

SREE VISVESWARAYA INSTITUTE OF TECHNOLOGY & SCIENCE

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TOPIC: KATALON STUDIO

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"Simple yet powerful Automation tool".

INTRODUCTION:

Katalon Studio is a web and mobile app automation testing tool and it is completely free. It is based on Selenium and uses Groovy, a scripting language built on top of Java for writing automation script.

It has the simple deployment method with all the frameworks and integrated Application Lifecycle Management (ALM) in a single package. It is very user friendly, thanks to its simple UI, which makes it easy for all the beginners and advanced users in the automation field. Katalon Studio provides all the features for web and mobile testing which includes Record feature for creating automation script and writing automation script manually.

Katalon Studio is the best tool for anyone who wants to go in the automation field or start career as an automation tester. It can be really helpful to learn automation testing. It is almost the same as the other Automation testing tools like TestComplete, TestingWhiz or

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QTP (HP UFT), but the main advantage of using Katalon Studio is that, it is completely cost free compared to others.

Features:

- Record and Playback features.
- Web, Mobile and Web service testing all together in one tool.
- Run multiple tests at once as a Test Suite.
- Test Suite Report Generation.
- Spy Web feature for storing all the object locators.
- Jira integration
- Supports Data-driven testing
- Git integration for source code management and sharing..

BENEFITS:

- It is free of cost.
- It can automate the object whose locators/id are unable to find, through Image click feature. It will check the appearance of the image and if match found, it will interact with

the image accordingly and perform all the actions.

- Reduces effort and time.
- It can easily read and use testdata from excel file, directly in the testcases.
- It allows us to create custom Test objects, keywords and checkpoints
- Generates report after the test suite execution.

INSTALLATION:

- Install Java
- Katalon Studio is available for free, supporting both Windows and Mac. Visit the [Katalon Studio website](https://www.katalon.com/) to download the latest version.
- To start Katalon Studio, double-click on the katalon.exe (Microsoft Windows) or katalon (Mac) file in the directory where you unpack Katalon Studio. For example:

After launching Katalon Studio, provide your registered username and password to activate your Katalon Studio. The username and password are the same as the ones you created when registering and downloading Katalon Studio from <https://www.katalon.com/>.

What Makes Katalon Studio More Powerful Than Any Other Selenium-Based Frameworks?

Take a look at the benefits of Katalon Studio, a free test automation solution for both web-based and mobile apps without the extensive coding of Selenium

As a test automation engineer, we should always consider a few cornerstones before employing a tool to automate our products. As you know, the primary benefits of test automation are reusability, scalability, improving test coverage, time and effort saving. Many of us say that using Selenium integrated with other third-party tools would achieve all the above cornerstones. But still, we have a few drawbacks. Let's see how [Katalon Studio](https://www.katalon.com/) is a magic wand for solving test automation difficulties.

Challenges With Selenium/Appium-Based Frameworks

Let's say we need to automate a modern application which has web UI, a mobile app, and web services. Applying test automation for this application takes much time and effort for coding to automate test scenarios, publishing content from the web UI, and verifying the same content in the database and from web services. The same process is required for the mobile app on Android and iOS platforms. Making this more challenging, open-source automation solutions like Selenium require various third-party tools to be integrated and configured.

This challenge is simply addressed by employing Katalon Studio; you can easily

automate mobile and web services and execute the scripts on your desired platform. Trust me, people out there are taking weeks to automate web, mobile apps, and API when Katalon Studio can do it for you in few hours.

Technical Skills:

Selenium is a functional automation API which requires technical skills to automate applications. Even though Selenium is a powerful, free, and open source tool, the time we invest in learning and setting up the development environment for automation would take months. Moreover, it supports only web-based applications. To automate mobile apps, we need to integrate Appium libraries to the framework. Not every tester can automate unless they have advanced coding skills. Isn't this a drawback when we cannot automate basic functionalities of an application without coding?

Katalon Studio makes it possible to automate most of the common functionalities of web and mobile apps without the coding experience. This tool enables everyone to automate with ease and efficiency by leveraging built-in features. You can even start automating the application right from the first sprint.

Record and Play on Popular Browsers and Mobile Apps:

Test recording is the fastest way for users to automate applications. Identifying objects on applications is time-consuming and painful.

It is even a nightmare to update them when applications are changed.

Unlike Selenium, Katalon Studio utility supports record and run the same tests on multiple browsers. In addition, Katalon Studio is intelligent enough to handle dynamic web elements by modifying the test object properties with its built-in methods (Add/Remove Object Property) at runtime.

Beyond just recording your actions performed on web applications, using Katalon Studio you can also record your mobile app actions. Isn't it cool when you record your mobile app actions and organize test objects with ease? With Selenium, this is not possible without using third party libraries.

Save the Investment of Designing an Automation Framework:

The toughest job in automation is to design a framework satisfying specific requirements of an application. Nowadays, Selenium with page-object model, a data-driven framework, and TestNG is seen an automation solution by many of us. There is nothing wrong with implementing the framework yourself, but time and cost are the most important factors to be considered. We cannot take three weeks to design a framework when the testing phase ends in five weeks.

This is why Katalon Studio empowers teams to collaborate and produce high-quality applications using its well-structured framework and built-in features.

