



Web Application Development

Python Flask

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Table of Contents

1 Introduction to Flask

2 Setting Up Flask

3 Routing in Flask

What is Flask?

- Flask is a lightweight web framework for Python.
- It is designed to be simple and flexible.
- Often referred to as a "micro" framework because it doesn't require particular tools or libraries.
- Flask gives developers full control over components, unlike larger frameworks like Django.

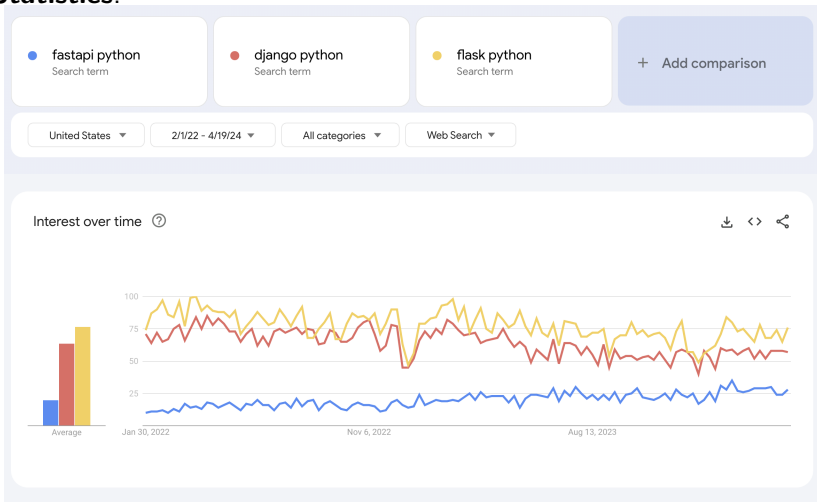


Flask



Python BE trend

Statistics:



Key Features of Flask

Why use Flask?

- **Lightweight and minimalistic.**
- **Highly extensible:** Add what you need (e.g., database, authentication).
- **Jinja2 template engine:** Dynamic HTML rendering.
- **Development server and debugger:** Simplifies testing and development.

Flask vs. Django

Flask	Django
Micro framework	Full-stack framework
Minimal, flexible	Pre-built tools and structure
Manual routing	Automatic routing
Lightweight, quick to set up	Heavier, more features

Flask: Ideal for small to medium applications or for learning web development.

Installing Flask

Step 1: Install Flask using pip.

```
pip install flask
```

Step 2: Verify Installation.

```
python -m flask --version
```

This should display the Flask version installed.

Creating Your First Flask App

Step 1: Create a new Python file.

```
from flask import Flask
app = Flask(__name__)

@app.route('/')
def hello_world():
    return 'Hello, Flask!'

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


Running the Flask Application

Step 2: Run the application from the terminal.

```
python app.py
```

Access the application: Open your browser and go to `http://localhost:5000`.

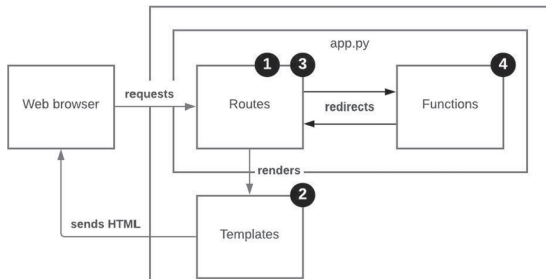
Breakdown of Flask Application

- `Flask(__name__)`: Creates a Flask application object.
- `@app.route('/')`: Defines the route for the homepage.
- `def hello_world()`: This function handles the requests and returns the response.
- `app.run(debug=True)`: Starts the development server with debugging enabled.

What is Routing?

Routing:

- The process of mapping URLs to specific code functions.
- Every route is associated with a URL and function.
- Flask uses decorators like `@app.route()` to define routes.



Defining Routes in Flask

```
@app.route('/about')  
def about():  
    return 'This is the About page.'
```

Dynamic Routes:

```
@app.route('/user/<name>')  
def user(name):  
    return f'Hello, {name}!'
```

Route Methods (GET and POST)

GET:

- Used to request data from the server.
- Common for pages like forms or search engines.

POST:

- Used to send data to the server (e.g., form submissions).
- More secure, data is not visible in the URL.

Thank you for listening!