uCertify

Course Outline

Python API Developments

20 May 2024

1. Pre-Assessment
2. Exercises, Quizzes, Flashcards & Glossary

   Number of Questions
3. Expert Instructor-Led Training
4. ADA Compliant & JAWS Compatible Platform
5. State of the Art Educator Tools
6. Award Winning Learning Platform (LMS)
7. Chapter & Lessons

   Syllabus

   Chapter 1: Preface

   Chapter 2: Your First Step

   Chapter 3: Starting to Build Our Project

   Chapter 4: Manipulating a Database with SQLAlchemy

   Chapter 5: Authentication Services and Security with JWT

   Chapter 6: Object Serialization with marshmallow

   Chapter 7: Email Confirmation

   Chapter 8: Working with Images

   Chapter 9: Pagination, Searching, and Ordering

   Chapter 10: Building More Features

   Chapter 11: Deployment

   Videos and How To
8. Practice Test

   Here's what you get

   Features
9. Live labs

   Lab Tasks

   Here's what you get
10. Post-Assessment

1. Pre-Assessment

Pre-Assessment lets you identify the areas for improvement before you start your prep. It determines what students know about a topic before it is taught and identifies areas for improvement with question assessment before beginning the course.

2. Exercises

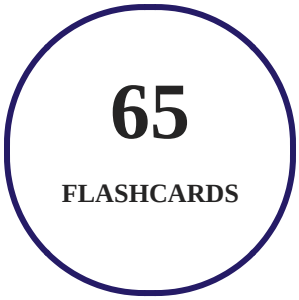
There is no limit to the number of times learners can attempt these. Exercises come with detailed remediation, which ensures that learners are confident on the topic before proceeding.

3. Quiz

Quizzes test your knowledge on the topics of the exam when you go through the course material. There is no limit to the number of times you can attempt it.

4. flashcards

Flashcards are effective memory-aiding tools that help you learn complex topics easily. The flashcard will help you in memorizing definitions, terminologies, key concepts, and more. There is no limit to the number of times learners can attempt these. Flashcards help master the key concepts.



5. Glossary of terms

uCertify provides detailed explanations of concepts relevant to the course through Glossary. It contains a list of frequently used terminologies along with its detailed explanation. Glossary defines the key terms.

6. Expert Instructor-Led Training

uCertify uses the content from the finest publishers and only the IT industry's finest instructors. They have a minimum of 15 years real-world experience and are subject matter experts in their fields. Unlike a live class, you can study at your own pace. This creates a personal learning experience and gives you all the benefit of hands-on training with the flexibility of doing it around your schedule 24/7.

7. ADA Compliant & JAWS Compatible Platform

uCertify course and labs are ADA (Americans with Disability Act) compliant. It is now more accessible to students with features such as:

- Change the font, size, and color of the content of the course
- Text-to-speech, reads the text into spoken words
- Interactive videos, how-tos videos come with transcripts and voice-over
- Interactive transcripts, each word is clickable. Students can clip a specific part of the video by clicking on a word or a portion of the text.

JAWS (Job Access with Speech) is a computer screen reader program for Microsoft Windows that reads the screen either with a text-to-speech output or by a Refreshable Braille display. Student can easily navigate uCertify course using JAWS shortcut keys.

8. State of the Art Educator Tools

uCertify knows the importance of instructors and provide tools to help them do their job effectively. Instructors are able to clone and customize course. Do ability grouping. Create sections. Design grade scale and grade formula. Create and schedule assessments. Educators can also move a student from self-paced to mentor-guided to instructor-led mode in three clicks.

9. Award Winning Learning Platform (LMS)

uCertify has developed an award winning, highly interactive yet simple to use platform. The SIIA CODiE Awards is the only peer-reviewed program to showcase business and education technology's finest products and services. Since 1986, thousands of products, services and solutions have been recognized for achieving excellence. uCertify has won CODiE awards consecutively for last 7 years:

- **2014**
    1. Best Postsecondary Learning Solution

- **2015**
    1. Best Education Solution

2. Best Virtual Learning Solution
3. Best Student Assessment Solution
4. Best Postsecondary Learning Solution
5. Best Career and Workforce Readiness Solution
6. Best Instructional Solution in Other Curriculum Areas
7. Best Corporate Learning/Workforce Development Solution

- **2016**
    1. Best Virtual Learning Solution
    2. Best Education Cloud-based Solution
    3. Best College and Career Readiness Solution
    4. Best Corporate / Workforce Learning Solution
    5. Best Postsecondary Learning Content Solution
    6. Best Postsecondary LMS or Learning Platform
    7. Best Learning Relationship Management Solution

- **2017**
    1. Best Overall Education Solution
    2. Best Student Assessment Solution
    3. Best Corporate/Workforce Learning Solution
    4. Best Higher Education LMS or Learning Platform

- **2018**
    1. Best Higher Education LMS or Learning Platform
    2. Best Instructional Solution in Other Curriculum Areas
    3. Best Learning Relationship Management Solution

- **2019**
    1. Best Virtual Learning Solution
    2. Best Content Authoring Development or Curation Solution
    3. Best Higher Education Learning Management Solution (LMS)

- **2020**

1. Best College and Career Readiness Solution
2. Best Cross-Curricular Solution
3. Best Virtual Learning Solution

10. Chapter & Lessons

uCertify brings these textbooks to life. It is full of interactive activities that keeps the learner engaged. uCertify brings all available learning resources for a topic in one place so that the learner can efficiently learn without going to multiple places. Challenge questions are also embedded in the chapters so learners can attempt those while they are learning about that particular topic. This helps them grasp the concepts better because they can go over it again right away which improves learning.

