

**Python Test Automation with Robot Framework**

**Course Number:** PYTH-132  
**Duration:** 5 days

**Overview**

This Python Test Automation with Robot Framework training course leads students from the basics of test automation to more advanced features such as building a custom Test Automation Framework, setting up Test Data, and utilizing best practices for creating efficient, robust, and easy-to-maintain automated scripts. Extra emphasis is placed on using Python to create new Robot Keywords (Python functions) to extend Robot Libraries, and to create self-documenting Robot test cases that are easy-to-read and valuable to every member of the Project team.

**Prerequisites**

Students should already understand general testing concepts and have basic proficiency with at least one other programming language. Experience writing Automated Scripts (in any test framework) is desirable.

**Materials**

All Python Test Automation with Robot Framework training students will receive comprehensive courseware.

**Software Needed on Each Student PC**

* Python 3.5 or later on macOS, Windows, or Linux

**Objectives**

* Master the fundamentals of Test Automation
* Build a Test Framework from scratch
* Use Behavior-Driven Development (BDD)-style scripts to improve Scrum team collaboration
* Extend Robot Framework by using custom Python functions.
* Create easy-to-read test scripts
* Create robust Automated test scripts that are easy to maintain.
* Create API Tests with Python in the Robot Framework

**Outline**

* Robot Framework Fundamentals
  + Install & Setup Robot Framework
  + The Settings Section of a Robot file
    - Importing Resources
    - Importing Existing Python Libraries (e.g., the Selenium Library)
    - Suite Setup & Suite Tear Down
    - Test Setup & Test Tear Down
  + Creating a Variables section in a Robot file
  + Creating a Keywords section in a Robot file
  + Basics of Robot Syntax
    - Using Existing Robot Keywords
    - Importing Python Libraries
  + Creating a Test Cases section in a Robot file
    - Test Cases naming convention
    - Documenting Test Cases with Documentation attribute
    - Tags attribute
    - Writing a simple Robot Test
  + Executing a Robot Test
    - Using the terminal execute tests
  + Analyzing Results
    - Viewing the log file
    - Finding Root Cause of Test Script Failures
    - How to read and explain the Report File to your Project team
* Locators / Finding Elements in a Web Application
  + Setting up a Locator file
  + How to find locators using Developer Console and XPath Helper
  + Using id’s or CSS to find elements
  + When and how to use XPath Axes for Locators
  + Dealing with elements that have the same attributes
* Page Object Model Pattern
  + What is the Page Object Model?
  + What are the benefits of the Page Object Model?
  + How to benefit from Utilities Library when using Page Object Model
* Behavior-Driven Development
  + What is BDD?
  + What are the benefits of BDD?
  + How to create easy-to-read test cases
  + How to align BDD test cases with Agile team
  + Converting BDD style tests to Automation “stubs”
* Designing a Test Automation Framework
  + What are the components of a Test Automation Framework?
  + What are the factors that make a robust Test Automation Framework?
  + How to benefit from using Robot Framework extensibility when customizing your framework
  + Be a “Subject Matter Expert” of the application before building your framework
* Building a Test Automation Framework
  + Working with Keywords from existing libraries
  + Creating your project’s Utilities library
  + Extending Robot with custom Keywords
  + Creating Page Object files
  + Creating organized Test Case files
  + Generating Test Data
* Enhancing Test Automation with Best Practices
  + Creating Test Automation Scripts that are adaptable for many test cases
  + Enhancing your project’s utilities library
  + Reducing the amount of locators you have with “polymorphic” locators
  + Making scripts more robust with proper waits
  + Using Keyword Args for Python Functions
  + When to use Exception Handling
  + Generating Robot Docs to help with Documentation
* API Testing Fundamentals
  + What is API Test Automation?
  + What are the benefits of API Test Automation?
  + When should I use API Test Automation vs. UI Automation?
* API Test Automation
  + Setting up a simple API Test in Robot Framework
  + Creating an API Test Suite
  + Using API Tests to generate Test Data