Name: Gowtham Raja Task: STLC
Date: 27-11-2024

STLC (Software Testing Life Cycle) is a series of steps or phases that define the process of software testing. It provides a structured approach to testing and helps ensure that software is thoroughly tested before it is released.

The STLC phases include planning, designing, executing, and reporting, and they are executed in a sequential order to ensure quality assurance throughout the software development lifecycle.

Here's an explanation of each phase of STLC:

1. Requirement Analysis

Objective: To understand and gather the testing requirements based on the project's business requirements and technical specifications.

Activities:

- The testing team reviews the software requirements, functional specifications, and business requirements documents to identify the scope of testing.
- They determine which features and functionalities need to be tested, and which are out of scope.
- The team also identifies testable requirements and prepares test strategies and plans.

Deliverables:

- Testable requirements
- Risk analysis
- Test Plan

2. Test Planning

Objective: To define the overall testing strategy and establish a detailed plan for the testing process.

Activities:

- A test plan document is created, which outlines the scope, objectives, testing types (functional, performance, security), resources, schedule, and environment requirements.
- The testing team decides on the testing approach, tools, and techniques to be used.
- Test environments, test data requirements, and the roles and responsibilities of team members are defined.

Deliverables:

- Test Plan document
- Test schedule
- Resource allocation plan
- Risk mitigation strategies

3. Test Design

Objective: To design detailed test cases and test scripts based on the requirements and test plan.

Activities:

- Test cases and test scripts are created based on the requirements and use cases.
- Test scenarios are defined, and test data is prepared.
- The test cases are designed to cover all possible situations and edge cases.
- Each test case includes the test steps, expected results, and any necessary test data.

Deliverables:

- Test cases
- Test scripts
- Test data
- Traceability matrix (maps test cases to requirements)

4. Test Environment Setup

Objective: To prepare the test environment, including the hardware, software, and network configurations needed for testing.

Activities:

- Set up the test environment according to the test plan, including configuring hardware, software, and network settings.
- Test environments can be either simulated or replica versions of the production environment.
- Install the application and configure the required databases, servers, and network configurations.

Deliverables:

- Test environment
- Test configurations
- Necessary tools and applications

5. Test Execution & Defect Reporting

Objective: To execute the test cases and test scripts in the test environment. To identify, report, and track defects (bugs) during the testing phase.

Activities:

- The actual testing is performed by executing the test cases on the application.
- Each test case is executed, and the results are logged (pass/fail).
- If any issues are found, bugs or defects are logged in a defect tracking system (e.g., JIRA, Bugzilla).
- The testing team might perform different types of tests, such as functional testing, integration testing, system testing, performance testing, etc.
- When a defect is found during test execution, it is reported and logged in a defect management tool.
- The defect includes details like the steps to reproduce, severity, screenshots, and logs.
- Developers fix the defects, and the testing team retests the fixes to ensure that the issue is resolved.
- The status of defects is tracked, such as whether they are new, in progress, or fixed.

Deliverables:

- Test execution logs
- Defect reports (if any bugs are found)

6. Test Closure

Objective: To formally close the testing phase and evaluate the test process and results.

Activities:

- After the testing is completed, the test team prepares a test summary report.
- The report provides an overview of the testing activities, the number of tests executed, passed/failed tests, defects reported, and the overall test results.
- A final evaluation is done to assess the effectiveness of the testing process.
- Test artifacts, such as test cases, test scripts, and logs, are archived for future reference.
- Lessons learned are documented for continuous improvement.

Deliverables:

Name: Gowtham Raja Task: STLC
Date: 27-11-2024

- Test summary report
- Test closure report

Phase	Objective	Key Deliverables
Requirement Analysis	Gather testing requirements and identify scope	Testable requirements, Test Plan
Test Planning	Define testing approach, schedule, and resources	Test Plan, Resource Allocation
Test Case	Design test cases, scripts, and test data	Test Cases, Test Scripts
Test Environment Setup	Prepare the test environment for execution	Test Environment, Test Configurations
Test Execution & Defect Reporting	Execute test cases, report defects	Test Execution Logs, Defect Reports
Test Closure	Close testing, evaluate results, and document lessons	Test Summary Report, Test Closure Report