Learners can do Flashcards, Exercises, Quizzes and Labs related to each chapter. At the end of every lesson, uCertify courses guide the learners on the path they should follow.

Syllabus

Chapter 1: Preface

- About the Course

Chapter 2: Your First Step

- Introduction
- Understanding API
- RESTful API
- HTTP Protocol
- HTTP Methods and CRUD

- The JSON Format
- HTTP Status Codes
- Open API
- The Flask Web Framework
- Building a Simple Recipe Management Application
- Using curl or httpie to Test All the Endpoints
- Postman
- Summary

Chapter 3: Starting to Build Our Project

- Introduction
- What is Flask-RESTful?
- Virtual Environment
- Creating a Recipe Model
- Configuring Endpoints
- Making HTTP Requests to the Flask API Using curl and httpie
- Summary

Chapter 4: Manipulating a Database with SQLAlchemy

- Introduction
- Databases
- SQL
- ORM
- Defining Our Models
- Password Hashing
- Summary

Chapter 5: Authentication Services and Security with JWT

- Introduction
- JWT
- Flask-JWT-Extended
- Designing the Methods in the Recipe Model
- Refresh Tokens
- The User Logout Mechanism
- Summary

Chapter 6: Object Serialization with marshmallow

- Introduction
- Serialization versus Deserialization
- marshmallow
- A Simple Schema
- UserSchema Design
- RecipeSchema Design
- The PATCH Method
- Summary

Chapter 7: Email Confirmation

- Introduction
- Mailgun
- User Account Activation Workflow
- HTML Format Email
- Summary

Chapter 8: Working with Images

- Introduction
- Building the User Avatar Function

- Flask-Uploads
- Image Resizing and Compression
- Introduction to Pillow
- Summary

Chapter 9: Pagination, Searching, and Ordering

- Introduction
- Pagination
- Paginated APIs
- Recipe Searching
- Sorting and Ordering
- Summary

Chapter 10: Building More Features

- Introduction
- Caching
- Flask-Caching
- API Rate Limiting

- Flask-Limiter
- Summary

Chapter 11: Deployment

- Introduction
- Deployment
- Comparing SaaS, PaaS, and IaaS
- The Heroku Platform
- Configuration Handling in Smilecook
- Heroku Application
- Heroku Add-Ons
- Setting Up Environment Variables for the Heroku App
- Setting Up Variables in Postman
- Setting Up the Front-end Interface to Work with the Smilecook API
- Summary

11. Practice Test

Here's what you get

45	45
PRE-ASSESSMENTS QUESTIONS	POST-ASSESSMENTS QUESTIONS

Features

Each question comes with detailed remediation explaining not only why an answer option is correct but also why it is incorrect.

Unlimited Practice

Each test can be taken unlimited number of times until the learner feels they are prepared. Learner can review the test and read detailed remediation. Detailed test history is also available.

Each test set comes with learn, test and review modes. In learn mode, learners will attempt a question and will get immediate feedback and complete remediation as they move on to the next question. In test mode, learners can take a timed test simulating the actual exam conditions. In review mode, learners can read through one item at a time without attempting it.

12. Live Labs

The benefits of live-labs are:

- Exam based practical tasks
- Real equipment, absolutely no simulations
- Access to the latest industry technologies
- Available anytime, anywhere on any device
- Break and Reset functionality
- No hardware costs

Lab Tasks

Your First Step

- Building a Flask Application Using PyCharm
- Managing Recipes with Flask

Starting to Build Our Project

- Analyzing the Recipe Model and Testing its Endpoints

Manipulating a Database with SQLAlchemy

- Using Flask-Migrate to Build a Database Upgrade Script

Authentication Services and Security with JWT

- Analyzing a User Login Function
- Analyzing the Logout Function

Object Serialization with marshmallow

- Using marshmallow to Validate the User Data
- Analyzing RecipeSchema

Working with Images

- Adding the avatar_image Attribute to the User Model

Pagination, Searching, and Ordering

- Analyzing the Implementation of Pagination on the Published Recipes Retrieval Function

Deployment

- Analyzing How to Segregate Application Configura...ween the Development and Production Environments

Here's what you get

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LIVE LABS

13. Post-Assessment

After completion of the uCertify course Post-Assessments are given to students and often used in conjunction with a Pre-Assessment to measure their achievement and the effectiveness of the exam.

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