Course : Python web development with Flask

Practical course - 4d - 28h00 - Ref. FLK
Price : 2200 € E.T.

NEW

This course will teach you how to develop web applications with Flask, a lightweight, flexible Python framework. From installation to production, you'll learn how to manage routes, forms and databases, as well as how to authenticate and secure your application.

🎯 Teaching objectives

At the end of the training, the participant will be able to:

- ✓ Understanding the Flask framework and its architecture
- ✓ Create and configure a Flask application
- ✓ Master the management of routes, HTTP requests and Jinja2 templates
- ✓ Managing forms, sessions and databases with Flask-SQLAlchemy
- ✓ Set up an authentication system and secure a Flask application
- ✓ Deploying a Flask application on an online server

Intended audience

The course is designed for developers wishing to acquire an in-depth knowledge of the basics of the Flask framework.

Prerequisites

A good command of Python, basic HTML/CSS, and a general understanding of the client-server model and HTTP requests.

Course schedule

(1) Introduction to Flask

- Introduction to the Flask framework and its use cases.
- Comparing Flask and Django.
- Understand the client-server model and MVC architecture.
- WSGI and the Jinja2 template engine.

Hands-on work
General presentations.

2) Installation and first application

- Install and configure Flask on Windows and Linux.
- Creation of a first Flask application ("Hello World").
- Change Flask server port and IP address.

Hands-on work
Install Flask and create a first application displaying "Hello World".

3) Route and query management

- Define and manage routes with @app.route.
- Use of dynamic rules in URLs.
- HTTP method management (GET, POST, PUT, DELETE).
- Redirections and error handling (404, 500).

Hands-on work
Create different routes with @app.route, use dynamic rules and test HTTP methods.

4) Templates and digital signage

- Introduction to Jinja2 templates.
- Inherit templates and use placeholders.
- Inclusion of CSS and JavaScript files in a Flask project.
- Dynamic display with variables and loops in Jinja2.

Hands-on work
Use Jinja2 to display data dynamically and organize templates with inheritance.

5) Forms and session management

- Introduction to the Request object and management of data sent by a form.
- Use of cookies and Flask sessions.
- Forms management with Flask-WTF.
- User input validation and error management.
- Using Flask-Flash to display messages.

Hands-on work
Create a form with Flask-WTF, validate inputs and store data in session.

6) Database and Object-Relational Mapping (ORM)

- Introduction to SQLAlchemy and Flask-SQLAlchemy.
- Configure and connect to SQLite, MySQL and PostgreSQL.
- Definition of models and relationships (One-to-Many, Many-to-Many).
- Creating and managing migrations with Flask-Migrate.
- Execute SQL and ORM (Create, Read, Update, Delete) queries.

Hands-on work
Configure Flask-SQLAlchemy, create a database model and run CRUD queries.

7 Authentication and security

- Setting up authentication with Flask-Login.
- Creation of registration and login templates and forms.
- Password hashing with Bcrypt and secure storage.
- Managing roles and permissions with Flask-Principal.
- Securing routes with @login_required.

Hands-on work
Set up a registration and login system with Flask-Login and secure passwords.

8 Deployment and maintenance

- Deploying a Flask application on Heroku or AWS.
- Configuration of environment variables and Procfile.
- Logging and error monitoring.
- Error handling (404, 500) and creation of custom error pages.

Hands-on work
Deploy the application on Heroku or AWS and configure logs and environment variables.

Dates and locations

REMOTE CLASS
2026 : 15 Sep., 15 Dec.

PARIS LA DÉFENSE
2026 : 7 Sep., 17 Nov.