Assignment - 2

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Project Name	Project - Personal Expense Tracker App

1. Create a User table with users with
email,username,roll number, password.

2. Perform UPDATE,DELETE Queries with user
table

3. Connect python code to db2.

4. Create a flask app with registration page, login
page and welcome page. By default load the
registration page once the user enters all the
fields, store the data in the database and navigate
to the login page to authenticate user username and
password. If the user is valid, show the welcome
page.

Source Code:

app.py
```
from flask import Flask, render_template, url_for,
redirect, flash
from flask_login import UserMixin, login_user,
LoginManager, login_required, logout_user,
current_user
from wtforms.validators import InputRequired, Length,
ValidationError
from flask_bcrypt import Bcrypt
from wtforms import StringField, PasswordField, SubmitField,
IntegerField
from flask_wtf import FlaskForm
```

```python
import sqlite3


app = Flask(__name__)
bcrypt = Bcrypt(app)
app.config['SECRET_KEY'] = 'B7-1A3E'



login_manager = LoginManager()
login_manager.init_app(app)
login_manager.login_view = 'login'



@login_manager.user_loader
def load_user(user_id):
    conn = connect_db()
      user = conn.execute('SELECT * FROM user
        WHERE id = ?', (user_id,)).fetchone()
    usr_obj = User(user[0], user[1], user[2])
    return usr_obj



def connect_db():
    conn = sqlite3.connect('database.db')
    return conn

class User:

    def __init__(self, id, email, username):
        self.id = id
        self.username = username
        self.email = email

    def to_json(self):
        return {"username": self.username,
                "email": self.email}

    def is_authenticated(self):
        return True

    def is_active(self):
        return True
```

```python
    def is_anonymous(self):
        return False


    def get_id(self):
        return str(self.id)
class RegisterForm(FlaskForm):
    email = StringField(validators=[
        InputRequired(), Length(min=4, max=50)],
render_kw={"placeholder": "Email"})
    username = StringField(validators=[ InputRequired(),
    Length(min=4, max=20)],
render_kw={"placeholder": "Username"})
    rollnumber = StringField(validators=[InputRequired(),
    Length(min=5, max=10)], render_kw={"placeholder":
    "RollNumber"})
    password = PasswordField(validators=[ InputRequired(),
    Length(min=8, max=20)],
render_kw={"placeholder": "Password"})


    submit = SubmitField('Register')


    def validate_username(self, username):
        conn = connect_db()
        existing_user_username = conn.execute('SELECT *
FROM user WHERE username = ?', (username.data,)).fetchone()
        conn.commit()
        conn.close()
        if existing_user_username:
            raise ValidationError( 'That username already
            exists. Try another one.')



class LoginForm(FlaskForm):
    username = StringField(validators=[ InputRequired(),
    Length(min=4, max=20)],
render_kw={"placeholder": "Username"})


    password = PasswordField(validators=[InputRequired(),
    Length(min=8, max=20)],
render_kw={"placeholder": "Password"})


    submit = SubmitField('Login')
class UpdateForm(FlaskForm):
```

```python
    username = StringField(validators=[ InputRequired(),
    Length(min=4, max=20)],
render_kw={"placeholder": "Username"})


    oldpassword = PasswordField(validators=[ InputRequired(),
    Length(min=8, max=20)], render_kw={"placeholder":
    "Previous Password"})


    password = PasswordField(validators=[ InputRequired(),
    Length(min=8, max=20)],
render_kw={"placeholder": "Password"})


    submit = SubmitField('Update')



@app.route('/')
def home():
    return render_template('home.html')



@app.route('/login', methods=['GET', 'POST'])
def login():
    form = LoginForm()
    if form.validate_on_submit():
        conn = connect_db()
          user = conn.execute('SELECT * FROM user WHERE
        username = ?', (form.username.data,)).fetchone()
        conn.commit()
        conn.close()
        if user:
            if bcrypt.check_password_hash(user[4],
                form.password.data): usr_obj =
                User(user[0], user[1], user[2])
                login_user(usr_obj)
    return redirect(url_for('welcome'))

            else:
                print('Hi')
    flash(f'Invalid credentials, check and try logging in
again.', 'danger')
    return redirect(url_for('login'))
```

```python
        return render_template('login.html', form=form)



    @app.route('/welcome', methods=['GET', 'POST'])
    @login_required
    def welcome():
        return render_template('welcome.html')



    @app.route('/logout', methods=['GET', 'POST'])
    @login_required
    def logout():
        logout_user()
        return redirect(url_for('login'))



    @ app.route('/register', methods=['GET', 'POST'])
    def register():
        form = RegisterForm()
        conn = connect_db()
        if form.validate_on_submit():
            hashed_password =
    bcrypt.generate_password_hash(form.password.data)
            conn.execute('INSERT INTO user (email, username,
    roll_number, pass_word) VALUES (?, ?, ?, ?)',
        (form.email.data, form.username.data,
    form.rollnumber.data, hashed_password))
            conn.commit()
            conn.close()
            return redirect(url_for('login'))
        return render_template('register.html', form=form)



    @ app.route('/update', methods=['GET', 'POST'])
    def update():
        form = UpdateForm()
        conn = connect_db()
        if form.validate_on_submit():
            conn = connect_db()
            user = conn.execute('SELECT * FROM user WHERE
            username = ?', (form.username.data,)).fetchone()
```

```python
        if user:
            if bcrypt.check_password_hash(user[4],
                form.oldpassword.data): print(user)
    hashed_password1 = bcrypt.generate_password_hash(
                form.password.data)
                conn.execute('UPDATE user set pass_word = ?
where username = ?',
                    (hashed_password1, form.username.data))
                conn.commit()
                conn.close()
    flash(f'Password changed successfully.', 'success')
    return redirect(url_for('home'))
            else:
    flash(f'Invalid password, Enter valid password.',
'danger')
    return redirect(url_for('update'))
        else:
 flash(f'Invalid user, Enter valid User.', 'danger')
            return redirect(url_for('update'))
    return render_template('update.html', form=form)


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

schema.sql

