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STLC

STLC stands for **Software Testing Life Cycle**. It refers to the structured process followed to carry out software testing in a systematic and organized manner. STLC includes several phases that help ensure the quality and effectiveness of the software being tested.

Here are the typical phases of the STLC:

1. **Requirement Analysis**:
    a. In this phase, the testing team reviews the requirements documents (such as Functional Specifications, Use Cases, and Business Requirements) to understand what needs to be tested.
    b. The goal is to identify the testable requirements and create a test plan accordingly.

Output Documents:

- **Testable Requirements Document**: Identifies which requirements are testable and specifies the conditions for their validation.
- **Requirements Traceability Matrix (RTM)**: A document mapping requirement to test cases to ensure that all requirements are covered by test cases.

2. **Test Planning**:
    a. Based on the requirement analysis, a test strategy is created, which defines the scope, objectives, test environment, resources, schedule, and testing tools.
    b. A **Test Plan** is also created in this phase to outline the overall approach and objectives for testing.

Output Documents:

- **Test Plan**: A comprehensive document that includes details like the scope of testing, objectives, test approach, resources, schedule, and risks.
- **Test Strategy**: A high-level document outlining the testing approach for different types of testing (functional, non-functional, regression, etc.).

- **Risk Analysis Report**: Identifies potential risks in the testing process and suggests mitigation strategies.

3. **Test Case Design**:
   a. Test cases and test scripts are designed based on the requirements and test plan.
   b. The test cases define the conditions under which the application will be tested, as well as the expected results.
   c. In this phase, the test scenarios are created to cover both positive and negative conditions.

Output Documents:

- **Test Cases**: Detailed documents that describe the input, execution steps, expected results, and pass/fail criteria for each test.
- **Test Data**: Sample data used to execute the test cases.
- **Test Case Execution Schedule**: A document that outlines when each test case will be executed.
- **Test Scenarios**: High-level descriptions of the testing conditions to validate the requirements.

4. **Test Environment Setup**:
   a. In this phase, the necessary environment for testing (including hardware, software, network configurations, etc.) is prepared.
   b. It also involves setting up test data, test environments, and configuring necessary tools.

Output Documents:

- **Test Environment Setup Document**: Details the configuration of the test environment, including the setup of test systems, databases, and tools.
- **Test Data Preparation Report**: A document that lists the test data needed for executing test cases, including any preconditions.

5. **Test Execution**:
   a. During this phase, the designed test cases are executed.
   b. The testing team runs the tests and records the results (whether the software behaves as expected or not).

c. Any defects identified during this phase are logged and tracked for resolution.

Output Documents:

- **Test Execution Report**: A document that tracks the execution of test cases, capturing the test results (pass/fail) and any issues encountered.
- **Defect Report**: A detailed report of any defects found during the test execution. It includes information like severity, description, and steps to reproduce.
- **Defect Log**: A record of all defects raised, their current status, and resolution information.

6. **Defect Reporting and Tracking**:
    a. If defects are found during the test execution phase, they are reported to the development team.
    b. The defect is tracked and retested once the developers fix it.

Output Documents:

- **Defect Report**: A comprehensive log of all defects found during testing, including their status, priority, and actions taken.
- **Defect Closure Report**: This document is generated once defects have been fixed and retested, confirming their resolution.
- **Retest Report**: A document that tracks the execution of tests on fixed defects.

7. **Test Closure**:
    a. Once testing is complete and all defects have been resolved or closed, the testing phase concludes.
    b. Test reports and final documentation are prepared, and the testing team analyzes the results to ensure that the software meets the defined requirements.
    c. A **Test Closure Report** is created, summarizing the test activities, findings, and overall test results.

Output Documents:

- **Test Summary Report**: A final document summarizing the entire testing process, including test cases executed, defects found, defect resolution, and overall test results.

- **Test Closure Report**: This document provides an overview of the completed testing cycle, key findings, lessons learned, and suggestions for future testing cycles.
- **Exit Criteria Report**: A document that outlines whether the defined exit criteria for testing (e.g., no critical defects, 95% test case pass rate) have been met.