Login and Registration Project Using Flask and MySQL

INTRODUCTION:

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. Pre-requisite: Knowledge of Python, MySQL Workbench and basics of Flask Framework. Python and MySQL Workbench should be installed in the system. Visual studio code or Spyder or any code editor to work on the application.
Technologies used in the project: Flask framework, MySQL Workbench.

Open MYSQL workbench:

```
create database project
use project;
create table accounts(
id int(11) not null auto_increment,
username varchar(50) not null,
password varchar(255) not null,
email varchar(100) not null,
primary key(id)
) auto_increment=2 default charset=utf8;
```

CODE:

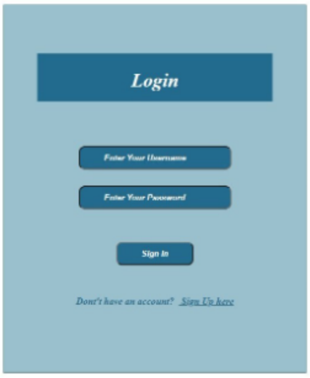
```
# Store this code in 'app.py' file

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'] = 'your password'
app.config['MYSQL_DB'] = 'PROJECT'
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(MySQLdb.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 :
        username = request.form['username']
        password = request.form['password']
        email = request.form['email']
        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 = 'Username must contain only characters and numbers !'
        elif not username or not password or not email:
            msg = 'Please fill out the form !'
        else:
            cursor.execute('INSERT INTO accounts VALUES (NULL, % s, % s, % s)',
(username, password, email, ))
            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)
```

```
#Store this code in 'login.html' file inside the 'templates' folder

<html>
    <head>
        <meta charset="UTF-8">
        <title> Login </title>
        <link rel="stylesheet" href="{{ url_for('static', filename='style.css') }}">
    </head>
    <body></br></br></br></br></br>
        <div align="center">
        <div align="center" class="border">
            <div class="header">
                <h1 class="word">Login</h1>
            </div></br></br></br>
            <h2 class="word">
                <form action="{{ url_for('login') }}" method="post">
                <div class="msg">{{ msg }}</div>
                    <input id="username" name="username" type="text"
placeholder="Enter Your Username" class="textbox"/></br></br>
                    <input id="password" name="password" type="password"
placeholder="Enter Your Password" class="textbox"/></br></br></br>
                    <input type="submit" class="btn" value="Sign In"></br></br>
                </form>
            </h2>
            <p class="bottom">Don't have an account? <a class="bottom"
href="{{url_for('register')}}"> Sign Up here</a></p>
        </div>
        </div>
    </body>
</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="{{ url_for('static', filename='style.css') }}">

    </head>
    <body></br></br></br></br></br>
        <div align="center">
        <div align="center" class="border">
            <div class="header">
                <h1 class="word">Register</h1>
            </div></br></br></br>
            <h2 class="word">
                <form action="{{ url_for('register') }}" method="post">
                <div class="msg">{{ msg }}</div>
                    <input id="username" name="username" type="text"
placeholder="Enter Your Username" class="textbox"/></br></br>
```

```
                    <input id="password" name="password" type="password" placeholder="Enter Your Password" class="textbox"/></br></br>
                    <input id="email" name="email" type="text" placeholder="Enter Your Email ID" class="textbox"/></br></br>
                    <input type="submit" class="btn" value="Sign Up"></br>
                </form>
            </h2>
            <p class="bottom">Already have an account? <a class="bottom" href="{{url_for('login')}}"> Sign In here</a></p>
        </div>
        </div>
    </body>
</html>

# Store this code in 'index.html' file inside the 'templates' folder

<html>
    <head>
        <meta charset="UTF-8">
        <title> Index </title>
        <link rel="stylesheet" href="{{ url_for('static', filename='style.css') }}">

    </head>
    <body></br></br></br></br></br>
        <div align="center">
        <div align="center" class="border">
            <div class="header">
                <h1 class="word">Index</h1>
            </div></br></br></br>
                <h1 class="bottom">
                    Hi {{session.username}}!!</br></br> Welcome to the index page...
                </h1></br></br></br>
                <a href="{{ url_for('logout') }}" class="btn">Logout</a>
        </div>
        </div>
    </body>
</html>

# Store this code in 'style.css' file inside the 'static' folder

            .header{
                padding: 5px 120px;
                width: 150px;
                height: 70px;
                background-color: #236B8E;
            }

            .border{
                padding: 80px 50px;
                width: 400px;
                height: 450px;
                border: 1px solid #236B8E;
                border-radius: 0px;
                background-color: #9AC0CD;
            }

            .btn {
                padding: 10px 40px;
                background-color: #236B8E;
                color: #FFFFFF;
                font-style: oblique;
                font-weight: bold;
                border-radius: 10px;
            }

            .textbox{
                padding: 10px 40px;
                background-color: #236B8E;
                text-color: #FFFFFF;
                border-radius: 10px;
            }

            ::placeholder {
                color: #FFFFFF;
                opacity: 1;
                font-style: oblique;
                font-weight: bold;
            }

            .word{
                color: #FFFFFF;
                font-style: oblique;
                font-weight: bold;
            }

            .bottom{
                color: #236B8E;
                font-style: oblique;
                font-weight: bold;
            }
```