```sql
DROP TABLE IF EXISTS user;

CREATE TABLE user (
    id INTEGER PRIMARY KEY AUTOINCREMENT,
    email TEXT NOT NULL,
    username TEXT NOT NULL,
    roll_number INTEGER NOT NULL,
    pass_word TEXT NOT NULL
);
```

Init_db.py

```python
import sqlite3

conn = sqlite3.connect('database.db')

with
    open('schema.sql
    ') as f:
    conn.executescri
    pt(f.read())

conn.commit()
conn.close()
```

Style.css

```css
.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 {
```

```css
  padding: 10px 40px;
  background-col
  or: #236b8e;
  text-shadow:
  #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;
}

body {
  background: #fafafa;
  color: #333333;
  margin-top: 5rem;
}

h1, h2, h3,
  h4, h5, h6
  { color:
  #444444;
}

.bg-steel {
  background-col
```

```css
or: #5f788a; }
.site-header .navbar-nav
  .nav-link { color:
  #cbd5db;
}

.site-header .navbar-nav
  .nav-link:hover { color:
  #ffffff;
}

.site-header .navbar-nav
  .nav-link.active {
  font-weight: 500;
}

.content-section {
  background: #ffffff;
  padding: 10px 20px;
  border: 1px solid #dddddd;
  border-radius: 3px;
  margin-bottom: 20px;
}

.article-title {
  color: #444444;
}

a.article-title:hover {
  color: #428bca;
  text-decoration: none;
}

.article-content {
  white-space: pre-line;
}

.article-img {
  height: 65px;
  width: 65px;
  margin-right: 16px;
```

```
      }

    .article-metadata {
      padding-bottom: 1px;
      margin-bottom: 4px;
      border-bottom: 1px
    solid #e3e3e3 }

    .article-metada
      ta a:hover {
      color: #333;
      text-decoration: none;
    }

    .article-svg {
      width: 25px;
      height: 25px;
      vertical-align: middle;
    }

