

**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