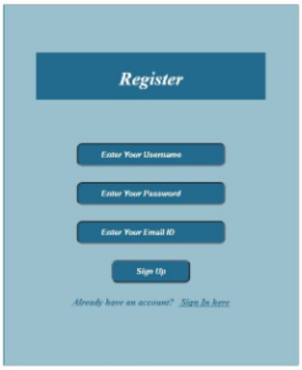
OUTPUT:

Login Page:



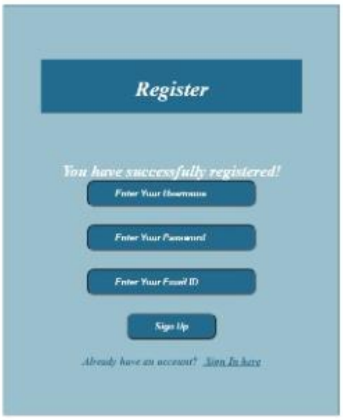
Don't have an account? Sign Up here

Registration page:



Already have an account? Sign In here

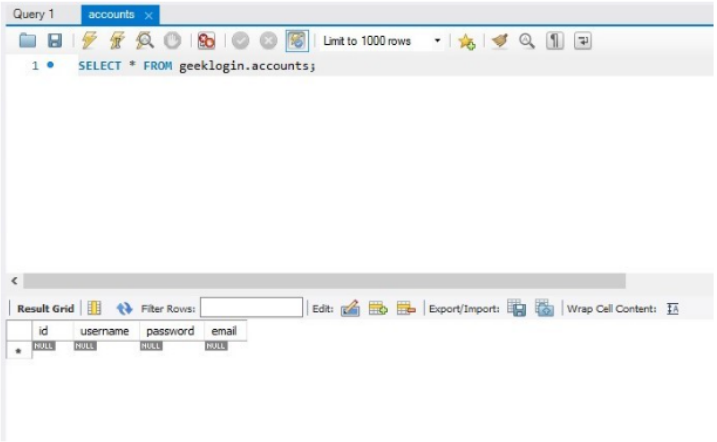
If registration successful:



You have successfully registered!

Already have an account? Sign In here

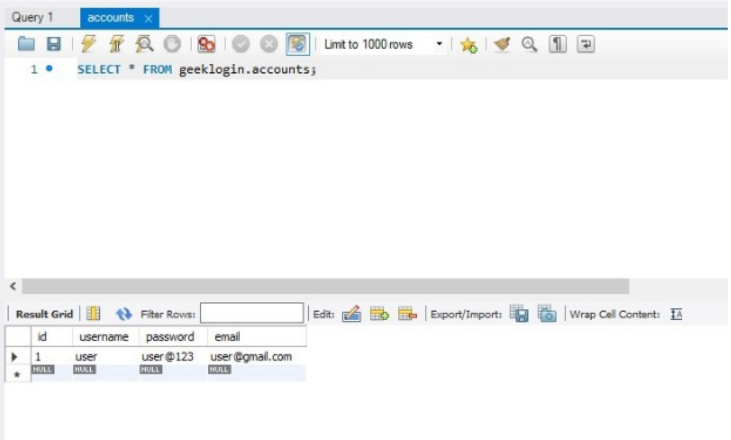
Before registration, Database table:



```
1 • SELECT * FROM geeklogin.accounts;
```

	id	username	password	email
*	NULL	NULL	NULL	NULL

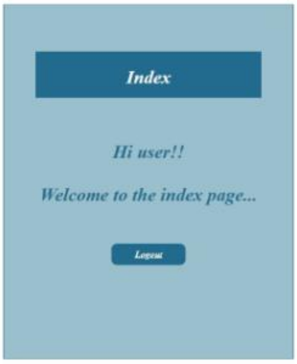
After registration, Database table:



```
1 • SELECT * FROM geeklogin.accounts;
```

	id	username	password	email
▶	1	user	user@123	user@gmail.com
*	NULL	NULL	NULL	NULL

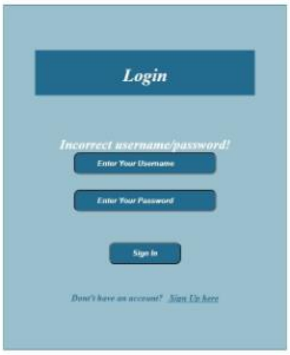
If login successful, Indexpage is displayed:


Index

Hi user!!

Welcome to the index page...

If Login fails:



Incorrect username/password!

Don't have an account? Sign Up here