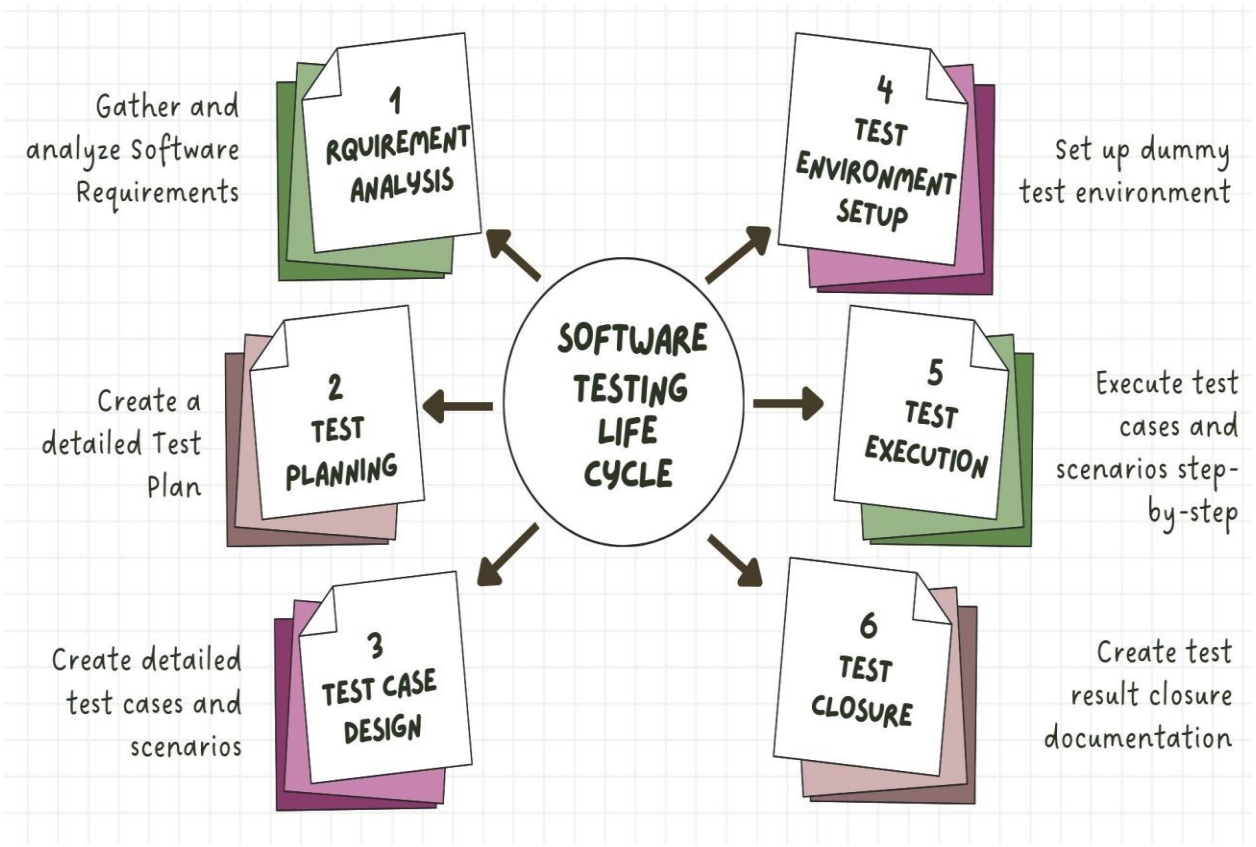
A comprehensive analysis of the Software Testing Life Cycle

The Software Testing Life Cycle (STLC) refers to a sequence of various activities conducted during the process of software testing. STLC helps to meet expected requirements of the client, company or an individual's by focusing on testing all the scenarios and tracing any bug or defects if exists. STLC generates a step-by-step process for ensuring software quality.

Once the development phase is completed, testing team is ready with their test cases and begins the execution. Let's take a look into different phases of the STLC process. In the STLC method, every activity is done through a planned and well-organized manner. The goal of the STLC is to validate that the software meets all the pre-defined requirements with less or no bugs/defects.

First let's start with some visual outlining that serves a curt and quick understanding of STLC process.



Above diagram shows very compressed and rapid process of the STLC. It helps to visually understand the process and different phases of STLC. Now let's dive into details.

1. **Requirement Analysis**
    - This is the first phase of STLC.
    - The Quality Assurance (QA) team interacts with various stakeholders, like business analysts, client, system architects, technical leads etc.. to understand the requirements.
    - Various requirements are analyzed in this phase, which are related to business requirements, product architecture and design related requirements, system and integration related requirements.
2. **Test Planning**
    - In this phase of STLC all the testing strategy determined.
    - This phase is also known as Test Strategy.
    - Test managers create detailed test plan that outline testing objectives, scope, resources, timelines and testing activities.
    - The test plan documentation is also shared with Business Analysts, Project Managers, Dev teams, DBS and anyone associated with project to offer transparency in QA activity.
3. **Test Case Designing**
    - Creating test cases involves translating software requirements in step-by-step guide.
    - Testers create test cases with in-depth steps along with some test data.
    - Test cases need to be clear, transparent and straightforward, so that any user can perform it.
    - Testers can create test cases based on requirements document, Product Backlog Items (PBI), Use Cases and User Stories, User Acceptance Criteria, Design Specification etc.
4. **Test Environment Setup**
    - The testing environment is basically a setup of software, hardware and network to perform test cases.
    - For example if tester is performing Database testing, replica of original data is provided in testing environment.
    - Testing environment helps tester to execute test cases for quality check and bug detections.
5. **Test Execution**
    - Testers execute test cases and scripts to detect defects and try to validate all the pre-defined requirements are fulfilled.
    - Step by step execution occurs during this phase of STLC.
6. **Test Closure**
    - This is the last phase of the STLC, during which final test result report is prepared.
    - This report includes summary of comparison between expected result and actual result.

- This phase includes meeting up testing team members to evaluate based on quality, cost, time, test coverage and software.
- A test closure report supports a standard format like: Test Summary, Test Summary Report, Comprehensiveness Assessment, Identifier, Variances, Summary of Results, Approval, Summary of Activities, and Evaluation.

Conclusion

I keep my words very quick and clear to write this article. I used simple yet understandable description to define whole STLC process. Visual outline helps to attract attention, making the content more accessible and appealing. Simplicity in the language helps everyone with technical or non-technical background.