Day49_Flask_Introduction_and_First_Web_App

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First Flask Program – Web App Introduction

In our Python journey so far, we've already explored **front-end tools** like:

- **Tkinter** – for creating desktop GUI apps.
- **Streamlit** – for fast and interactive web dashboards.
- **Gradio** – for building AI/ML model demos easily.

Now, it's time to go **one level deeper** and learn how **web apps work from scratch** using **Flask**, one of Python's most powerful and flexible micro web frameworks!

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1 What is Flask?

Flask is a **micro web framework** written in Python. It is lightweight, easy to use, and perfect for beginners who want to build web applications quickly. It doesn't require tools or libraries like a full-stack framework, but it gives you the flexibility to choose them when needed.

2 Code: First Flask App

```python
from flask import Flask   # Import Flask class

app = Flask(__name__)    # Create Flask app instance

@app.route('/')          # Define route (home page)
def index():
    return 'Welcome to first flask deployment'  # Text shown on visiting homepage

# Run the app on localhost (127.0.0.1) and port 5000
app.run(host='127.0.0.1', port=5000)
```

3 Explanation:

Line	Description
`from flask import Flask`	Imports the Flask class from the flask package.

Line	Description
`app = Flask(__name__)`	Creates the Flask application instance. `__name__` tells Flask where to look for resources.
`@app.route('/')`	Tells Flask what URL should trigger the `index()` function (home route `/`).
`def index()`	This function is executed when someone accesses the `/` route.
`return ...`	Returns the text that will be displayed in the web browser.
`app.run(...)`	Runs the app locally on your computer. `127.0.0.1:5000` is the local address and port.

4 How to Run:

1. Save the code in a file like `app.py`.

2. Open terminal/command prompt and navigate to the folder where the file is saved.

3. Run:

   ```
   python app.py
   ```

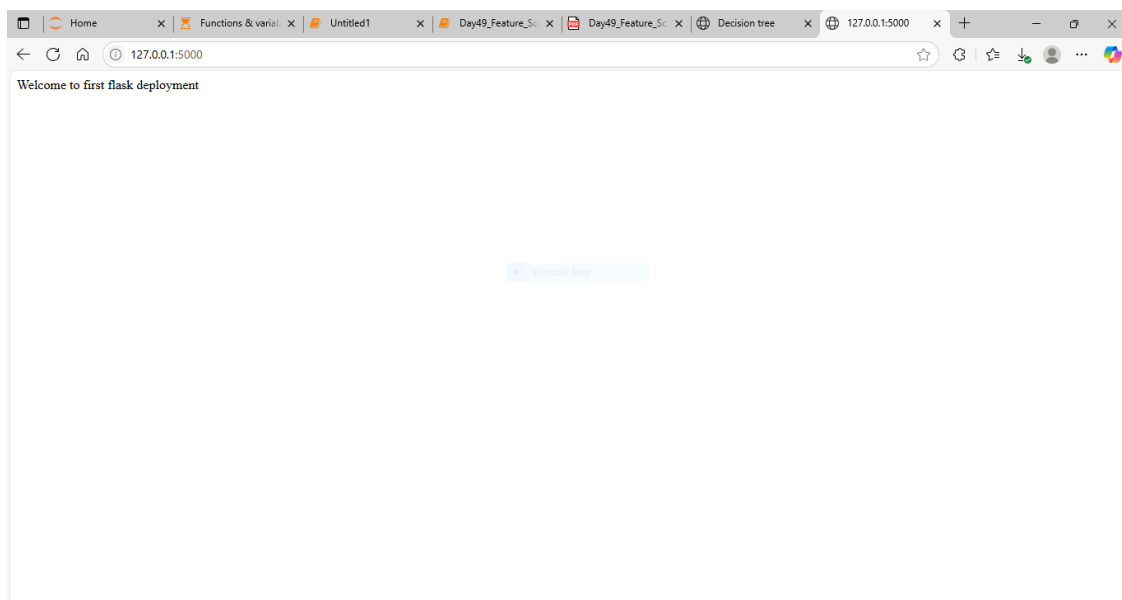4. Open your browser and visit: `http://127.0.0.1:5000`

5 Output:

You will see:

```
Welcome to first flask deployment
```

6 Screenshot:

Below is a screenshot of how the Flask app appears in the browser:

7 Summary:

Today we learned how to:

- Install and run Flask
- Create a basic web app using Flask
- Understand basic routing and responses
- Access and test your local server

This is the foundation for building dynamic websites and APIs with Python!