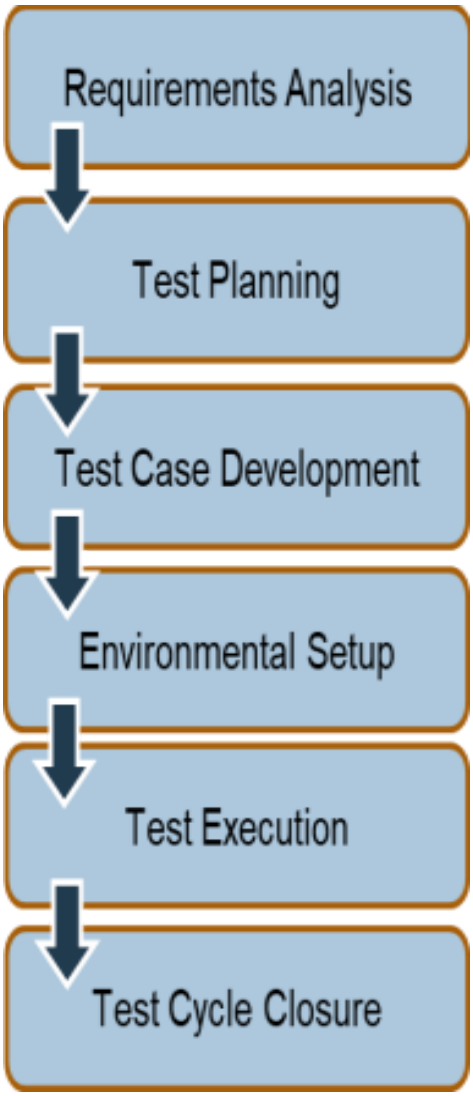
STLC Workbook



Requirements are analyzed to determine how they can be validated.
Functional Requirement Type: define what the software must accomplish
Non-Functional - define availability, capacity, continuity, and security

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Also called the **Test Strategy** phase:

- Preparation of test plan/strategy document for various types of testing.
- Test tool selection.
- Test effort and cost estimation.
- Resource planning and determination of roles and responsibilities.
- Training requirements.

It involves creating, verifying, and reworking test cases and test scripts.
Test data is identified, created, and reviewed, and then may be reworked.
Activities:
Create test cases and automation scripts, review and baseline test cases and scripts, and create test data.

Determines the software/hardware conditions under which a work product is to be tested.
Activities:

- Understand the required architecture and environment setup.
- Prepare hardware and software requirements list for the test environment.
- Set up the test environment and test data.
- Perform a smoke test on the build.

Executing tests as planned, documenting test results, logging defects, mapping defects to test cases in RTM, retesting defect fixes, and tracking defects to closure.

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which a work product is to be tested.
The Test Environment is set up.

Activities:

- Understand the required architecture and environment setup.
- Prepare a list of hardware and software requirements for the test environment.
- Set up the test environment and test data.
- Perform a smoke test on the build.

Entry Criteria	Gives the prerequisite items that must be completed before testing can begin.
Exit Criteria	Defines the items that must be completed before testing can be concluded.

Requirements Analysis

Requirement Types

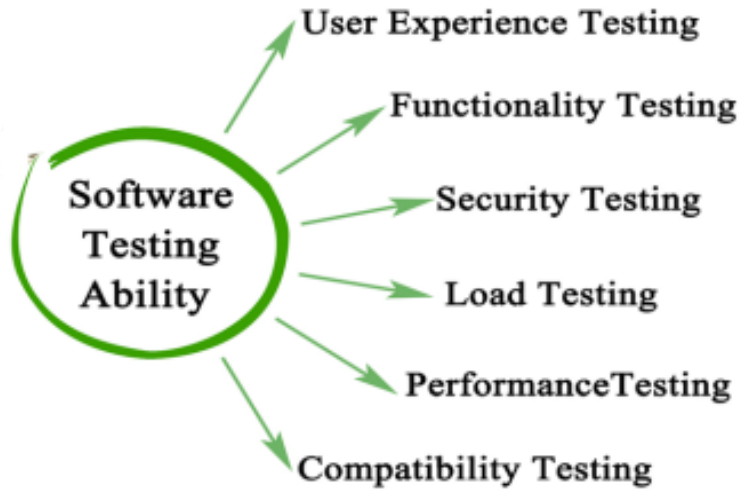
Functional	Define what the software must accomplish
Non-functional	Define availability, capacity, continuity, and security.
Requirements Traceability Matrix (RTM)	The document that provides accountability to project requirements by mapping out the relationship between requirements and project work.