    .account-img {
      height: 125px;
      width: 125px;
      margin-right: 20px;
      margin-bottom: 16px;
    }

    .account-heading {
      font-size: 2.5rem;
    }
```

Templates:

Welcome.html

```
<!DOCTYPE html>
<html lang="en">

<head>
    <link rel="stylesheet"
href="https://cdn.jsdelivr.net/npm/bootstrap@4.3.1/dist/css/bo
```

```html
otstrap.min. css"
integrity="sha384-ggOyR0iXCbMQv3Xipma34MD+dH/1fQ784/j6cY/iJTQU
OhcWr7x9JvoR xT2MZw1T" crossorigin="anonymous">
    <link rel="stylesheet" type="text/css" href="{{
url_for('static', filename='style.css') }}" />
    <meta charset="UTF-8">
    <meta http-equiv="X-UA-Compatible" content="IE=edge">
    <meta name="viewport" content="width=device-width,
    initial-scale=1.0"> <title>Welcome Page</title>
</head>

<body>
    <h1>Welcome!</h1> <br>
<a href="{{url_for('logout')}}">Press here to logout</a>

    <script
src="https://code.jquery.com/jquery-3.3.1.slim.min.js"
integrity="sha384-q8i/X+965DzO0rT7abK41JStQIAqVgRVzpbzo5smXKp4
YfRvH+8abtTE 1Pi6jizo" crossorigin="anonymous"></script>
    <script
src="https://cdn.jsdelivr.net/npm/popper.js@1.14.7/dist/umd/po
pper.min.js"
integrity="sha384-UO2eT0CpHqdSJQ6hJty5KVphtPhzWj9WO1clHTMGa3JD
ZwrnQq4sF86d IHNDz0W1" crossorigin="anonymous"></script>
    <script
src="https://cdn.jsdelivr.net/npm/bootstrap@4.3.1/dist/js/boot
strap.min.js "
integrity="sha384-JjSmVgyd0p3pXB1rRibZUAYoIIy6OrQ6VrjIEaFf/nJG
zIxFDsf4x0xI M+B07jRM" crossorigin="anonymous"></script>
</body>

</html>
```

Login.html

```html
<!DOCTYPE html>
<html lang="en">
```

```html
<head>
    <meta charset="UTF-8">
    <meta http-equiv="X-UA-Compatible" content="IE=edge">
    <meta name="viewport" content="width=device-width,
    initial-scale=1.0"> <title>Login</title>
    <link rel="stylesheet"
href="https://cdn.jsdelivr.net/npm/bootstrap@4.3.1/dist/css/bo
otstrap.min. css"
integrity="sha384-ggOyR0iXCbMQv3Xipma34MD+dH/1fQ784/j6cY/iJTQU
OhcWr7x9JvoR xT2MZw1T" crossorigin="anonymous">
    <link rel="stylesheet" type="text/css" href="{{
url_for('static', filename='style.css') }}" />
</head>

<body>
    <div class="col-md-8">
        {% with messages =
            get_flashed_messages(with_categories=true) %} {%
            if messages %}
    {% for category, message in messages %}
        <div class="alert alert-{{category}}">
                    {{ message }}
                </div>
            {% endfor %}
          {% endif %}
        {% endwith %}
        {% block content %} {% endblock %}
    </div>

    <h1>Login Page</h1> <br>

    <form method="POST" action="">
        {{ form.hidden_tag() }}
        <fieldset class="form-group">
            <div>
    {{ form.username.label(class="form-control-label") }}
                {% if form.username.errors %}
        {{ form.username(class="form-control form-control-lg
is-invalid") }}
        <div class="invalid-feedback">
            {% for error in form.username.errors %}
```

```
                    <span>{{ error }}</span>
                            {% endfor %}
                    </div>
                {% else %}
        {{ form.username(class="form-control form-control-lg")
}}
                {% endif %}
            </div>



            <div>
    {{ form.password.label(class="form-control-label") }}


                {% if form.password.errors %}
        {{ form.password(class="form-control form-control-lg
is-invalid") }}
        <div class="invalid-feedback">
            {% for error in form.password.errors %}
                <span>{{ error }}</span>
                            {% endfor %}
                    </div>
                {% else %}
        {{ form.password(class="form-control form-control-lg")
}}
                {% endif %}
            </div>


