SOFTWARE TESTING (18IS62)

SCIENTIFIC CALCULATOR

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Importance of Software Testing

01 Quality Assurance

Software testing is crucial for ensuring the quality and reliability of software products.

02 Risk Mitigation

Testing helps mitigate risks associated with software like failures, security and data loss.

03 Cost Savings

Early detection and resolution of defects through testing can save significant costs in the long run.

04 Compliance

Many industries have specific regulations and standards that software must adhere to.

05 Improvement

Testing is an iterative process that helps teams continuously improve their software.

06 Scalability

Testing ensures that software can handle the anticipated load and perform optimally under different scenarios.

Advantages of Software Testing

01

Improved Quality

Software testing helps improve the quality of the software by identifying and fixing bugs, errors, and defects.

02

Time Saving

Testing helps identify and address issues that could cause delays or interruptions in software development.

03

Increased Efficiency

Testing helps identify and fix performance issues and scalability limitations in software systems.

04

Increased Security

Security testing is crucial for identifying vulnerabilities and weaknesses in software systems.

Scientific Calculator

It is a device that goes beyond basic arithmetic calculations and provides a wide range of advanced functions to solve complex mathematical problems.

The key features of the scientific calculator typically include arithmetic operations (addition, subtraction, multiplication, division), trigonometric functions (sine, cosine, tangent), logarithmic functions, exponential functions, statistical functions and more.

Additionally, it offers memory storage and recall functionality, as well as the ability to perform calculations with variables.

Advantages of Selected Application

Accuracy

Scientific calculator application ensures that calculations are performed correctly.

Efficiency

It eliminates the need for manual calculations and saving valuable time during the testing process.

Functionality

Scientific calculators offer a wide range of mathematical functions and statistical calculations.

Portability

With application installed on a mobile device or computer, testers can carry it with them wherever they go.

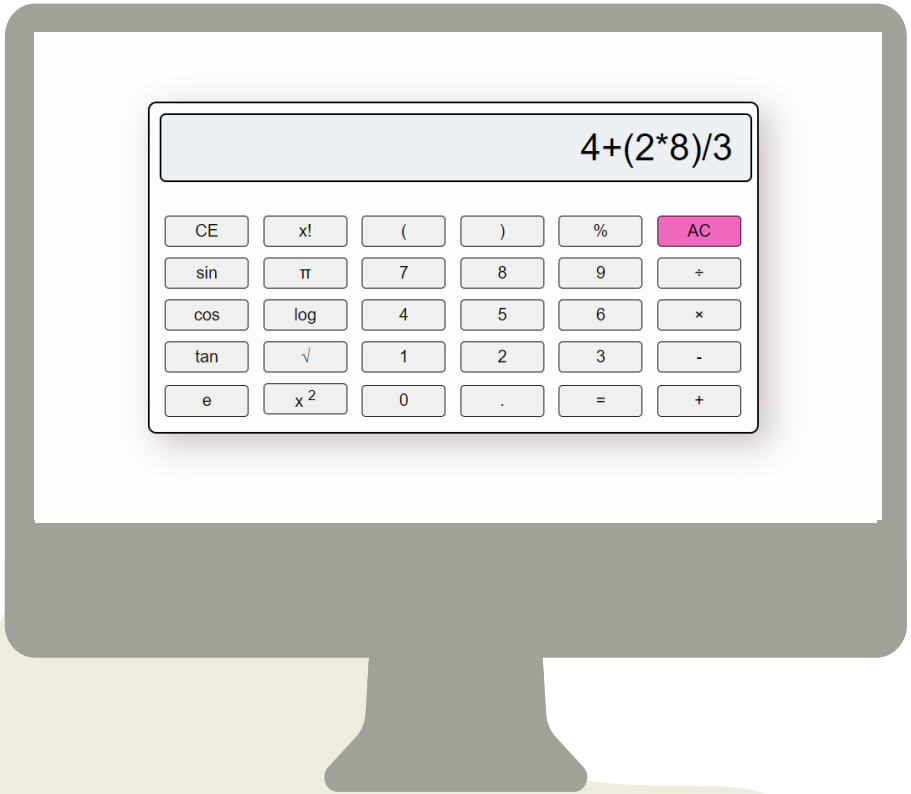
Documentation

It provides features for documenting and storing calculations.

