

# Gurzu QA - STLC

Gurzu Quality Assurance - Software Testing Life Cycle Book.

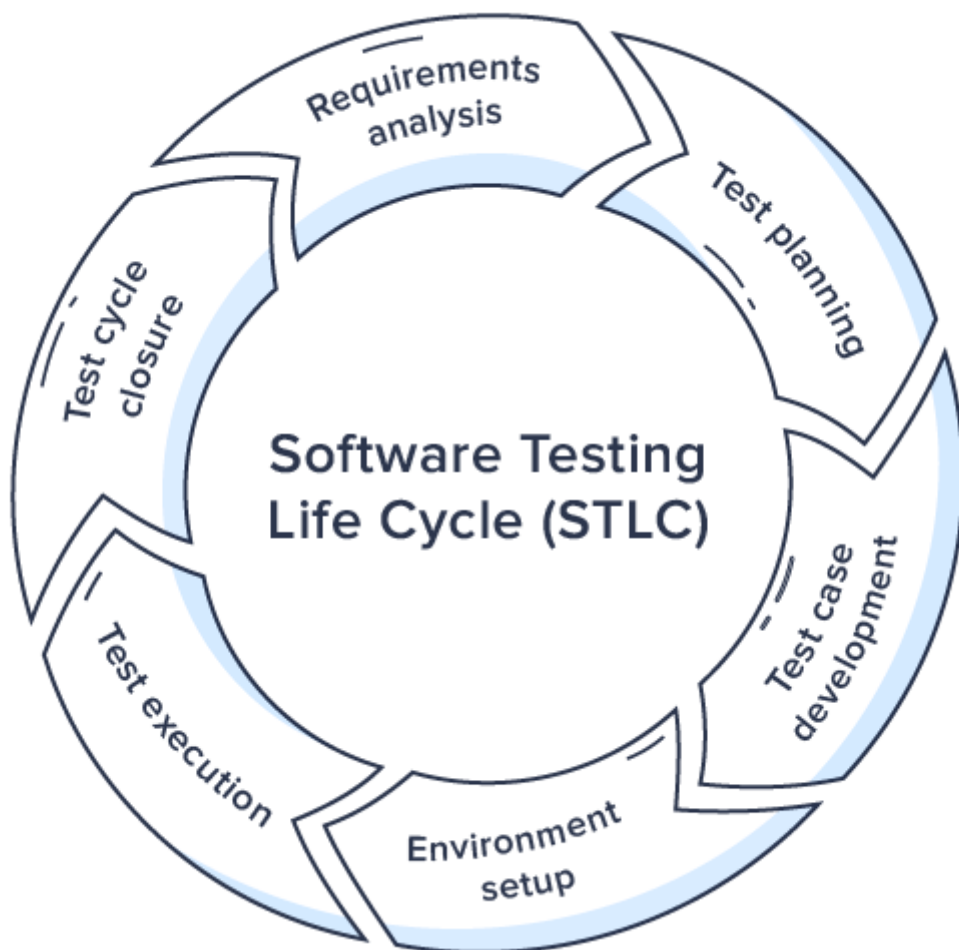
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# Introduction to STLC

The Software Testing Life Cycle (STLC) is a sequence of specific actions performed during the testing process to ensure that the software quality objectives are met. The STLC includes both verification and validation. Contrary to popular belief, software testing is not just a separate activity. It consists of a series of methodological activities to help certify your software product.

The STLC has several interconnected phases and is generally very similar to the SDLC system. These phases are sequential and are called:

1. Requirement Analysis
2. Test Planning
3. Test Case Development
4. Test Environment Setup
5. Test Execution
6. Test Cycle Closure



**Requirement Analysis** in which test team studies the requirements from a testing point of view to identify testable requirements and the QA team may interact with various stakeholders to understand requirements in detail. Requirements could be either functional or non-functional. Automation feasibility for the testing project is also done in this stage.

**Test Planning** in which test plan is formed. This is the concretization of all phases of the testing itself, timing, participants, and responsibilities. As a result of this, we receive data on:

- the participants and their roles in testing;
- the necessary testing tools;
- the necessary test environment.

**Test Case Development** phase involves the creation, verification, and rework of test cases & test scripts after the test plan is ready. Initially, the Test data is identified then created and reviewed and then reworked based on the preconditions. Then, the QA team starts the development process of test cases for individual units.

