



## Learning Objectives of CP-SAT v 1.31

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

### What is CP-SAT?

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

- CP-SAT certification exam can be taken by anyone without going through the training program covering the learning objectives below.
- CP-SAT certification exam is the only globally accepted certification exam covering practical assessment.
- CP-SAT learning objective gives the coverage topics for anyone who want to give the exam. Any training covering the CP-SAT Syllabus would be covering the learning objectives in a practical manner.
- CP-SAT exam can now be taken in three language streams
  - Java
  - C#
  - Python

The training course provided by accredited CP-SAT license trainers is applicable for all roles and not just "testers". Knowledge, experience & certification is consciously designed to focus on "practical aspects of testing" and not just on "theory".

If you want to be accredited license trainer or partner get in touch with us at [CPSATSupport@ATAEvents.org](mailto:CPSATSupport@ATAEvents.org)



### How is it useful?

CP-SAT is designed to train testing professionals with the concepts of testing web applications using Selenium.

The training provided by accredited license trainers is completely hands-on covering execution of scripts using the features of Selenium with ample time given to practice until the concepts are mastered.

This syllabus and hence the **training course focus** on the most challenging areas for testing web applications using the **latest Selenium 3.x**, using JUnit and TestNG. There is an extensive coverage on **Data Driven Testing**, Key Word Driven Testing, Page Object Model, Selenium Grid, Continuous Integration (CI) with Jenkins and Maven.

### What has changed in this 1.31 version?

- Starting with this version CP-SAT is now available in three different language streams- 1. Java 2. C# and 3. Python
- In Java stream - Use of JXL library for Data Driven Testing has been removed. Participants can use the library but it is not mandatory to know the library from this version onwards
- Reference to some theoretical concepts including webdriver being flexible and having a lightweight API has been removed from the section "Running WebDriver tests section".

### What was changed in 1.3 version?

- ANT as a build tool has been removed
- Headless browser execution is included
- Maven now is the choice of build tool
- Helper Utility class has now been included in the framework section
- Page object Model is given more focus and time
- Data Driven Framework Using JXL and POI library has been given more focus
- IDE and RC/Webdrived Backed references have been completely withdrawn

### 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 6 half days course or 3 full days course followed by an examination.



Examination can be taken within 15 working days of the completion of the training.

## How do I enroll myself?

You can enroll yourself by writing an email to [CPSATSupport@ATAEvents.org](mailto:CPSATSupport@ATAEvents.org)

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### Version 1.31 - Learning Objectives of CP-SAT - Java Stream:

#### 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 two parts of the Selenium toolkit

- Selenium 3.x
  - Selenium WebDriver
- Selenium Grid
  - Need for Grid
  - Parallel execution of tests

#### 2. Locator Strategies (60 mins)

- Learn the concept of DOM
- Learn about the Structure Dependent locators:
  - XPath
  - CSS
- Learn about the Attributes-based locators:
  - Id
  - Name
  - Link Text
  - Partial Link Text
  - Tag Name

#### 3. Selenium Server

##### 3.2. Selenium 3.x (WebDriver) (465 Mins)

- Setting up your Java environment (Eclipse)/(Maven) (30 mins)
  - Installation of eclipse and creation of workspace
  - Creation of Java Project
  - Creation of the Source Folders, Packages and Resource Folders (using Maven)
  - Debugging and Running the tests

##### 3.3. Eclipse and Maven (30 mins)

- Learn to install Maven plugin in eclipse
- Learn about dependencies of the Maven goals
- Learn to prepare tests in pom.xml file



- JUnit and TestNG plugins (30 mins)
  - Learn about the need of the testing frameworks
  - History of JUnit and TestNG
  - Running tests using Junit
  - Running Junit Suit
  - Installation of TestNG eclipse plugin
  - Test Fixtures and Annotations
- TestNG Framework (60 mins)
  - TestNG Test Case and Test Suite
  - TestNG Prioritizing and Sequencing
  - Annotations, Grouping
  - Parametrization and Data Provider
- Running WebDriver Tests (30 mins)
  - Wrapper methods for missing commands
  - JavaScript execution
- Implicit and Explicit Wait in Selenium 3.x (15 mins)
- Running JavaScript code (30 mins)
- Test Suite creation using TestNG and Junit (30 mins)

### 3.4. Various WebDriver implementations (90 mins)

- Firefox Driver (Gecko driver)
- Chrome Driver
- Edge Driver
- Headless Browser Testing
- Learn to manage driver capabilities

### 3.5. Advanced User Interaction (150 mins)

- Keyboard
- Action Builder
- Handling popups
- Handling alerts
- Capturing Screenshots
- Drop Downs
- JQuery (Auto Complete)
- Drag and Drop

## 4. Framework

### 4.2. Testing Frameworks (460 mins)

- Data Driven Framework using WebDriver (210 mins)
  - For Excel (Using .xls and .xlsx)
  - Use of Apache Poi
- Keyword Driven Framework using WebDriver (30 mins)
  - Setting Up Keyword Driven Framework
  - Setting Up Data Engine



- Test Suite Execution
- Log Generation
- Page Factory and Page Object Model (120 mins)
- Helper / Utility framework class

## **5. Selenium Grid**

### **5.1. Selenium Grid Concept and Practical Setup (60 mins)**

- Learn about the built-in grid functionality in Selenium 3.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
- Learn to setup 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 (120 Mins)**

### **6.1. Concept of Continuous Integration (30 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. Maven task in Jenkins/Hudson (90 mins)**

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

## **7. Automation in Agile projects (Reading)**

### **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 (Exercises)**

- Practice all Selenium concepts throughout the course using various practical case studies.
- Practical Exercises post completion of the program

**This learning Objective is version 1.31 of CP-SAT.**

**Release date 16<sup>th</sup> January 2019**