Testing Techniques

Unit Testing	Integration Testing	System Testing	Boundary Value Testing	Equivalence Class Testing
Function or method is tested independently to ensure that it performs as expected.	It ensures that the various functions work together seamlessly and produce the expected results.	It focuses on validating the system behaviour, performance, and functionality against the specified requirements.	Testing identify the minimum and maximum values that can be accepted by each function and test the calculator's response.	Input space is divided into equivalence classes or groups. Each group represents a set of inputs that should produce the same output.

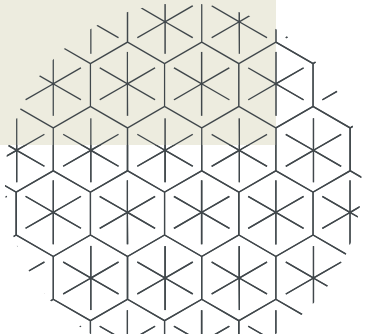
UI/UX



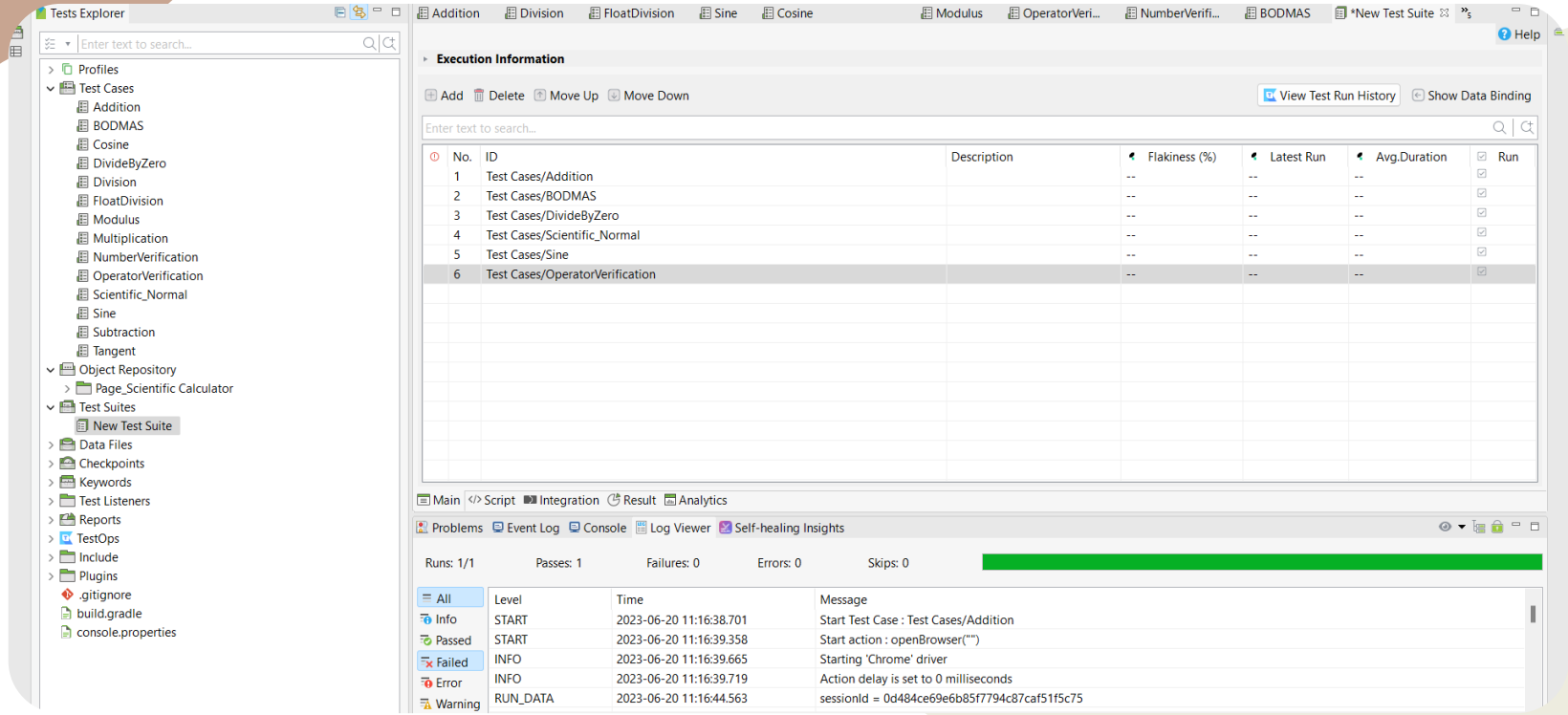
