

Exp No. 4

AIM : To design a Flask application that showcases URL building and demonstrates the use of HTTP methods (GET and POST) for handling user input and processing data.

PROBLEM STATEMENT :

Create a Flask application with the following requirements:

1. A homepage (/) with links to a "Profile" page and a "Submit" page using the `url_for()` function.
2. The "Profile" page (`/profile/<username>`) dynamically displays a user's name passed in the URL.
3. A "Submit" page (`/submit`) displays a form to collect the user's name and age. The form uses the POST method to send the data, and the server displays a confirmation message with the input.

Theory:

1.)What is a route in Flask, and how is it defined?

A route in Flask maps a URL to a specific function. It's defined using the `@app.route()` decorator.

2.)How can you pass parameters in a URL route?

Parameters can be passed in a URL using angle brackets `<param>` in the route definition.

3.)What happens if two routes in a Flask application have the same URL pattern?

The last route defined with that pattern will override the previous one.

4.)What are the commonly used HTTP methods in web applications?

The most common HTTP methods are GET, POST, PUT, DELETE, and PATCH.

5.)What is a dynamic route in Flask?

A dynamic route allows for variable parts in the URL, which are passed as parameters to the route function.

6.)Write an example of a dynamic route that accepts a username as a parameter.

```
@app.route('/user/<username>')
def show_user(username):
    return f'User {username}'
```

7.)What is the purpose of enabling debug mode in Flask?

Debug mode helps with error tracking, automatic reloading, and detailed error messages during development.

8.)How do you enable debug mode in a Flask application?

Debug mode is enabled by setting `app.debug = True` or using `app.run(debug=True)`.

Code :-

App.py :

```
from flask import Flask, render_template, request, url_for, redirect
```

```
app = Flask(__name__)
```

```
@app.route('/')
```

```
def home():
```

```
    return render_template('home.html')
```

```
@app.route('/profile/<username>')
```

```
def profile(username):
```

```
    return render_template('profile.html', username=username)
```

```
@app.route('/submit', methods=['GET', 'POST'])
```

```
def submit():
```

```
    if request.method == 'POST':
```

```
        name = request.form['name']
```

```
        age = request.form['age']
```

```
        return render_template('submit.html', submitted=True, name=name, age=age)
```

```
    return render_template('submit.html', submitted=False)
```

```
if __name__ == '__main__':
```

```
    app.run(debug=True)
```

Base.html :

```
<!DOCTYPE html>
```

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

```
<head>
```

```
    <meta charset="UTF-8">
```

```
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
```

```
<title>{% block title %}{% endblock %} - Flask App</title>
<style>
  body {
    font-family: Arial, sans-serif;
    max-width: 800px;
    margin: 0 auto;
    padding: 20px;
  }
  nav {
    margin-bottom: 20px;
  }
  nav a {
    margin-right: 10px;
  }
  .content {
    padding: 20px;
    border: 1px solid #ddd;
    border-radius: 5px;
  }
  form {
    display: flex;
    flex-direction: column;
    gap: 10px;
    max-width: 300px;
  }
  input {
    padding: 5px;
  }
  button {
    padding: 10px;
    background-color: #007bff;
    color: white;
    border: none;
    border-radius: 5px;
    cursor: pointer;
  }
</style>
</head>
<body>
  <nav>
    <a href="{{ url_for('home') }}">Home</a>
    <a href="{{ url_for('submit') }}">Submit</a>
  </nav>
  <div class="content">
    {% block content %}{% endblock %}
  </div>
</body>
</html>
```

Home.html :

```
{% extends "base.html" %}

{% block title %}Home{% endblock %}

{% block content %}
    <h1>Welcome to the Flask App</h1>
    <p>This is a simple Flask application demonstrating different routes and form handling.</p>
    <p>You can:</p>
    <ul>
        <li>Visit a sample profile page: <a href="{{ url_for('profile', username='Jai') }}">Jai's Profile</a></li>
        <li>Go to the <a href="{{ url_for('submit') }}">Submit Form</a> to enter your information</li>
    </ul>
{% endblock %}
```

Profile.html :

```
{% extends "base.html" %}

{% block title %}Profile{% endblock %}

{% block content %}
    <h1>Profile Page</h1>
    <p>Welcome to {{ username }}'s profile!</p>
    <p>This is a dynamic page that shows the username passed in the URL.</p>
{% endblock %}
```

submit.html :

```
{% extends "base.html" %}

{% block title %}Submit{% endblock %}

{% block content %}
    <h1>Submit Information</h1>

    {% if submitted %}
        <div class="confirmation">
            <h2>Thank you for submitting!</h2>
            <p>Name: {{ name }}</p>
            <p>Age: {{ age }}</p>
            <p><a href="{{ url_for('submit') }}">Submit another response</a></p>
        </div>
    {% endif %}
{% endblock %}
```

```
{% else %}
<form method="POST">
  <div>
    <label for="name">Name:</label>
    <input type="text" id="name" name="name" required>
  </div>
  <div>
    <label for="age">Age:</label>
    <input type="number" id="age" name="age" required>
  </div>
  <button type="submit">Submit</button>
</form>
{% endif %}
{% endblock %}
```

Output :-

home.html :

[Home](#) [Submit](#)

Welcome to the Flask App

This is a simple Flask application demonstrating different routes and form handling.

You can:

- Visit a sample profile page: [Jai's Profile](#)
- Go to the [Submit Form](#) to enter your information

profile.html :

[Home](#) [Submit](#)

Profile Page

Welcome to Jai's profile!

This is a dynamic page that shows the username passed in the URL.

submit.html :

[Home](#) [Submit](#)

Submit Information

Name:

Age:

Submit

[Home](#) [Submit](#)

Submit Information

Name:

Age:

Submit

[Home](#) [Submit](#)

Submit Information

Thank you for submitting!

Name: Jai

Age: 22

[Submit another response](#)