Flask

Flask (source code) is a Python web framework built with a small core and easy-to-extend philosophy.

Intermediate to advanced Flask resources

Once you move past the beginner tutorials and have created a few Flask projects you will want to learn how to use Flask extensions, deploy your code and integrate web APIs to build more extensive functionality. The following tutorials will guide you through more advanced topics and provide solid learning materials, especially when combined with the example real-world projects listed in the next section.

- Microservices with Docker, Flask, and React is an awesome course for beyond-the-basics work with Flask. There are a couple of free chapters and the rest of the course is well worth paying for to learn a bunch of valuable tools such as Docker, React and microservices architectures.

- Visualize your trip with Flask and Mapbox along with the open source flask_mapbox GitHub repository provides a fantastic example visualization of a trip to Iceland with Flask as the backend web framework.

- Microservices with Flask, Docker, and React teaches how to spin up a reproducible Flask development environment with Docker. It shows how to deploy it to an Amazon EC2 instance then scale the services on Amazon EC2 Container Service (ECS).

- Build a Video Chat Application with Python, JavaScript and Twilio Programmable Video shows how to use Twilio Programmable Video to build cross-platform (web, iOS and Android) video into Flask applications.

- Why and how to handle exceptions in Python Flask has some great example code and reasons why you should code defensively by anticipating and handling the unhappy path exceptions in your Flask applications. The examples are relevant to any web framework you will use and are easy to copy and paste to test in your own applications.

- The Flask Extensions Registry is a curated list of the best packages that extend Flask. It's the first location to look through when you're wondering how to do something that's not in the core framework.

- How I Structure My Flask Application walks through how this developer organizes the components and architecture for his Flask applications.

- Adding phone calling to your web application is a killer Flask tutorial with all the code needed to create a web app that can dial phones and receive inbound calls.

- If you're looking for a fun tutorial with Flask and WebSockets, check out my blog post on creating Choose Your Own Adventure Presentations with Reveal.js, Python and WebSockets. Follow up that tutorial by building an admin interface in part 1, part 2 and part 3 that'll show you how to use forms and SQLAlchemy. There is also a companion open source GitHub repository for the app with tags for each step in the blog posts.

- One line of code cut our Flask page load times by 60% is an important note about optimizing Flask template cache size to dramatically increase performance in some cases.

- Unit Testing Your Twilio App Using Python's Flask and Nose covers integrating the Twilio API into a Flask application and how to test that functionality with nose.

- The Flask documentation has some quick examples for how to deploy Flask with standalone WSGI containers.

- Serverless Python Web Applications With AWS Lambda and Flask is a spectacular post that walks through how to run Flask applications on AWS Lambda's serverless offering. The tutorial has instructions on how to include application dependencies and handle your deployment workflow.

- Visualize your trip with Flask and Mapbox uses geographic GeoJSON data and presents it in a Flask application that uses Mapbox.

- Handling Email Confirmation in Flask is a great walkthrough for a common use case of ensuring an email address matches with the user's login information.

- Static websites with Flask shows how to use Flask with Frozen-Flask to generate a static website from a backend data source.

- Running Flask on Docker Swarm details how to run a Flask app on Docker Swarm.

- Running Flask on Kubernetes step-by-step walkthrough of how to deploy a Flask-based microservice (along with Postgres and Vue.js) to a Kubernetes cluster.

- Dynamic Secret Generation with Vault and Flask looks at how to use Hashicorp's Vault and Consul to create dynamic Postgres credentials for a Flask web app

Open source Flask example projects

Flask's lack of standard boilerplate via a commandline interface for setting up your project structure is a double edged sword. When you get started with Flask you will have to figure out how to scale the files and modules for the code in your application. The following open source projects range from simple to complex and can give you ideas about how to working on your codebase.

- Skylines is an open source flight tracking web application built with Flask. You can check out a running version of the application.

- Flask JSONDash is a Flask blueprint that creates JavaScript Object Notation (JSON) APIs for data dashboards.

- Microblog is the companion open source project that goes along with Miguel Grinberg's O'Reilly Flask book.

- Flaskr TDD takes the official Flask tutorial and adds test driven development and JQuery to the project.

- Charles Leifer (author of Peewee and Pony ORM) built a note-taking app along with the source code in Gists.

- Reddit Job Search uses the Reddit API for a jobs data set and presents them via a Flask web app.

- Bean Counter is an open source Flask app for tracking coffee.

- FlaskBB is a Flask app for a discussion forum.

- psdash is an app built with Flask and psutils to display information about the computer it is running on.

Flask project templates

Flask's wide array of extension libraries comes at the cost of having a more complicated project setup. The following project templates provide a starter base that you can either use for your own applications or just learn various ways to structure your code.

- Use the Flask App Engine Template for getting set up on Google App Engine with Flask.

- Flask Foundation is a starting point for new Flask projects. There's also a companion website for the project that explains what extensions the base project includes.

- Cookiecutter Flask is a project template for use with Cookiecutter.

- Flask-Boilerplate provides another starting project with sign up, log in and password reset.

- The company Sunscrapers provides this Flask boilerplate project with SQLAlchemy, py.test and Celery baked into the Flask project structure.

- flask-webpack-cookiecutter combines a Flask framework project structure with Webpack, a module bundler frequently used in the JavaScript world.

Open source code for learning Flask

There are many open source projects that rely on Flask to operate. One of the best ways to learn how to use this framework is to read how other projects use it in real-world code. This section lists these code examples by class and method in Flask