**Stages of Testing Lifecycle – Quick Introduction**

Introduction:

* Software testing life cycle is a sequence of activities conducted during testing process.
* Each stage has a defined entry and exit criteria.
* Each stage has fixed list of activities and deliverables that should be generated.

Test Cycle closure

Test Closure

Environment Setup

Test Design

Test Planning

Requirement Analysis

1. **Requirement Analysis:**

Definitions: In this first phase, the test team reviews any requirement documents (functional/non-functional) to determine testable requirements and scope of testing. This phase involves interaction with different stakeholders (Client, BA, Developer, Designers).

Activities: Identify types of testing to be done/ identify testing priorities/ identify testing environment/ Prepare Requirement Traceability Matrix (RTM)/ Check feasibility analysis for automation (if needed).

Entry Criteria: Requirement documents (functional/non-functional), Application architecture specs.

Exit Criteria: Signed off (RTM), clear understanding on scope of testing, including automation tests.

Deliverables: RTM, Automation feasibility report (if needed).

1. **Test Planning:**

Definitions: Test planning is the most important phase, as all testing strategy is defined. In this phase, a test manager determines efforts and cost estimates for the entire project. Selection of test tools, resource planning, resources roles & responsibilities etc. are done.

Activities: Finalize test strategy/ prepare a test plan with all details / test tool selection / effort estimation / resource planning.

Entry Criteria: Requirement documents, RTM, Automation feasibility report.

Exit Criteria: Approved test plan.

Deliverables: Test plan.

1. **Test Design (Test case development):**

Definitions: This is the phase where team writes detailed test cases, and they are reviewed for effectiveness. Test data is also prepared for testing.

Activities: Create test cases and automation scripts (if applicable) / review test cases / create test data.

Entry Criteria: Requirement documents, Test plan.

Exit Criteria: Reviewed test cases/scripts ready, test data setup.

Deliverables: Test cases/scripts, Test Data.

1. **Test Environment Setup:**

Definitions: This is the phase where any software or hardware required for testing is configured. Testing team might not be involved in this activity; environments are setup by the system admin and development team. This activity can be done in parallel with test design phase.

Activities: Prepare required hardware and software / setup environment / perform smoke test on build and confirm setup sign-off.

Entry Criteria: System design document available, environment setup plan in test plan.

Exit Criteria: stable environment is setup, smoke test signed-off, test data usable.

Deliverables: Environments, Smoke test results.

1. **Test Execution:**

Definitions: This is the phase where test cases are executed, comparing the expected results to actual results, and marking them as pass/fail/incomplete. For failing scenarios, defects are logged. This is also the phase where continuous test reporting is very important.

Activities: Execute test cases / log defects / regression test / re-test / close defects / report execution results.

Entry Criteria: Test cases are created, test environment is stable, and test data is available.

Exit Criteria: All planned test cases are executed; no blocker or critical defects are open.

Deliverables: Executed test cases, execution report (on frequent basis), Defect report (can be part of execution report).

1. **Test Closure:**

Definitions: This is the final phase, in which testing cycle is evaluated for completion. A retrospective of entire test cycle is done to learn and identify best practices for future..

Activities: Evaluate test cycle on parameters like time, coverage, cost, quality etc./ documents leaning and best practices / prepare test closure report..

Entry Criteria: Testing is completed; test execution and defect reports are available.

Exit Criteria: Test closure report

Deliverables: Test closure report, test metrics.