Katalon Studio

Katalon Studio is a free automation testing solution developed by Katalon LLC. The user interface is a complete integrated development environment (IDE) implemented on Eclipse rich client platform(RCP). The main scripting language is Groovy, Java, and JavaScript and can be executed against all modern browsers, iOS, and Android applications supported by Selenium and Appium.

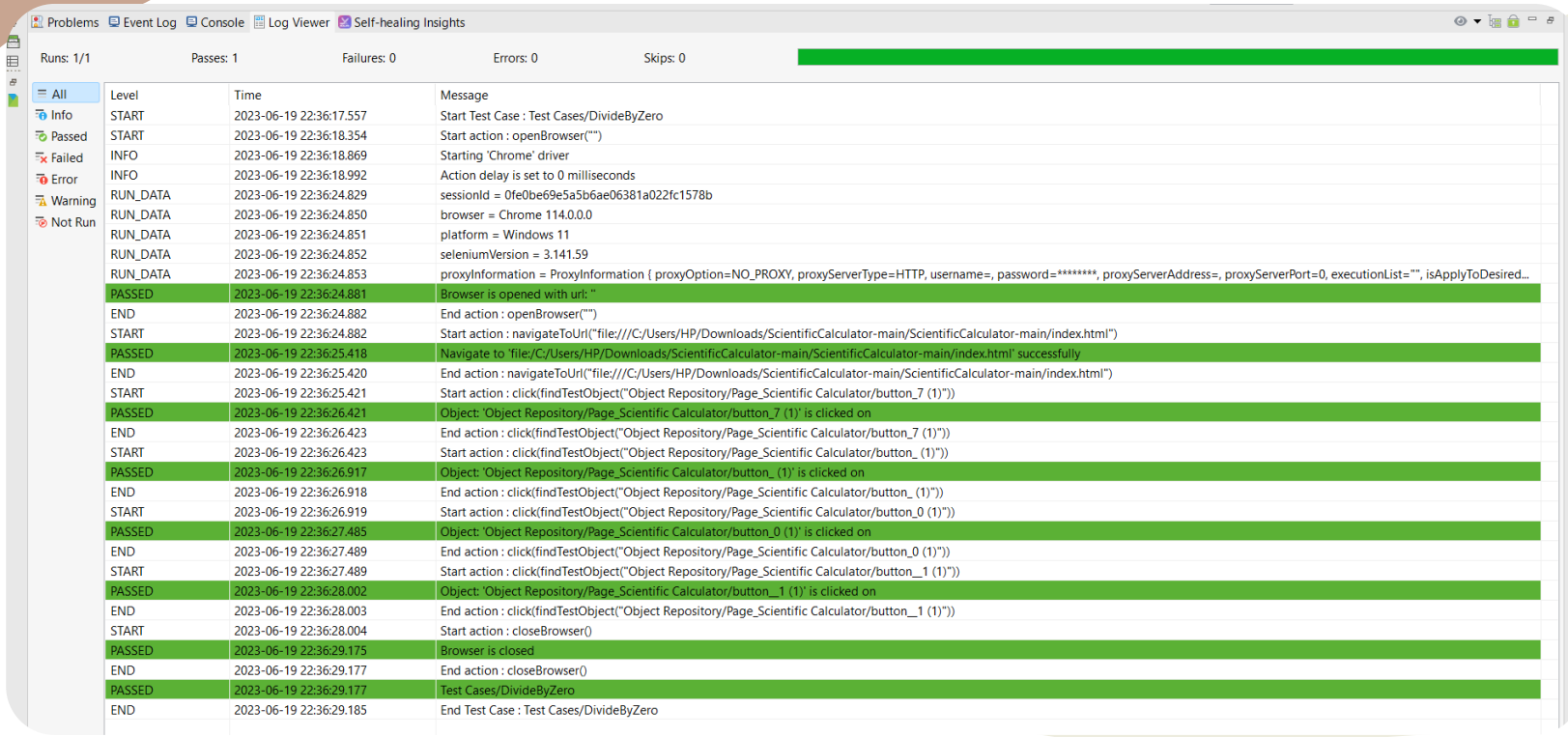
- Start Katalon Studio
- Record the execution of the website for relay and capture
- Modify Test cases for all possible cases
- Create Test Suite for every functionality of the website
- Add test cases to test Suite
- Variable data binding
- Run all the test suite one by one
- Analyze the result