**Test Environment Setup** decides the software and hardware conditions under which a work product is tested. It is one of the critical aspects of the testing process and can be done in parallel with the Test Case Development Phase. The test team may not be involved in this activity if the development team provides the test environment. The test team is required to do a readiness check (smoke testing) of the given environment.

**Test Execution** phase is carried out by the testers in which testing of the software build is done based on test plans and test cases prepared. The process consists of test script execution, test script maintenance, and bug reporting. If bugs are reported then it is reverted back to development team for correction and retesting will be performed.

**Test Cycle Closure** phase is completion of test execution which involves several activities like test completion reporting, collection of test completion matrices and test results. Testing team members meet, discuss and analyze testing artifacts to identify strategies that have to be implemented in future, taking lessons from current test cycle. The idea is to remove process bottlenecks for future test cycles.

# Comparison: SDLC & STLC

Now, let's compare the different phases of SDLC and STLC:

Phase	SDLC	STLC
Requirement Gathering / Analysis	<ul style="list-style-type: none"><li>• Project Manager gathers requirements</li><li>• Development team analyzes</li><li>• After high level, the development team starts analyzing from the architecture and the design perspective.</li></ul>	<ul style="list-style-type: none"><li>• Testing team reviews and analyzes the SRD (System Requirements Documents).</li><li>• Identifies the testing requirements - Scope, verification, and validation key points.</li><li>• Reviews the requirements for logical and functional relationships among various modules. This helps in the identification of gaps at an early stage.</li></ul>
Design	<ul style="list-style-type: none"><li>• The architecture of SDLC helps you develop a high-level and low-level design of the software based on the requirements.</li><li>• Business Analyst works on the mockup of UI design</li><li>• Once the design is completed, it is signed off by the stakeholders.</li></ul>	<ul style="list-style-type: none"><li>• In STLC, either a Test Architect or a Test Lead usually plans the test strategy.</li><li>• Identifies the testing points</li><li>• Resource allocation and timelines are finalized here.</li></ul>
Development	<ul style="list-style-type: none"><li>• Development team starts developing the software.</li><li>• Integrate with different systems.</li><li>• Once all integration is done, a ready-to-test software or product is provided.</li></ul>	<ul style="list-style-type: none"><li>• Testing team writes the test scenarios to validate the quality of the product.</li><li>• Detailed test cases are written for all modules along with expected behavior.</li><li>• The prerequisites and the entry and exit criteria of a test</li><li>• Module is identified here.</li></ul>

Environment Set up	<ul style="list-style-type: none"> <li>• Development team sets up a test environment with a developed product to validate.</li> </ul>	<ul style="list-style-type: none"> <li>• The test team confirms the environments set up based on the prerequisites.</li> <li>• Performs smoke testing to make sure the environment is stable for the product to be tested.</li> </ul>
Testing	<ul style="list-style-type: none"> <li>• The actual testing is carried out in this phase. It includes unit testing, integration testing, system testing, defect retesting, regression testing, etc.</li> <li>• The Development team fixes the bug reported if any and sends it back to the tester for retesting.</li> <li>• UAT testing performs here after getting sign-off from SIT testing.</li> </ul>	<ul style="list-style-type: none"> <li>• System Integration testing starts based on the test cases.</li> <li>• Defects reported, if any, get retested and fixed.</li> <li>• Regression testing is performed here and the product is signed off once it meets the exit criteria.</li> </ul>
Deployment / Product Release	<ul style="list-style-type: none"> <li>• Once sign-off is received from various testing teams, the application is deployed in a production environment for real end-users.</li> </ul>	<ul style="list-style-type: none"> <li>• Smoke and sanity testing in a production environment is completed here as soon as the product is deployed.</li> <li>• Test reports and matrix preparation are done by the testing team to analyze the product.</li> </ul>
Maintenance	<ul style="list-style-type: none"> <li>• It covers the post-deployment supports, enhancement, and updates if any.</li> </ul>	<ul style="list-style-type: none"> <li>• In this phase, the maintenance of test cases, regression suits, and automation scripts take place based on the enhancement and updates.</li> </ul>

## Reference Link:

[1] Tutorialspoints: [STLC - Overview](#)