



## Software Engineering Lab

### Theory:

Software Testing is a method to check whether the actual software product matches expected requirements and to ensure that software product is Defect free. It involves execution of software/system components using manual or automated tools to evaluate one or more properties of interest. The purpose of software testing is to identify errors, gaps or missing requirements in contrast to actual requirements.

Some prefer saying Software testing definition as a White Box and Black Box Testing. In simple terms, Software Testing means the Verification of Application Under Test (AUT). This Software Testing course introduces testing software to the audience and justifies the importance of software testing.

### 7 Principles of Software Testing

1. Testing shows presence of defects
2. Exhaustive testing is not possible
3. Early testing
4. Defect clustering
5. Pesticide paradox
6. Testing is context dependent
7. Absence of errors fallacy

Testing Category	Types of Testing
Functional Testing	<ul style="list-style-type: none"><li>• <a href="#">Unit Testing</a></li><li>• <a href="#">Integration Testing</a></li><li>• Smoke</li><li>• UAT ( User Acceptance Testing)</li><li>• Localization</li><li>• Globalization</li><li>• Interoperability</li><li>• So on</li></ul>
Non-Functional Testing	<ul style="list-style-type: none"><li>• Performance</li><li>• Endurance</li><li>• Load</li><li>• Volume</li><li>• Scalability</li><li>• Usability</li><li>• So on</li></ul>
Maintenance	<ul style="list-style-type: none"><li>• Regression</li><li>• Maintenance</li></ul>



## Software Engineering Lab

Objectives:

The objectives of this lab are:

- To understand the importance of software testing
- To create test case manually and automated test.
- To verify and test automated test case validation using selenium IDE

Tools:

Chrome Browser:

[https://www.google.com/chrome/?brand=CHBD&brand=CHBD&gclid=EAIaIQobChMIyo6-8fyW\\_QIVRDVYCh2vdQzaEAAYASABegIC1PD\\_BwE&gclid=aw.ds](https://www.google.com/chrome/?brand=CHBD&brand=CHBD&gclid=EAIaIQobChMIyo6-8fyW_QIVRDVYCh2vdQzaEAAYASABegIC1PD_BwE&gclid=aw.ds)

Selenium IDE: <https://www.selenium.dev/selenium-ide/>

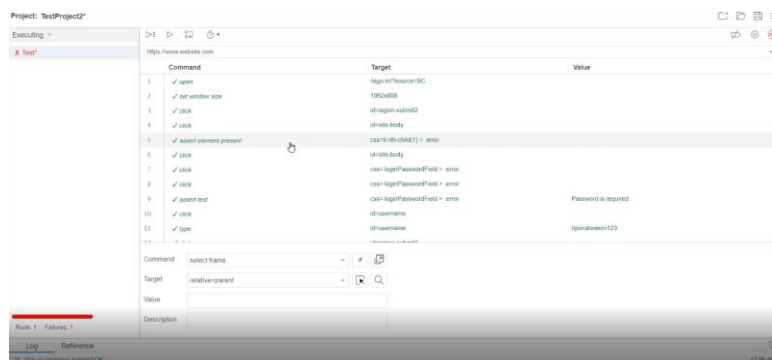
Task:

Website to test Login: <https://www.website.com/sign-in/?source=SC>

Sample test case:

Test Area:	Login				
Test Case ID:	login001				
Summary/Purpose:	To verify the failure of login when Username and Password are invalid/wrong				
Precondition:	User must Signup/Registration				
Sl. No.	Test steps	Test Data	Expected Result	Actual Result	Pass/Fail?
1	Leave Username and Password blank -> Click LOG IN button		Login will fail and a notification message will be displayed - "Username is required", "Password is required"	As same as Expected Result	Pass
2	Insert valid Username and leave Password blank -> Click LOG IN button		Login will fail and a notification message will be displayed		
3	Leave Username blank and insert valid Password -> Click LOG IN button		Login will fail and a notification message will be displayed		
4	Insert invalid value both for Username and Password -> Click LOG IN button		Login will fail and a notification message will be displayed		
5	Insert invalid Username and leave Password blank -> Click LOG IN button		Login will fail and a notification message will be displayed		
6	Leave Username blank and insert invalid Password -> Click LOG IN button		Login will fail and a notification message will be displayed		
7	Insert valid Username and invalid Password -> Click LOG IN button		Login will fail and a notification message will be displayed		
8	Insert invalid Username and valid Password -> Click LOG IN button		Login will fail and a notification message will be displayed		

Test case validation:





## Software Engineering Lab

Assignment:

Consider a simple Notepad which has the following Font feature/functionality. Write Test case to test this feature:

Font Family: Arial, Times New Roman

Font Style: Regular, Bold

Font Size: 10, 11, 12

Write down the test cases of all the features and complete automated testing result using selenium IDE as shown in the lab.