Test Suite

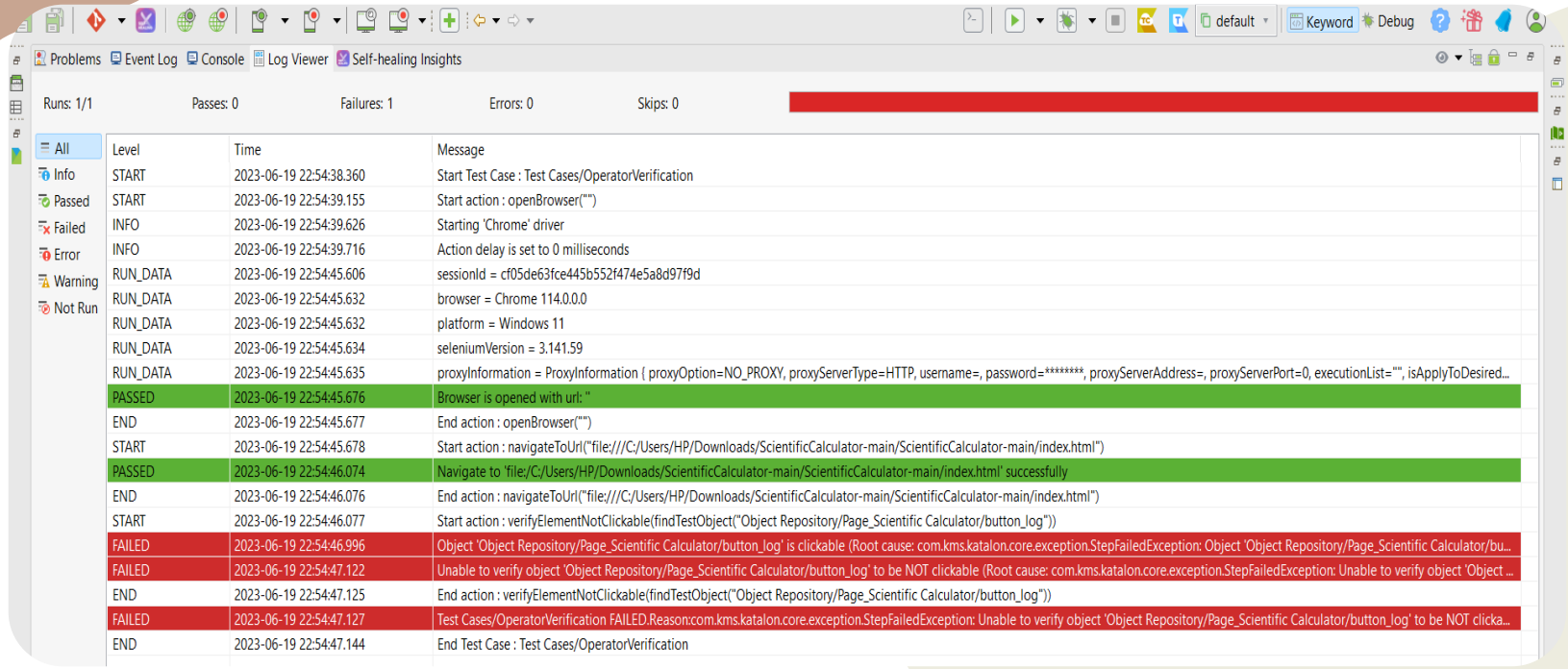

Tests Explorer
Enter text to search...
Profiles
Test Cases
Addition
BODMAS
Cosine
DivideByZero
Division
FloatDivision
Modulus
Multiplication
NumberVerification
OperatorVerification
Scientific_Normal
Sine
Subtraction
Tangent
Object Repository
Page_Scientific Calculator
Test Suites
New Test Suite
Data Files
Checkpoints
Keywords
Test Listeners
Reports
TestOps
Include
Plugins
.gitignore
build.gradle
console.properties
Addition
Division
FloatDivision
Sine
Cosine
Modulus
OperatorVeri...
NumberVerifi...
BODMAS
*New Test Suite
Help
Execution Information
Add
Delete
Move Up
Move Down
View Test Run History
Show Data Binding
Enter text to search...
No.
ID
Description
Flakiness (%)
Latest Run
Avg.Duration
Run
1 Test Cases/Addition
2 Test Cases/BODMAS
3 Test Cases/DivideByZero
4 Test Cases/Scientific_Normal
5 Test Cases/Sine
6 Test Cases/OperatorVerification
Main
Script
Integration
Result
Analytics
Problems
Event Log
Console
Log Viewer
Self-healing Insights
Runs: 1/1
Passes: 1
Failures: 0
Errors: 0
Skips: 0
All
Info
Passed
Failed
Error
Warning
Level
Time
Message
START 2023-06-20 11:16:38.701 Start Test Case : Test Cases/Addition
START 2023-06-20 11:16:39.358 Start action : openBrowser("")
INFO 2023-06-20 11:16:39.665 Starting 'Chrome' driver
INFO 2023-06-20 11:16:39.719 Action delay is set to 0 milliseconds
RUN_DATA 2023-06-20 11:16:44.563 sessionId = 0d484ce69e6b85f7794c87caf51f5c75

Passing Test Case



Level	Time	Message
START	2023-06-19 22:36:17.557	Start Test Case : Test Cases/DivideByZero
START	2023-06-19 22:36:18.354	Start action : openBrowser("")
INFO	2023-06-19 22:36:18.869	Starting 'Chrome' driver
INFO	2023-06-19 22:36:18.992	Action delay is set to 0 milliseconds
RUN_DATA	2023-06-19 22:36:24.829	sessionId = 0fe0be69e5a5b6ae06381a022fc1578b
RUN_DATA	2023-06-19 22:36:24.850	browser = Chrome 114.0.0.0
RUN_DATA	2023-06-19 22:36:24.851	platform = Windows 11
RUN_DATA	2023-06-19 22:36:24.852	seleniumVersion = 3.141.59
RUN_DATA	2023-06-19 22:36:24.853	proxyInformation = ProxyInformation { proxyOption=NO_PROXY, proxyServerType=HTTP, username=, password=********, proxyServerAddress=, proxyServerPort=0, executionList="", isApplyToDesired...
PASSED	2023-06-19 22:36:24.881	Browser is opened with url: ''
