step 10: Open 'update.html' file and write the code given below. The user can update his/her data which also updates the database.

```
<!--Store this code in 'update.html' file inside the 'templates' folder-->
<html lang="en">
   <head>
       <title>update</title>
       <link rel="stylesheet" href="../static/style.css">
    </head>
    <body bgcolor="#e6ffee">
       <div class="one">
           <div class="two">
               <h1>Side Bar</h1>
               <u1>
                   <a href="{{url for('index')}}">Index</a>
                   <a href="{{url_for('display')}}">Display</a>
                   class="active"><a href="{{url_for('update')}}">Update</a></a>
                   <a href="{{url for('logout')}}">Log out</a>
               </div>
           <div class="content" align="center">
               <div class="topbar">
                   <h2>Welcome!! You are in Update Page!! </h2>
               </div></br></br>
               <div class="contentbar">
               <h1>Fill Your Details to Update</h1></br>
           <form action="{{ url_for('update') }}" method="post" autocomplete="of</pre>
                   <div class="msg">{{ msg }}</div>
```

```
<input type="text" name="username" placeholder="Enter Your Us</pre>
                      <input type="password" name="password" placeholder="Enter You</pre>
                     <input type="email" name="email" placeholder="Enter Your Emai</pre>
                      <input type="text" name="organisation" placeholder="Enter You</pre>
                     <input type="text" name="address" placeholder="Enter Your Add</pre>
                     <input type="text" name="city" placeholder="Enter Your City"</pre>
                      <input type="text" name="state" placeholder="Enter Your State</pre>
                      <input type="text" name="country" placeholder="Enter Your Cou</pre>
                      <input type="text" name="postalcode" placeholder="Enter Your</pre>
                     <input type="submit" class="btn" value="Update">
             </form>
                 </div>
             </div>
        </div>
    </body>
</html>
```

Step 11: Create the folder 'static'. create the file 'style.css' inside the 'static' folder and paste the given CSS code.

CSS

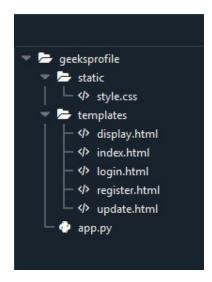
```
/*Store this code in 'style.css' file inside the 'static' folder*/
.logincontent{
    margin: 0 auto;
    height: 500px;
    width: 400px;
    background-color: #e6ffee;
    border-radius: 10px;
}
.registercontent{
    margin: 0 auto;
    height: 720px;
    width: 400px;
    background-color: #e6ffee;
    border-radius: 10px;
}
.logintop{
    height: 60px;
    width: 400px;
```

```
background-color: #009933;
    color: #ffffff;
}
.registertop{
    height: 60px;
    width: 400px;
    background-color: #009933;
    color: #ffffff;
}
.textbox{
    padding: 10px 40px;
    background-color: #009933;
    border-radius: 10px;
}
::placeholder {
    color: #FFFFFF;
    opacity: 1;
    font-style: oblique;
    font-weight: bold;
}
.btn {
    padding: 10px 40px;
    background-color: #009933;
    color: #FFFFFF;
    font-style: oblique;
    font-weight: bold;
    border-radius: 10px;
}
.worddark{
    color: #009933;
    font-style: oblique;
    font-weight: bold;
}
.wordlight{
    color: #FFFFFF;
    font-style: oblique;
    font-weight: bold;
}
    margin: 0;
    padding: 0;
    box-sizing: border-box;
```

```
list-style: none;
    text-decoration: none;
    font-family: 'Josefin Sans', sans-serif;
}
.one{
    display: flex;
    position: relative;
}
.one .two{
    width: 225px;
    height: 100%;
    background: #009933;
    padding: 30px 0px;
    position: fixed;
}
.one .two h1{
    color: #fff;
    text-transform: uppercase;
    text-align: center;
    margin-bottom: 30px;
    font-style: oblique;
   font-weight: bold;
}
.one .two h2{
   color: #fff;
   text-align: center;
}
.one .two .active{
     background: #0a8032;
.one .two ul li{
   text-align: center;
    padding: 15px;
    border-bottom: 0.1px solid white;
    border-top: 0.1px solid white;
.one .two ul li a{
   color: #ffffff;
   display: block;
.one .two ul li a .side{
```

```
width: 25px;
    align:center;
}
.one .content{
    width: 100%;
    margin-left: 200px;
}
.one .content .topbar{
    text-align: center;
    padding: 20px;
    background: #00b33c;
    color: white;
}
.one .content .contentbar{
    margin: auto;
}
.one .content .contentbar h1{
    color: #11a844;
    text-align: center;
    font-style: oblique;
    font-weight: bold;
}
```

