



PYTHON FOR WEB DEVELOPMENT

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FULL COURSE



MODULE 1:

Introduction to Web Development with Python

- Overview of Web Development and its applications
- Why choose Python for Web Development?
- Setting up a development environment (VS Code, PyCharm, Jupyter, Git)
- Understanding frontend vs. backend vs. full-stack



MODULE 2 :

Python Basics for Web Development (Quick Recap)

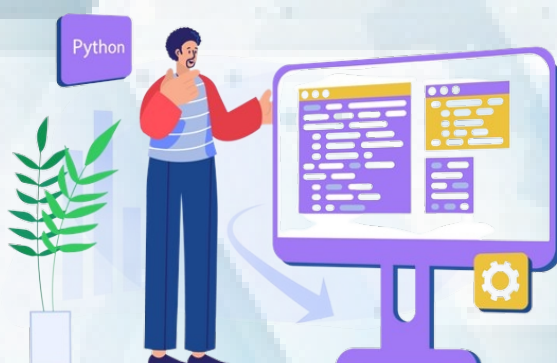
- Python Syntax, variables, and data types
- Control flow (Loops, Conditions)
- Function and Modules
- File Handling
- Object-Oriented Programming (OOP) concepts



MODULE 3 :

Web Fundamentals (HTML, CSS, JavaScript)

- HTML 5 Basics (structure, forms, elements)
- CSS3 basics (styling, responsive design with Flexbox/Grid)
- JavaScript basics (DOM manipulation, events, ES6 features)
- Introduction to Bootstrap and Tailwind CSS for quick UI Design



MODULE 4 :

Lightweight Web Framework

- Introduction to Flask and its features
- Setting up a Flask project
- Routing and templates (Jinja2 templating)
- Handling form and user input
- Working with databases (SQLite & SQLAlchemy ORM)
- Authentication & Authorization (JWT & QAuth)
- Deploying Flask apps on cloud platforms



MODULE 5 :

Django - Full Stack Framework

- Introduction to Django and its MVT architecture
- Setting up a Django project
- Django models and migrations
- Django views and templates
- User authentication and session management
- Working with Django Rest Framework (DRF)
- Deploying Django apps (Heroku, AWS, Render)



MODULE 6 :

APIs and Web Services

- RESTful API design principles
- Creating REST APIs with Flask & Django Rest Framework
- Using Postman for API testing
- Consuming third-party APIs in Python
- Introduction to GraphQL with Graphene

MODULE 7 :

Database Management for Web Apps

- SQL vs. NoSQL databases
- PostgreSQL and MySQL integration
- Using MongoDB with Python (PyMongo & Flask/Django)
- Redis for caching and session Management



MODULE 8 :

Advanced Web Development Concepts

- **WebSockets and real-time communication with Flask-SocketIO**
- **Asynchronous programming with FastAPI**
- **Serverless computing with AWS Lambda and Python**
- **Web scraping with BeautifulSoup & Scrapy**
- **Deploying full-stack applications with Docker & Kubernetes**



MODULE 9 :

Security & Performance Optimization

- Secure coding practices in Python Web Apps
- Preventing common vulnerabilities (SQL Injection, XSS, CSRF)
- Optimizing database queries and API responses
- Performance monitoring with tools like New Relic

MODULE 10 :

Full Stack Project & Deployment

- Developing a full Stack Python web application
- Integrating fronted framework (React.js, Vue.js)
- CI/CD pipeling setup (GitHub Actions, Docker, AWS, GCP)
- Deployment strategies for high-traffic applications