END	2023-06-19 22:36:24.882	End action : openBrowser("")
START	2023-06-19 22:36:24.882	Start action : navigateToUrl("file:///C:/Users/HP/Downloads/ScientificCalculator-main/ScientificCalculator-main/index.html")
PASSED	2023-06-19 22:36:25.418	Navigate to 'file:/C:/Users/HP/Downloads/ScientificCalculator-main/ScientificCalculator-main/index.html' successfully
END	2023-06-19 22:36:25.420	End action : navigateToUrl("file:///C:/Users/HP/Downloads/ScientificCalculator-main/ScientificCalculator-main/index.html")
START	2023-06-19 22:36:25.421	Start action : click(findTestObject("Object Repository/Page_Scientific Calculator/button_7 (1)"))
PASSED	2023-06-19 22:36:26.421	Object: 'Object Repository/Page_Scientific Calculator/button_7 (1)' is clicked on
END	2023-06-19 22:36:26.423	End action : click(findTestObject("Object Repository/Page_Scientific Calculator/button_7 (1)"))
START	2023-06-19 22:36:26.423	Start action : click(findTestObject("Object Repository/Page_Scientific Calculator/button_ (1)"))
PASSED	2023-06-19 22:36:26.917	Object: 'Object Repository/Page_Scientific Calculator/button_ (1)' is clicked on
END	2023-06-19 22:36:26.918	End action : click(findTestObject("Object Repository/Page_Scientific Calculator/button_ (1)"))
START	2023-06-19 22:36:26.919	Start action : click(findTestObject("Object Repository/Page_Scientific Calculator/button_0 (1)"))
PASSED	2023-06-19 22:36:27.485	Object: 'Object Repository/Page_Scientific Calculator/button_0 (1)' is clicked on
END	2023-06-19 22:36:27.489	End action : click(findTestObject("Object Repository/Page_Scientific Calculator/button_0 (1)"))
START	2023-06-19 22:36:27.489	Start action : click(findTestObject("Object Repository/Page_Scientific Calculator/button__1 (1)"))
PASSED	2023-06-19 22:36:28.002	Object: 'Object Repository/Page_Scientific Calculator/button__1 (1)' is clicked on
END	2023-06-19 22:36:28.003	End action : click(findTestObject("Object Repository/Page_Scientific Calculator/button__1 (1)"))
START	2023-06-19 22:36:28.004	Start action : closeBrowser()
PASSED	2023-06-19 22:36:29.175	Browser is closed
END	2023-06-19 22:36:29.177	End action : closeBrowser()
PASSED	2023-06-19 22:36:29.177	Test Cases/DivideByZero
END	2023-06-19 22:36:29.185	End Test Case : Test Cases/DivideByZero