Requirements Analysis Stage Detail

Entry Criteria	Activity	Exit Criteria	Deliverables
Requirements Document available (functional & non-functional) Acceptance Criteria defined Application Architectural document available	- Analyze business functionality to know the business modules and module-specific functionalities. - Identify all transactions in the modules. - Identify all the user profiles. - Gather user interface/authentication and geographic-spread requirements. - Identify types of tests to be performed. - Gather details about testing priorities and focus. - Prepare Requirement Traceability Matrix(RTM). - Identify test environment details where testing is supposed to be carried out. - Automation feasibility analysis (if required).	-Signed-off RTM. -Signed-off test automation feasibility report.	-RTM. -Automation Feasibility report (if applicable). -List of questions with all answers to be resolved from business (e.g., testable requirements).

Test Planning

Types of Testing



Test Planning Stage Detail

Entry Criteria	Activity	Exit Criteria	Deliverables
Requirements document. Requirements Traceability Matrix (RTM). Test automation feasibility report.	- Analyze various approaches available. - Finalize on the best-suited approach. - Prepare test plan/strategy document for various types of testing. - Test tool selection. - Test effort estimation. - Determine resource planning and roles and responsibilities.	Approved Test plan/strategy document. Signed off effort estimation document.	Test plan/strategy document. Effort estimation document.

Test Case Development

Test Case	Create test cases, test design and automation scripts Review and baseline test cases and scripts
Test Data	Identified/created and reviewed, then may be reworked

Test Case Development Stage Detail

Entry Criteria	Activity	Exit Criteria	Deliverables
Requirements Document. RTM and Test Plan. Test automation feasibility report.	- Create test cases, test design, and automation scripts - Review any baseline test cases and scripts - Create test data	- Reviewed and signed test cases/scripts. - Reviewed and signed test data.	- Test cases and scripts. - Test data.

Test Environment Setup

Test Environment	Understand the required architecture, environmental setup. Prepare hardware and software development requirement list Finalize connectivity requirements Prepare environment setup checklist Set up test environment and test Perform smoke test on the build Accept/reject the build depending on smoke test result.
Most important thing about a test environment	Dedicated test environment to ensure that the application/products are reliable and bug free. The most important thing about a test environment is its ability to accurately replicate the production environment while providing a controlled and safe space for testing.

Test Execution Stage Detail

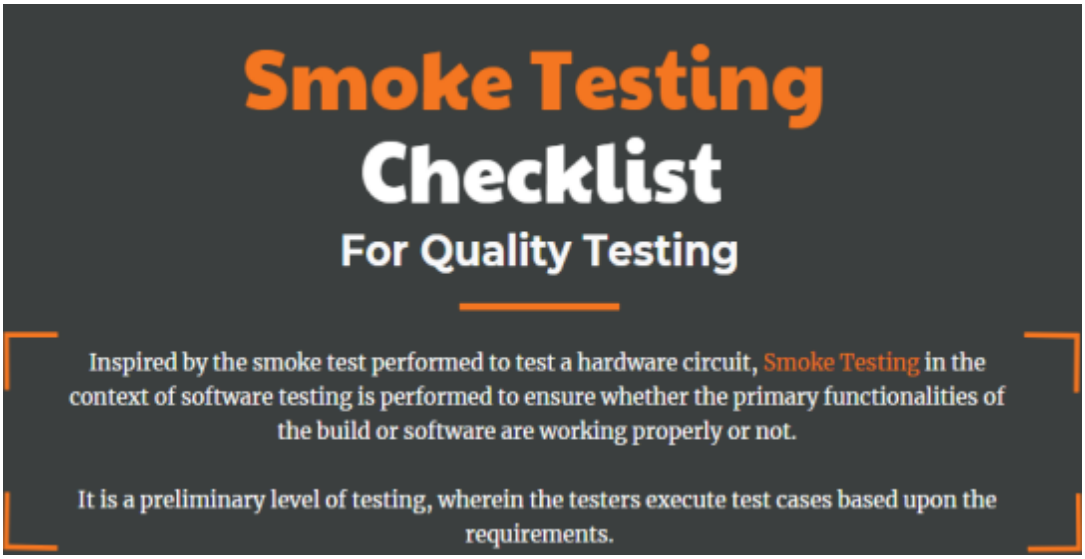
Entry Criteria	Activity	Exit Criteria	Deliverables
- Baselined RTM, Test Plan, and Test case/scripts are available. - Test environment is ready. -Test data setup is done. -Unit/Integration test report for the build to be tested is available.	-Execute tests per plan. -Document test results and log defects for failed cases. -Update test plans/test cases, if necessary. -Map defects to test cases in RTM, and retest the defect fixes. -Regression Testing of the application. -Track the defects to closure.	- All tests planned are executed. - Defects logged and tracked to closure.	- Completed RTM with execution status. - Test cases updated with results. - Defect reports.