        </fieldset>
        <div class="form-group">
{{ form.submit(class="btn btn-outline-info") }}
        </div>


        <small class="text-muted ml-2">
            <a href='{{url_for('register')}}'>Do not have an
account? Sign Up?</a>
        </small>


    </form>


    <script
src="https://code.jquery.com/jquery-3.3.1.slim.min.js"
```

```
integrity="sha384-q8i/X+965DzO0rT7abK41JStQIAqVgRVzpbzo5smXKp4
YfRvH+8abtTE 1Pi6jizo" crossorigin="anonymous"></script>
    <script
src="https://cdn.jsdelivr.net/npm/popper.js@1.14.7/dist/umd/po
pper.min.js"
integrity="sha384-UO2eT0CpHqdSJQ6hJty5KVphtPhzWj9WO1clHTMGa3JD
ZwrnQq4sF86d IHNDz0W1" crossorigin="anonymous"></script>
    <script
src="https://cdn.jsdelivr.net/npm/bootstrap@4.3.1/dist/js/boot
strap.min.js "
integrity="sha384-JjSmVgyd0p3pXB1rRibZUAYoIIy6OrQ6VrjIEaFf/nJG
zIxFDsf4x0xI M+B07jRM" crossorigin="anonymous"></script>
</body>

</html>
```

Home.html

```
<!DOCTYPE html>
<html lang="en">

<head>
    <meta charset="UTF-8">
    <meta http-equiv="X-UA-Compatible" content="IE=edge">
    <link rel="stylesheet"
href="https://cdn.jsdelivr.net/npm/bootstrap@4.3.1/dist/css/bo
otstrap.min. css"
integrity="sha384-ggOyR0iXCbMQv3Xipma34MD+dH/1fQ784/j6cY/iJTQU
OhcWr7x9JvoR xT2MZw1T" crossorigin="anonymous">
    <link rel="stylesheet" type="text/css" href="{{
url_for('static', filename='style.css') }}" />

    <meta name="viewport" content="width=device-width,
    initial-scale=1.0"> <title>Home</title>
</head>

<body>
    <div class="col-md-8">
        {% with messages =
            get_flashed_messages(with_categories=true) %} {%
            if messages %}
```

```
            {% for category, message in messages %}
                <div class="alert alert-{{category}}">
                            {{ message }}
                    </div>
                {% endfor %}
            {% endif %}
        {% endwith %}
        {% block content %} {% endblock %}
    </div>
    <h1>Flask Application</h1> <br>
    <a href="{{ url_for('login') }}">Login
    Page</a><br> <br> <a href="{{ url_for('register')
    }}">Register Page</a><br> <br> <a href="{{
    url_for('update') }}">Update Password</a><br> <br>

    <script
src="https://code.jquery.com/jquery-3.3.1.slim.min.js"
integrity="sha384-q8i/X+965DzO0rT7abK41JStQIAqVgRVzpbzo5smXKp4
YfRvH+8abtTE 1Pi6jizo" crossorigin="anonymous"></script>
    <script
src="https://cdn.jsdelivr.net/npm/popper.js@1.14.7/dist/umd/po
pper.min.js"
integrity="sha384-UO2eT0CpHqdSJQ6hJty5KVphtPhzWj9WO1clHTMGa3JD
ZwrnQq4sF86d IHNDz0W1" crossorigin="anonymous"></script>
    <script
src="https://cdn.jsdelivr.net/npm/bootstrap@4.3.1/dist/js/boot
strap.min.js "
integrity="sha384-JjSmVgyd0p3pXB1rRibZUAYoIIy6OrQ6VrjIEaFf/nJG
zIxFDsf4x0xI M+B07jRM" crossorigin="anonymous"></script>
</body>

