Learning Objectives of CP-SAT

"Knowledge with experience is power; certification is just a by-product"

What is CP-SAT?

CP-SAT stands for "Certified Practitioner – Selenium Automation Testing" certification prepared and honored by "Agile Testing Alliance" & "University Teknologi Malaysia (UTM)".

Having basic knowledge of Java Programming and Manual Testing is the only prerequisite for this training.

The course is applicable for all roles and not just "testers". Knowledge, experience & certification is consciously designed to focus on "agile testing" and **not** on "agile testers".

How is it useful?

CP-SAT is designed to train agile professionals with the basics of testing web applications using Selenium leading to advanced topics. You can build, enhance, and maintain scripts in the Eclipse IDE Editor and port Selenese scripts to execution in RC and Selenium 2.x (WebDriver). The training is combination of theory as well as hands-on execution of scripts using the features of Selenium with ample time given to practice until you have mastered the concepts. The Selenium IDE plug-in builds effective and resilient test scripts using a wide variety of current programming languages. The focus is on the practical application of Selenium to resolve common web automated testing challenges. This course focuses on Selenium IDE with

RC/Selenium 2.x configuration and execution related concepts using JUnit and TestNG. There is an extensive coverage on Selenium Reporting mechanism, Data Driven Testing, getting started Grid concepts, Continuous Integration (CI) with Jenkins/Ant.

Am I Eligible?

Anyone having basic experience Java programming and manual testing can go for this certification.

Duration?

CP-SAT is designed specifically for corporates and working professionals alike. If you are a corporate you can opt for either 5 half days course or 2 full days course followed by an examination. If you are a working professional opt for 2 full days course followed by an examination. Total training duration is of 18 hrs.

How do I enroll myself?

You can enroll yourself here.

Table of Contents

Learning Objectives of CP-SAT:

1. Tool background

1.1. History of Selenium (30 mins)

The participant learns about the history of the tool, its evolution and the need for it.

1.2. Selenium Overview (30 mins)

Learn about the definition and usage of the tool. Get aware of the cross-language, cross-platform, cross-browser capabilities of the tool. Learn about the Selenium tool license policy. Elaborate on the three parts of the Selenium toolkit

- IDE
  - Recording and playback tool
  - Firefox extension
  - Options setup
- Selenium RC/Selenium 2.x
  - Selenium Server
  - Evolution and merger of the RC with WebDriver
- Selenium Grid
  - Need for Grid
  - Parallel execution of tests

2. IDE

Install the latest version of Firefox and get IDE plugin from SeleniumHQ.org. Learn and configure the ideal Options for your usage.

2.1. Recording & Playback and Formats in IDE (150 mins)

- Creating Test Cases and Test Suite (60 mins)
  - Learn about test scenario and extract test cases from it
  - Record first test case and observe the recorded commands associated with the test steps
  - Learn about the targets and values columns
  - Color coding of the test execution
  - Learn about Verify and Assert set of commands
  - Default save format as HTML and observe the HTML table tags in the saved test cases.
  - Create Test Suite from the group of test cases
  - Insert commands and comments
  - Debug options
  - Log window
  - Formats
- Regular Expressions (5 mins)
  - Using regular expressions

- Actions, Assertions and Accessors (10 mins)
  - The three types of the Selenese commands
- Frequently used commands (15 mins)
  - open
  - click
  - check
  - select
  - type
  - assert
  - verify
  - store
- Handling AJAX/Dynamic Elements (60 mins)
  - waitFor
  - AndWait
  - Pause (not to be used)
  - Hover menus
  - Tool tip

2.2. Locator Strategies (60 mins)

- Learn the concept of DOM
- Install and learn the Tools:
  - Firebug
  - XPath Checker
  - DOM Inspector
- Learn about the Structure Dependent locators:
  - XPath
  - DOM
  - CSS
- Learn about the Attributes-based locators:
  - Id
  - Name
  - Link

