

API and Web Service Introduction

Learn to understand APIs and web services, covering HTTP, XML, JSON, SOAP, REST and API access methods including OAuth.

11

MODULES

56

TOPICS

COURSE OVERVIEW

This course introduces the concepts of APIs and web services, beginning with what each one is and how they relate. It then covers the HTTP protocol in detail, including its parts, headers, body and advanced topics such as statelessness, cookies and security. The course proceeds through data formats XML and JSON, then compares and contrasts SOAP and REST web services with worked examples. It concludes with API access methods such as authentication, authorization and OAuth, practical examples using Postman and Python, and additional topics including creating APIs, webhooks and microservices.

WHO THIS COURSE IS FOR

API Developers

Web Developers

Software Testers

Integration Engineers

Backend Developers

LEARNING OBJECTIVES

- Explain what an API and a web service are
- Describe the parts of an HTTP request and response
- Compare XML and JSON data formats
- Compare SOAP and REST web services
- Apply authentication methods such as Basic, Digest and Bearer Token
- Explain OAuth and OpenID Connect for API access
- Use Postman to test APIs with different authentication types
- Identify additional concepts such as webhooks and microservices

11 Modules, 56 Topics

01

Introduction

TOPICS

Introduction

02

API

TOPICS

What is an API · API Exercise 1 · API Exercise 2 · API Exercise Details · API Details · API Details Example · API Mashup

03

Web Service

TOPICS

What is a Web Service? · API and Web Service Conclusion

04

HTTP

TOPICS

- Introduction to HTTP
- HTTP Exercise
- HTTP Parts
- HTTP Start Line
- HTTP Start Line Exercise
- HTTP Headers
- HTTP Headers Exercise
- HTTP Blank Line
- HTTP Body
- HTTP Body Exercise
- **Advanced Topics HTTP:** Stateless, Cookies, Security, Infrastructure

05

XML

TOPICS

XML Introduction · XML Exercise

06

Json

TOPICS

JSON Introduction · JSON Exercise · XML JSON Comparison

07

SOAP

TOPICS

SOAP REST Comparison · SOAP Introduction · SOAP Examples · SOAP Exercise

08

Rest

TOPICS

REST Introduction Part One · REST Introduction Part Two · REST Example (Call EBay API) · REST Example (Create Twitter App) · REST Exercise

09

API Access

TOPICS

- HTTPS
- Authentication and Authorization
- Apps
- OAuth
- **Advanced Topic:** OAuth Authorization Code Grant (Google Cloud)
- **Advanced Topic:** OpenID Connect
- **Exercise:** API Access Definitions

10

API Examples

TOPICS

- Postman Installation
- Postman Simple Example
- No Authentication
- Basic Authentication
- Digest Authentication
- Bearer Token
- OAuth
- Postman Exercise
- Python

11

Extras

TOPICS

Create an API (Amazon Web Services) · Calling APIs Using Programming Languages · Webhooks · Microservices · What's Next/After This Course

WHAT IS INCLUDED

Everything You Need to Succeed

- Koenig course material for every module
- Delivery by certified instructors and subject matter experts
- Hands-on exercises throughout the course
- Course completion certificate from Koenig

ABOUT KOENIG

Who We Are

Established in 1993, Koenig Solutions is a globally recognised training provider with 35+ technology partnerships, 5,000+ training programmes and a network of certified instructors and subject matter experts, supporting individuals and enterprise teams worldwide.

FLEXIBLE DELIVERY

Learn the Way That Suits You

Classroom Training

Live Online Classes (ILO)

Fly-Me-A-Trainer (FMAT)

Flexi (Self-Paced)

1-on-1 Training

Ready to Get Started?

Talk to a learning advisor about schedules, group training and customised delivery.

Visit koenig-solutions.com

✉ info@koenig-solutions.com