</html>
```

Register.html

```
<!DOCTYPE html>
<html lang="en">

<head>
    <link rel="stylesheet"
```

```
href="https://cdn.jsdelivr.net/npm/bootstrap@4.3.1/dist/css/bo
otstrap.min. css"
integrity="sha384-ggOyR0iXCbMQv3Xipma34MD+dH/1fQ784/j6cY/iJTQU
OhcWr7x9JvoR xT2MZw1T" crossorigin="anonymous">
    <link rel="stylesheet" type="text/css" href="{{
url_for('static', filename='style.css') }}" />
    <meta charset="UTF-8">
    <meta http-equiv="X-UA-Compatible" content="IE=edge">
    <meta name="viewport" content="width=device-width,
    initial-scale=1.0"> <title>Register</title>
</head>

<body>
    <h1>Register Page</h1> <br>

    <!-- <form method="POST" action="">
        {{ form.hidden_tag() }}
        {{ form.email }} <br> <br>
        {{ form.username }} <br> <br>
        {{ form.rollnumber }} <br> <br>
        {{ form.password }} <br> <br>
        {{ form.submit }} <br> <br>
    </form> -->

    <form method="POST" action="">
        {{ form.hidden_tag() }}
        <fieldset class="form-group">
 <!-- <legend class="border-bottom mb-4">Registration
Page</legend> -->

            <div>
    {{ form.email.label(class="form-control-label") }}
            {% if form.email.errors %}
        {{ form.email(class="form-control form-control-lg
is-invalid") }}
        <div class="invalid-feedback">
            {% for error in form.email.errors %}
                <span>{{ error }}</span>
                    {% endfor %}
                </div>
            {% else %}
```

```
                {{ form.email(class="form-control form-control-lg") }}
                    {% endif %}
                </div>



                <div>
        {{ form.username.label(class="form-control-label") }}


                    {% if form.username.errors %}
            {{ form.username(class="form-control form-control-lg
is-invalid") }}
                <div class="invalid-feedback">
                    {% for error in form.username.errors %}
                        <span>{{ error }}</span>
                            {% endfor %}
                        </div>
                    {% else %}
            {{ form.username(class="form-control form-control-lg")
}}
                    {% endif %}
                </div>



                <div>
        {{ form.rollnumber.label(class="form-control-label") }}


                {% if form.rollnumber.errors %}
            {{ form.rollnumber(class="form-control form-control-lg
is-invalid") }}
                <div class="invalid-feedback">
                    {% for error in form.rollnumber.errors %}
                        <span>{{ error }}</span>
                            {% endfor %}
                        </div>
                    {% else %}
            {{ form.rollnumber(class="form-control
form-control-lg") }}
                    {% endif %}
                </div>



                <div>
```

```
                {{ form.password.label(class="form-control-label") }}


                    {% if form.password.errors %}
            {{ form.password(class="form-control form-control-lg
is-invalid") }}
            <div class="invalid-feedback">
                {% for error in form.password.errors %}
                    <span>{{ error }}</span>
                        {% endfor %}
                    </div>
                {% else %}
            {{ form.password(class="form-control form-control-lg")
}}
                    {% endif %}
                </div>


            </fieldset>
            <div class="form-group">
    {{ form.submit(class="btn btn-outline-info") }}
            </div>


            <small class="text-muted ml-2">
                <a href="{{ url_for('login') }}">Already have an
account? Log In</a>
            </small>


    </form>
    <script
src="https://code.jquery.com/jquery-3.3.1.slim.min.js"
integrity="sha384-q8i/X+965DzO0rT7abK41JStQIAqVgRVzpbzo5smXKp4
YfRvH+8abtTE 1Pi6jizo" crossorigin="anonymous"></script>
    <script
src="https://cdn.jsdelivr.net/npm/popper.js@1.14.7/dist/umd/po
pper.min.js"
integrity="sha384-UO2eT0CpHqdSJQ6hJty5KVphtPhzWj9WO1clHTMGa3JD
ZwrnQq4sF86d IHNDz0W1" crossorigin="anonymous"></script>
    <script
src="https://cdn.jsdelivr.net/npm/bootstrap@4.3.1/dist/js/boot
strap.min.js "
integrity="sha384-JjSmVgyd0p3pXB1rRibZUAYoIIy6OrQ6VrjIEaFf/nJG
zIxFDsf4x0xI M+B07jRM" crossorigin="anonymous"></script>
```