Failing Test Case



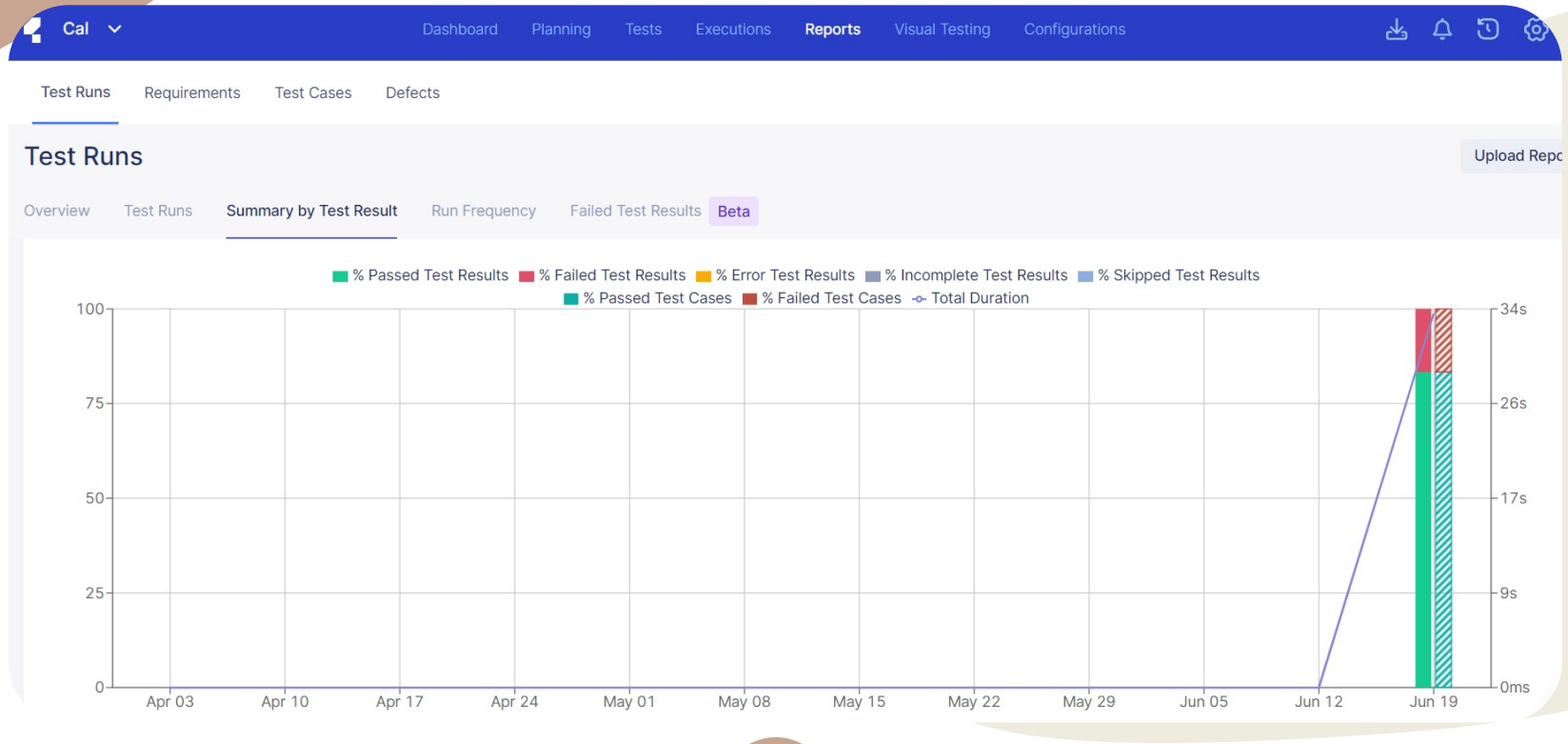
Problems | Event Log | Console | Log Viewer | Self-healing Insights

