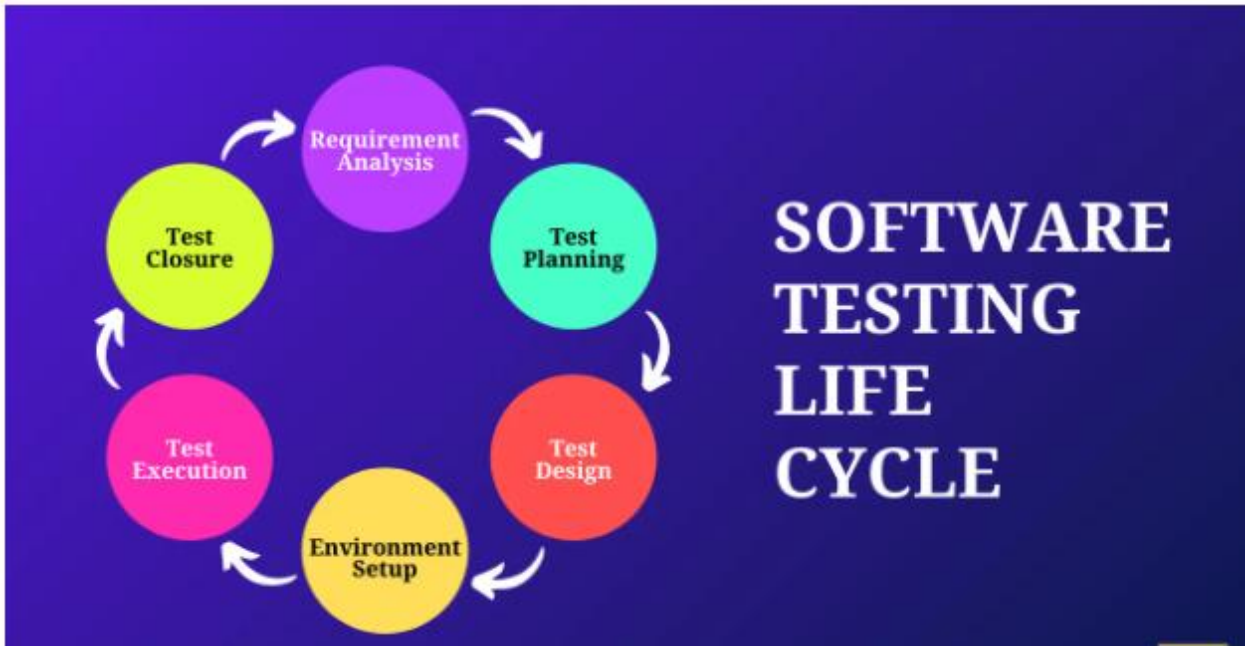
Software Testing Life Cycle (STLC)



In this post, we'll take you through everything you need to know about Software Testing Life Cycle (STLC). In the earlier post, we have learnt what is Software Testing and Software Development Life Cycle.

We'll start with a Definition of STLC, STLC Phases and the following.

What is STLC?

Software Testing Life Cycle (**STLC**) identifies what test activities to carry out and when to accomplish those test activities. Even though testing differs between organizations, there is a testing life cycle.

Phases of STLC

The different phases of the Software Testing Life Cycle Model (STLC Model) are:

1. Requirement Analysis
2. Test Planning
3. Test Design
4. Test Environment Setup
5. Test Execution

6. Test Closure
7. Every phase of STLC (Software Testing Life Cycle) has a definite Entry and Exit Criteria.

8. 1. Requirement Analysis

9. The entry criteria for this phase are the BRS (Business Requirement Specification) document. During this phase, the test team studies and analyzes the requirements from a testing perspective.
10. This phase helps to identify whether the requirements are testable or not. If any requirement is not testable, the test team can communicate with various stakeholders (Client, Business Analyst, Technical Leads, System Architects, etc) during this phase so that the mitigation strategy can be planned.
11. **Entry Criteria:** BRS (Business Requirement Specification)
12. **Deliverables:** List of all testable requirements, Automation feasibility report (if applicable)

2. Test Planning:

Test planning is the first step in the testing process.

In this phase typically Test Manager/Test Lead involves determining the effort and cost estimates for the entire project. Preparation of the Test Plan will be done based on the requirement analysis.

Activities like resource planning, determining roles and responsibilities, tool selection (if automation), training requirements, etc., carried out in this phase.

Entry Criteria: Requirements Documents

Deliverables: Test Strategy, Test Plan, and Test Effort estimation document.

3. Test Design:

The test team starts with test case development activity here in this phase. Testers prepares test cases, test scripts (if automation), and test data.

Once the test cases are ready then these test cases are reviewed by peer members or team lead.

Also, the test team prepares the Requirement Traceability Matrix (RTM). RTM traces the requirements to the test cases that are needed to verify whether the requirements are fulfilled. The deliverables of this phase are Test Cases, Test Scripts, Test Data, Requirements Traceability Matrix

Entry Criteria: Requirements Documents (Updated version of unclear or missing requirement)

Deliverables: Test cases, Test Scripts (if automation), Test data.

In this phase, Selenium would be the most popular tool to use. However, its complexities and programming experience needed to Python or C# would definitely pose a problem to your manual QAs and automation freshers.

Here, Katalon Studio would be your go-to choose in simplifying Selenium's essential capabilities through codeless automation, built-in keywords, and pre-defined artifact templates for test suites.

4. Test Environment Setup:

This phase can be started in parallel with the Test design phase.

The test environment setup is done based on the hardware and software requirement list. In some cases, the test team may not be involved in this phase. The development team or customer provides the test environment.

Meanwhile, the test team should prepare the smoke test cases to check the readiness of the given test environment.

Entry Criteria: Test Plan, Smoke Test cases, Test Data

Deliverables: Test Environment. Smoke Test Results.

5. Test Execution:

The test team starts executing the test cases based on the planned test cases. If a test case result is Pass/Fail then the same should be updated in the test cases.

The defect report should be prepared for failed test cases and should be reported to the Development Team through a bug tracking tool for fixing the defects.

Retesting will be performed once the defect was fixed. Click here to see the Bug Life Cycle.

Entry Criteria: Test Plan document, Test cases, Test data, Test Environment.

Deliverables: Test case execution report, Defect report, RTM

By integrating with common testing frameworks like TestNG or Jest to TestOps, you can easily manage and schedule test runs, visualize and organize all results in a single dashboard.

6. Test Closure:

The final stage where we prepare Test Closure Report, Test Metrics.

The testing team will be called out for a meeting to evaluate cycle completion criteria based on Test coverage, Quality, Time, Cost, Software, Business objectives.

The test team analyses the test artifacts (such as Test cases, Defect reports, etc.,) to identify strategies that have to be implemented in the future, which will help to remove process bottlenecks in the upcoming projects.

Entry Criteria: Test Case Execution report (make sure there are no high severity defects opened), Defect report

Deliverables: Test Closure report, Test metrics

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