3. Selenium Server

3.1. Selenium RC and Selenium 2.x (WebDriver) (330 mins)

- Setting up your Java environment (Eclipse) (60 mins)
  - Installation of eclipse and creation of workspace
  - Creation of Java Project
  - Creation of the Source Folders, Packages and Resource Folders
  - Debugging and Running the tests
- JUnit and TestNG plugins (15 mins)
  - Learn about the need of the testing frameworks
  - History of JUnit and TestNG
  - Installation of TestNG eclipse plugin
  - Test Fixtures and Annotations

- Difference between the RC and Selenium 2.x architecture (15 mins)
  - RC Architecture
  - Selenium 2.x (WebDriver) Architecture
  - Native Browser
  - XSS issues in RC
  - Proxy Injection
  - Predefined Test Methods
- Running RC Tests (30 mins)
  - SeleneseTestCase inheritance
  - RC server startup using code
  - Open method overloading
  - Deprecated RC Class
  - JavaScript execution
- Running WebDriverBacked Tests (60 mins)
  - Learn to run the Selenese methods through new WebDriver architecture
  - Take advantage of the rich, ready to use command list of RC on Selenium 2.x
  - Migrating the old RC scripts to WebDriverBacked format
- Running WebDriver Tests (90 mins)
  - Limited methods, several RC action methods missing
  - Lightweight API
  - Wrapper methods for missing commands
  - JavaScript execution
- Test Synchronization in RC (15 mins)
- Implicit and Explicit Wait in Selenium 2.x (15 mins)
- Running JavaScript code (30 mins)
- Test Suite creation using TestNG (30 mins)

3.2. WebDriver (90 mins)

- Firefox Driver
- Chrome Driver
- Internet Explorer Driver
- Opera Driver
- Safari Driver
- Learn to manage driver capabilities
- Migrating legacy RC scripts to WebDriver

3.3. Advanced User Interaction (60 mins)

- Keyboard
- Action Builder
- Handling popups
- Handling alerts
- Capturing Screenshots

4. Framework

4.1. Testing Frameworks (120 mins)

- Data Driven Framework using RC (30 mins)
  - For Excel
  - For CSV
  - For Database
- Data Driven Framework using WebDriverBacked (30 mins)
  - For Excel
  - For CSV
  - For Database
- Data Driven Framework using WebDriver (30 mins)
  - For Excel
  - For CSV
  - For Database
- Page Factory and Page Object Model (30 mins)

5. Selenium Grid

5.1. Concept of Grid (30 mins)

Learn about the built-in grid functionality in Selenium 2.x
Learn to distribute the tests on several machines and do parallel execution
Learn to run the tests in parallel on multiple combinations of browser and OS from a central hub

5.2. Setting up Grid to run multi-browser parallel tests (60 mins)

Learn to setup the Hub server
Learn to register the WebDriver Nodes and legacy RC nodes to the Hub server
Learn to parameterize the tests to run on various nodes
Learn to override the default parameters on the nodes

6. Running Selenium Tests in Continuous Integration environment

6.1. Concept of Continuous Integration (15 mins)

Learn about the concept of Automating the Automation
Learn about the Continuous Integration practice and merging automated Selenium test scripts on CI server

6.2. Running Selenium Tests from Command line through ANT (30 mins)

Learn to install ANT
Learn about dependencies of the ANT targets
Learn to prepare tests in build.xml file

6.3. ANT task in Jenkins/Hudson (15 mins)

Learn to prepare Jenkins/Hudson to run ANT task with Selenium tests
Learn various triggering events for the test
Learn to prepare test output reports

7. Automation in Agile projects (60 mins)

7.1. Agile Manifesto

7.2. Agile in Practice (Video)

7.3. Incremental and Iterative development

7.4. Scrum – Testing in iterations

7.5. Testing challenges in Agile

7.6. Test Automation

8. Practical Selenium Automation Testing

Practice all Selenium concepts throughout the course using various practical case studies.