Step 12: The project structure will look like this.



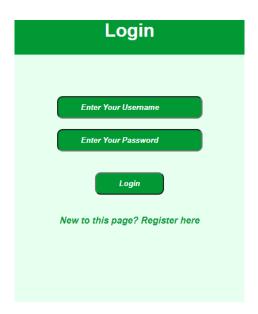
Run the Project

- **Step-1:** Run the server.
- Step-2: Browse the URL 'localhost:5000'.
- **Step-3:** The output web page will be displayed.

Testing of the Application

- **Step-1:** If you are new user, go to sign up page and fill the details.
- **Step-2:** After registration, go to login page. Enter your username and password and sign in.
- **Step-3:** If your login is successful, you will be moved to index page and your name will be displayed.
- **Step-4:** You can view your profile details in display page and also you can update your details in update page.

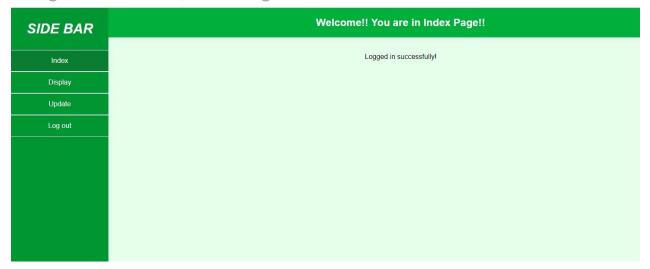
Output: Login page:



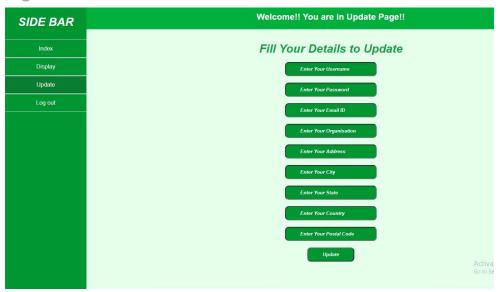
Register page:



If login is successful, Index Page:



Update Page:



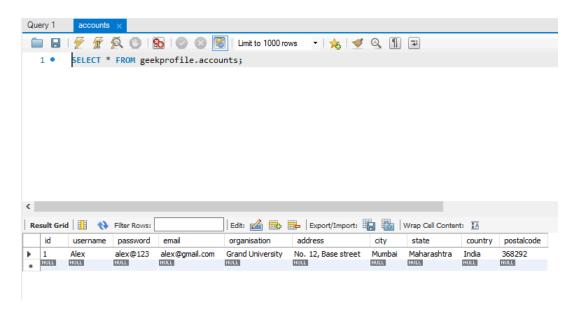
Before updation, Display page:



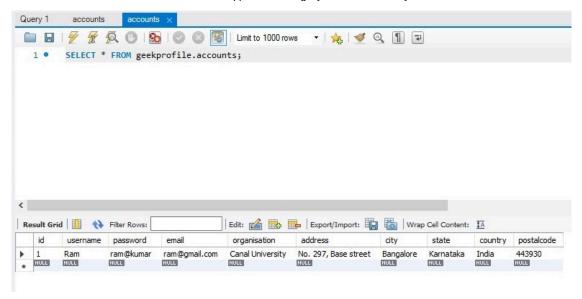
After updation, Display page:



Database – Before update:



Database – After update:



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