```
    </body>

    </html>
```

Update.html

```html
<!DOCTYPE html>
<html lang="en">

<head>
    <meta charset="UTF-8">
    <meta http-equiv="X-UA-Compatible" content="IE=edge">
    <meta name="viewport" content="width=device-width,
    initial-scale=1.0"> <title>Login</title>
    <link rel="stylesheet"
href="https://cdn.jsdelivr.net/npm/bootstrap@4.3.1/dist/css/bo
otstrap.min. css"
integrity="sha384-ggOyR0iXCbMQv3Xipma34MD+dH/1fQ784/j6cY/iJTQU
OhcWr7x9JvoR xT2MZw1T" crossorigin="anonymous">
    <link rel="stylesheet" type="text/css" href="{{
url_for('static', filename='style.css') }}" />
</head>

<body>
    <div class="col-md-8">
        {% with messages =
            get_flashed_messages(with_categories=true) %} {%
            if messages %}
    {% for category, message in messages %}
        <div class="alert alert-{{category}}">
                        {{ message }}
                </div>
                {% endfor %}
            {% endif %}
        {% endwith %}
        {% block content %} {% endblock %}
    </div>

    <h1>Update Password</h1> <br>

    <form method="POST" action="">
```

```
{{ form.hidden_tag() }}
<fieldset class="form-group">
    <div>
{{ form.username.label(class="form-control-label") }}


        {% if form.username.errors %}
{{ form.username(class="form-control form-control-lg
is-invalid") }}
        <div class="invalid-feedback">
            {% for error in form.username.errors %}
                <span>{{ error }}</span>
                    {% endfor %}
                </div>
            {% else %}
{{ form.username(class="form-control form-control-lg")
}}
            {% endif %}
        </div>


        <div>
{{ form.oldpassword.label(class="form-control-label") }}


    {% if form.oldpassword.errors %}
        {{ form.oldpassword(class="form-control
form-control-lg is-invalid") }}
        <div class="invalid-feedback">
            {% for error in form.oldpassword.errors %}
                <span>{{ error }}</span>
                    {% endfor %}
                </div>
                {% else %}
        {{ form.oldpassword(class="form-control
form-control-lg") }}
                {% endif %}
        </div>



        <div>
{{ form.password.label(class="form-control-label") }}


        {% if form.password.errors %}
```

```
        {{ form.password(class="form-control form-control-lg
is-invalid") }}
        <div class="invalid-feedback">
            {% for error in form.password.errors %}
                <span>{{ error }}</span>
                    {% endfor %}
                </div>
            {% else %}
        {{ form.password(class="form-control form-control-lg")
}}
            {% endif %}
        </div>

    </fieldset>
    <div class="form-group">
{{ form.submit(class="btn btn-outline-info") }}
        </div>
    </form>

    <script
src="https://code.jquery.com/jquery-3.3.1.slim.min.js"
integrity="sha384-q8i/X+965DzO0rT7abK41JStQIAqVgRVzpbzo5smXKp4
YfRvH+8abtTE 1Pi6jizo" crossorigin="anonymous"></script>
    <script
src="https://cdn.jsdelivr.net/npm/popper.js@1.14.7/dist/umd/po
pper.min.js"
integrity="sha384-UO2eT0CpHqdSJQ6hJty5KVphtPhzWj9WO1clHTMGa3JD
ZwrnQq4sF86d IHNDz0W1" crossorigin="anonymous"></script>
    <script
src="https://cdn.jsdelivr.net/npm/bootstrap@4.3.1/dist/js/boot
strap.min.js "
integrity="sha384-JjSmVgyd0p3pXB1rRibZUAYoIIy6OrQ6VrjIEaFf/nJG
zIxFDsf4x0xI M+B07jRM" crossorigin="anonymous"></script>
</body>

</html>
```