Page-Object Model Framework:

Katalon Studio enables the users to streamline the capturing process to store and manage the page objects using the project structure and then organize them in specific classes to reuse later. With other Selenium open source wrappers, you can only use the XPath on the code level with the result that you would have to maintain your test scripts upon the change of the test application. To capture the page object, we need to rely on other tools such as Firebug/Firepath to manually identify the web elements, and this process is tedious and painful to organize the page object pattern when the requirements get changes.

What Is the Solution? How Can We Save Time?

Katalon Studio will solve the problem and save you weeks of time. When we are designing a framework, we must assume that it is going to be executed, analyzed, and maintained by other resources as well. Katalon Studio itself has a built-in framework which is well organized. Using its object repository feature, we can achieve reusability and easy maintenance. The most interesting features, the spy utility captures the web and mobile objects just with one key press. Katalon Studio is intelligent enough to capture your element with all possible locators. So if we are dealing with dynamically changing elements, we can use our desired locator just by selecting it. This saves huge time when we are supposed to

capture mobile elements. Once you capture the page objects all you need to do is click on the button 'Add to Object Repository.' This would keep all your objects organized within your project explorer which can be reused & maintained with ease. You can easily modify the object properties from the user interface.

Built-In Data Driven Framework:

It is always tricky to implement data-driven testing with Selenium. You have to be a good programmer to write the code that fetches the data from the spreadsheets or CSV file. Furthermore, to retrieve the data from the database, you need to have proper JDBC connection configured with the desired database. Can you imagine how much time we spend on coding to parse test data in spreadsheets (Excel/CSV)?

Katalon Studio shipped with built-in data driven framework. Using Katalon Studio data files we can create more flexible and secure tests that can run on multiple configurations. Data can be parsed easily from Excel sheets, CSV files and even from the database. When we prefer Excel sheets, Katalon Studio gives us an option to select the columns and rows to be imported which becomes easy for a tester and we can quickly use the test data wherever we need. In addition to external data sources, Katalon Studio also has internal data storage.

Testng & Exception Handling:

TestNG with Selenium API is a common automation solution giving us options to group our tests, parallel execution, cross browser execution, and defining and executing dependency tests. But to put all these in place, we need technical skills. We know how tough it is to code, maintain, and execute the test scripts in multiple browsers in parallel, not to mention custom coding to handle exceptions.

For cross-browser and platform testing, Katalon Studio provides built-in features to execute test scripts in multiple browsers in parallel or sequential by creating the test suites to be automated and select the environment configurations in which we want to execute. The tool provides flow control ability which allows us to manage exception handling and dynamically define the execution procedure. Another interesting feature: Katalon Studio supports remote server execution with a few clicks. No more XML configuration files and coding- all these features come handy with Katalon Studio.

API Testing:

Generally, when we need to test our web services, we may employ tools like SOAPUI, or we may code it using RESTful services to send a request to the server and parse the response to validate it.

Employing Katalon Studio would avoid the coding part, as it has built-in keywords for both REST and SOAP web testing services. To

parse and validate the response, we also have many built-in keywords for the assertion. If we employ a tool like the SOAPUI free version, we cannot run it through automation and need coding to generate the report. Katalon Studio allows us to append our web-services tests in a test suite to trigger whenever we need it; a report will also be generated and auto-emailed to the recipient list provided.

Logging and Debugging:

When we use Selenium frameworks, we need to integrate third-party libraries to make logs for debugging purposes. It's always mundane work to enable and disable logs for every function and model. Katalon Studio by default enables logs for every test step in the test case. We don't need to write any code further to make logs. This tool has a log viewer section where we can view the logs, or we can check them in the reports. When it comes to debugging, Katalon Studio has a good debugging feature which allows us to debug and solve the exceptions we face.

Rich Reporting Framework:

Though we design perfect test scripts, we still need a good report to share the automation status and test coverage. In Selenium, we need to call third party libraries to generate a report. To generate the report in various formats, it requires coding and designing skills. By default, the Selenium API won't give us any reports unless the TestNG framework is integrated.

Katalon Studio easily generates HTML, CSV, or PDF reports, providing an overview of how our automated testing efforts are progressing by appending screenshots and logs.

ALM Integrations:

Selenium needs third party tools to integrate with ALMs like JIRA, and Slack, and custom coding to execute Selenium test scripts in the cloud environment (Sauce Labs, BrowserStack, Kobiton).

Solving this issue, Katalon Studio gives us native integrations with ALM like JIRA, and qTest to link the test execution to the requirements and defects. Katalon Studio also supports CI tools like Jenkins and TeamCity for continuous integration and plugins with cloud services.



Here is a summary of what Katalon Studio can do to address the limitations of Selenium:

- Eliminate the need for user-defined frameworks and expensive programmers to build test automation.
- Create test scenarios that accurately simulate real business workflows much faster &

- Create, Manage and Use test data securely with ease
- Easily automate Web Apps, Mobile Apps, Web APIs without programming skill.
- Execute test scripts in parallel and cross browsers without programming skills.
- Empower your Agile Teams with Continuous Testing by Continuous Integration.
- Simulate complex test workflows easily with looping, conditional statements and control flow commands with built-in keywords.
- Easily automate dynamic UI & frequently changing content with ease.
- For programming lovers, Katalon Studio allows us to code to achieve complex functionality using Script Mode.
- Katalon Studio eliminates need for wait statements even for inconsistent page loads and AJAX with its built-in keywords for synchronization.

FEATURES:



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