Test Execution

Smoke Test	Smoke testing is a software testing process that determines whether or not the deployed software build is stable. (To check if the software is generally working and nothing is immediately wrong.) Aims of Smoke Testing: 1. To detect any early defects in a software product 2. To demonstrate system stability 3. To demonstrate conformance to requirements 4. To assure that the acute functionalities of the program are working properly 5. To measure the stability of the software product by performing testing 6. To test all of the functions of the software product
Regression Testing	Regression testing is a type of software testing, wherein test cases are re-executed to check that the previous functionality of the application is working properly and that the new changes have not produced any bugs.

Test Environment Stage Detail

Entry Criteria	Activity	Exit Criteria	Deliverables
- System design and architecture documents are available. - Environment set-up plan is available.	- Understand the required architecture and environment setup. - Prepare hardware and software development requirement list. - Finalize connectivity requirements. - Prepare environment setup checklist. - Set up the test environment and test data. - Perform a smoke test on the build. - Accept/reject the build depending on the smoke test result.	- Environment setup is working per the plan and checklist. - Test data setup is complete. - Smoke test is successful.	- Environment ready with test data setup. - Smoke test results.



The checklist or the document for Smoke Testing includes the test cases which are executed while performing the test. There is also a **requirement ID** against each test case and a **comment section** that specifies the pass or fail status of the test cases.

The **first step** is to create acceptance and system tests.

Your Checklist

- [ ] Begin the acceptance test creation process by determining the test team for carrying out the tests.
- [ ] Draft a work plan and devise a relevant test approach for the same.
- [ ] Determine whether test scripts meet requirement specifications, which is to be demonstrated to the end user.
- [ ] To keep a track of the activities, create & maintain a test schedule that narrates all the resources to be used in the process.
- [ ] Finally execute the acceptance test.

- [ ] **Once acceptance test is completed, it is time to begin with system testing.**
  - [ ] Identify the tools to be used for smoke testing.
  - [ ] Analyse data requirements.
  - [ ] Create a test approach which will help in achieving the final objective.
  - [ ] Review the existing test material and create a complete list of test items.
  - [ ] Identify and analyse carefully the designs, conditions, processes etc. as well as the various conditions to be used in white-box testing.

- [ ] **The next consecutive step is creation of test cases.**
  - [ ] Group the test cases as per the business functions.
  - [ ] Create test cases based on list of test items.
  - [ ] Review business functions, test cases and data sets and get approval to end the process of test design, from QA or Project leader.

- [ ] **Commence with test preparation by gathering necessary resources.**
  - [ ] Outline the expected results for each test case and assimilate test data and validate the same for respective test cases.
  - [ ] Prepare detailed test scripts for test cases and implement them, while comparing the actual & expected results to find out deviations, if any.
  - [ ] Finally, identify issues and prepare a report.

Test Cycle Closure

Test Cycle Closure Stage Detail

Entry Criteria	Activity	Exit Criteria	Deliverables
Testing has been completed. Test results are available. Defect logs are available	- Evaluate cycle completion criteria based on time, test, cost, software quality, and critical business objectives. - Prepare test metrics based on the above parameters. - Document the learning out of the project. - Prepare test closure report. - Provide a qualitative and quantitative quality report to the customer. - Review test result analysis to find out the defect distribution by type and severity.	N/A	- Test Closure Report.