Python Training Module

followed by

A4Q Selenium 4 Tester Foundation

Durată curs: 14 cursuri x 3 ore

Module 1: PYTHON

Chapter 1 - Intro:

- 1.What is Python?
- 2.Why Python?
- 3.Install and Setup
- 4.Write your first program

Chapter 2 - Logical Structures

- 1.Problem Solving?
- 2.Algorithms
- 3.Pseudo-code
- 4.Flowcharts

Chapter 3 - Variables:

- 1.What is a variable and why we need them?
- 2.Variable types
- 3.Operators
- 4.Comment lines in Python

Chapter 4 - Control Flows:

- 1.if/elif/else statements
- 2.while loop
- 3.for loop

Chapter 5 - Functions:

- 1. What is a function and how we define it?
- 2. Function comments - docstring
- 3. Arguments

Chapter 6 - Variables scope:

- 1. Why we need a scope?
- 2. Variable scope types

Chapter 7- Functions - Default / Variable arguments:

- 1. Why we need a default argument for a function?
- 2. When to use an arbitrary number of arguments?

Chapter 8 - Object Oriented Programming (OOP) - General Information

- 1. OOP concept
- 2. What is an Object

Chapter 9- OOP - Methods and Constructors:

- 1. Methods
- 2. The difference between Methods and Functions
- 3. Constructor types and usage

Chapter 10 - OOP Principles

- 1. Inheritance
- 2. Polymorphism
- 3. Abstraction
- 4. Encapsulation Access modifiers

Chapter 11 - Debugging:

- 1. Types of errors
- 2. How to detect errors in code

Module 2: SELENIUM

Chapter 0 - Introduction

- 0.1 Purpose of this syllabus.
- 0.2 Examinable objectives and cognitive levels of knowledge
- 0.3 The A4Q Selenium Tester Foundation exam
- 0.4 Accreditation
- 0.5 Level of Detail
- 0.6 How this syllabus is organized
- 0.7 Business outcomes (BOS)
- 0.8 Acronyms

Toolset Chapter 1 - Introduction to Test Automation - 175 minutes

- 1.1 Test automation in a nutshell
  - 1.1.1. Test automation at different test levels
  - 1.1.2. Test automation tools & utilities
  - 1.1.3. Test automation in the industry
- 1.2 Manual testing and test automation
  - 1.2.1. Benefits & limitations of manual testing
  - 1.2.2. Benefits & limitations of test automation
  - 1.2.3. Balancing manual and automated testing
- 1.3 Test Automation Solutions Design
  - 1.3.1. Page pattern automation solution
  - 1.3.2. Data driven automation solution
  - 1.3.3. Keyword driven automation solution

Chapter 2 - Automation Web Technologies - 250 minutes

- 2.1 Webpage Architecture
  - 2.1.1 HTML
  - 2.1.2 XML
  - 2.1.3 Tree structure
  - 2.1.4 Rendering
  - 2.1.5 Functional logic
- 2.2 Document Object Model
  - 2.2.1 Structure of a DOM
  - 2.2.2 Properties of DOM
- 2.3 Automation locators
  - 2.3.1 Types of locators
- 2.4 XPath
  - 2.4.1 XPath operators
  - 2.4.2 XPath axes
  - 2.4.3 Absolute and relative XPath
  - 2.4.4 CSS Selector

Chapter 3 - Selenium Automation Tools - 155 minutes

- 3.1 Overview of Selenium test automation
  - 3.1.1 Contemporary Selenium automation
  - 3.1.2 Selenium: powers and limitations
- 3.2 Flavors of the Selenium automation tool
  - 3.2.1 Selenium IDE
  - 3.2.2 Selenium WebDriver
  - 3.2.3 Selenium Grid
- 3.3 Selenium WebDriver ecosystem
  - 3.3.1 Architecture of the Selenium WebDriver
  - 3.3.2 Browser Controllers
  - 3.3.3 Headless test automation
- 3.4 Selenium 4
  - 3.4.1 Architectural change in the Selenium WebDriver
  - 3.4.2 New Features

Chapter 4 - Using Selenium WebDriver - 150 minutes

- 4.1 Managing Selenium libraries
- 4.2 Selenium WebDriver in action
  - 4.2.1 WebDriver initialization
  - 4.2.2 Test Start
  - 4.2.3 Test sssertions
  - 4.2.4 Test termination
  - 4.2.5 Test Reporting
- 4.3 Selenium GUI interface
  - 4.3.1 Interactions
  - 4.3.2 GUI elements states
- 4.4 Parallelism of tests
  - 4.4.1 Selenium automation and performance testing
- 4.5 Machine learning and test automation
  - 4.5.1 Self-Healing tests
- 4.6 Best practices
  - 4.6.1 Static and dynamic wait mechanism
  - 4.6.2 Test Scripts Acceptance Criteria
  - 4.6.3 Choice of selectors and locators

Chapter 5 - Implementation of Test Automation in an organization - 80 minutes

- 5.1 Factors to consider
- 5.2 Evaluation of efficiency and effectiveness of test automation
- 5.3 Success Factors
- 3.3 Selenium WebDriver ecosystem

Chapter 6 - Adapting a Selenium TAS - 45 minutes

- 6.1 Dynamic Variables
- 6.2 Custom Automation Actions
- 6.3 Extended verifications...
    - 6.3.1 Database checks
    - 6.3.2 API calls