Runs: 1/1 Passes: 0 Failures: 1 Errors: 0 Skips: 0

All | Info | Passed | Failed | Error | Warning | Not Run

Level	Time	Message
START	2023-06-19 22:54:38.360	Start Test Case : Test Cases/OperatorVerification
START	2023-06-19 22:54:39.155	Start action : openBrowser("")
INFO	2023-06-19 22:54:39.626	Starting 'Chrome' driver
INFO	2023-06-19 22:54:39.716	Action delay is set to 0 milliseconds
RUN_DATA	2023-06-19 22:54:45.606	sessionId = cf05de63fce445b552f474e5a8d97f9d
RUN_DATA	2023-06-19 22:54:45.632	browser = Chrome 114.0.0.0
RUN_DATA	2023-06-19 22:54:45.632	platform = Windows 11
RUN_DATA	2023-06-19 22:54:45.634	seleniumVersion = 3.141.59
RUN_DATA	2023-06-19 22:54:45.635	proxyInformation = ProxyInformation { proxyOption=NO_PROXY, proxyServerType=HTTP, username=, password=********, proxyServerAddress=, proxyServerPort=0, executionList="", isApplyToDesired...
PASSED	2023-06-19 22:54:45.676	Browser is opened with url: ''
END	2023-06-19 22:54:45.677	End action : openBrowser("")
START	2023-06-19 22:54:45.678	Start action : navigateToUrl("file:///C:/Users/HP/Downloads/ScientificCalculator-main/ScientificCalculator-main/index.html")
PASSED	2023-06-19 22:54:46.074	Navigate to 'file:/C:/Users/HP/Downloads/ScientificCalculator-main/ScientificCalculator-main/index.html' successfully
END	2023-06-19 22:54:46.076	End action : navigateToUrl("file:///C:/Users/HP/Downloads/ScientificCalculator-main/ScientificCalculator-main/index.html")
START	2023-06-19 22:54:46.077	Start action : verifyElementNotClickable(findTestObject("Object Repository/Page_Scientific Calculator/button_log"))
FAILED	2023-06-19 22:54:46.996	Object 'Object Repository/Page_Scientific Calculator/button_log' is clickable (Root cause: com.kms.katalon.core.exception.StepFailedException: Object 'Object Repository/Page_Scientific Calculator/bu...
FAILED	2023-06-19 22:54:47.122	Unable to verify object 'Object Repository/Page_Scientific Calculator/button_log' to be NOT clickable (Root cause: com.kms.katalon.core.exception.StepFailedException: Unable to verify object 'Object ...
END	2023-06-19 22:54:47.125	End action : verifyElementNotClickable(findTestObject("Object Repository/Page_Scientific Calculator/button_log"))
FAILED	2023-06-19 22:54:47.127	Test Cases/OperatorVerification FAILED.Reason:com.kms.katalon.core.exception.StepFailedException: Unable to verify object 'Object Repository/Page_Scientific Calculator/button_log' to be NOT clicka...
END	2023-06-19 22:54:47.144	End Test Case : Test Cases/OperatorVerification

Graph


Cal
Dashboard
Planning
Tests
Executions
Reports
Visual Testing
Configurations
Test Runs
Requirements
Test Cases
Defects
Test Runs
Upload Repo
Overview
Test Runs
Summary by Test Result
Run Frequency
Failed Test Results
Beta
% Passed Test Results
% Failed Test Results
% Error Test Results
% Incomplete Test Results
% Skipped Test Results
% Passed Test Cases
% Failed Test Cases
Total Duration
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75
50
25
0
34s
26s
17s
9s
0ms
Apr 03
Apr 10
Apr 17
Apr 24
May 01
May 08
May 15
May 22
May 29
Jun 05
Jun 12
Jun 19

Thanks