Quality Assurance in Software Development

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QA Roles in Software Development

Quality Assurance (QA) is an area of production responsible for identifying problems and preventing failures through software testing with goal of delivering a high quality product to the end users that meet the requirements and expectations.

QA in Improving Software Testing

- Execute tests with proper methods and document testing failures.

- Interact with Business Analyst (BA), Project Manager, development team and client as per need.

- Work along with the development team to evaluate or identify issues and suggest recommendations for possible solutions

Test Case

Test case is a document that may contain various parameters (i.e id, condition, steps, input, expected result, result, status and remarks)

Test Case

Examples :

Test Case ID	Test Scenario	Test Steps	Test Data	Expected Result	Actual Result	Pass/Fail
TC_LOGIN_01	User sign in with valid email and invalid password	1. Go to site 2. Enter email 3. Enter password 4. Click on Sign In	Email = wahira.fadzil@gmail.com Password = Dummy123	Alert message will popup and user will not be able to sign in into the application	As expected	Pass

Sign in

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Email or Phone
wahira.fadzil@gmail.com

Password   show

**That's not the right password. Try again or
sign in with a one-time link**

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or

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Test Case

Examples :

Test Case ID	Test Scenario	Test Steps	Test Data	Expected Result	Actual Result	Pass/Fail
TC_LOGIN_02	User sign in with valid email and password	1. Go to site 2. Enter email 3. Enter password 4. Click on Sign In	Email = wahira.fadzil@gmail.com Password = Wahira13	User able to login and the homepage will be prompt	As expected	Pass

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Seeking for a Software Tester Role |
Former Technical Writer

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Test Plan
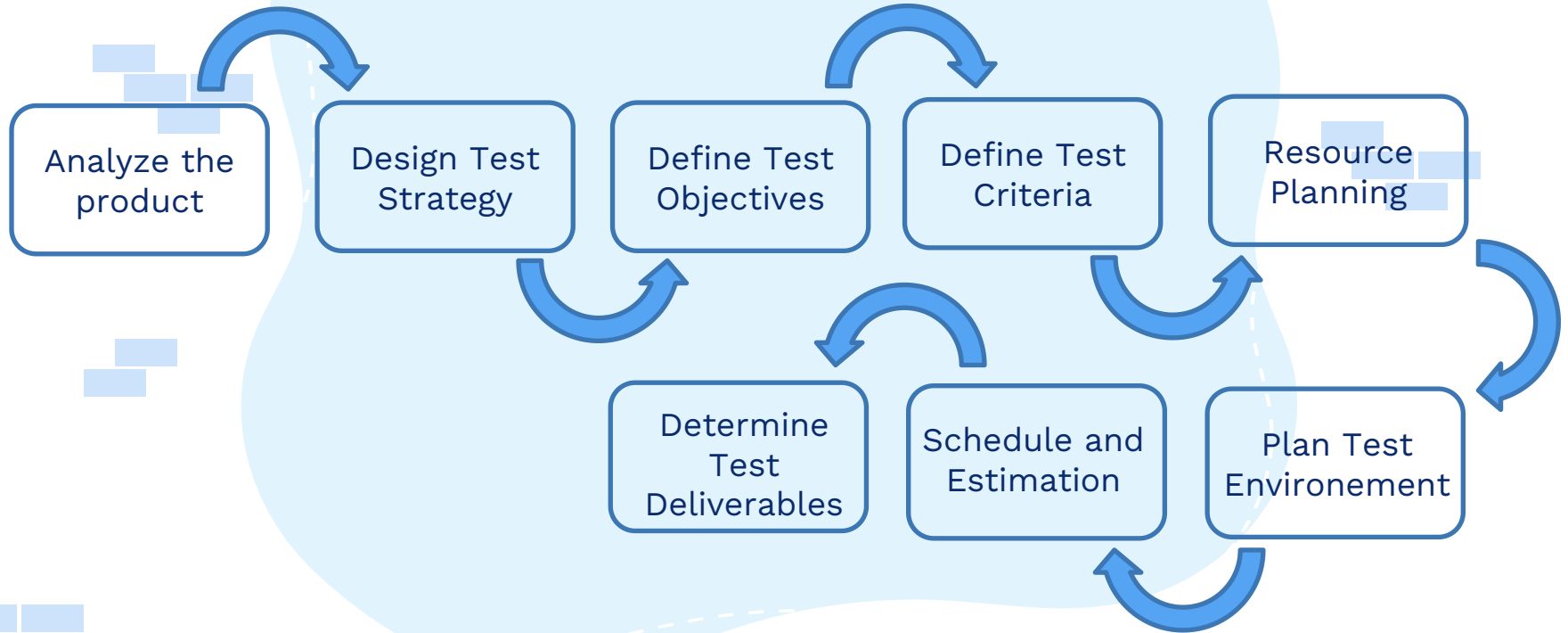
Test Plan is a detailed document that describes the test strategy, objectives, schedule, estimation, deliverables, and resources required to perform testing for a software product.

Test Plan

Analyze the product

Design Test Strategy

Define Test Objectives

Define Test Criteria

Resource Planning

Determine Test Deliverables

Schedule and Estimation

Plan Test Environement

Test Plan

1. Analyze the product
Learn more regarding the product such as who will use the product, main purpose of the product, how the product and the software and hardware specifications.

2. Design Test Strategy
Define on scope of testing, type of testing, risk and issues and test logistics.

3. Define Test Objectives
Define the goals and expected results from the test executed.

Test Plan

4. Define Test Objectives
Refers to standards or rules of governing all activities in testing with two main criteria which are Suspension Criteria and Exit Criteria.

5. Resource Planning
Breakdown of all resources required included human effort, equipments and other infrastructures.

6. Plan Test Environment
Refer to software and hardware setup that should be real devices in real user environment.

Test Plan

7. Schedule and Estimation
Breakdown the project into smaller tasks and allocate time and effort required followed by a schedule to complete the tasks in the designated time.

8. Determine Test Deliverables
Test Deliverables refer to list of documents, tools and other equipment that must be created, provided, and maintained to support testing activities in a project.

Software Testing Life Cycle (STLC)

The Software Testing Life Cycle (STLC) is a sequence of specific actions performed during the testing process to ensure that the software quality objectives are met. The STLC includes both verification and validation.

Software Testing Life Cycle (STLC)
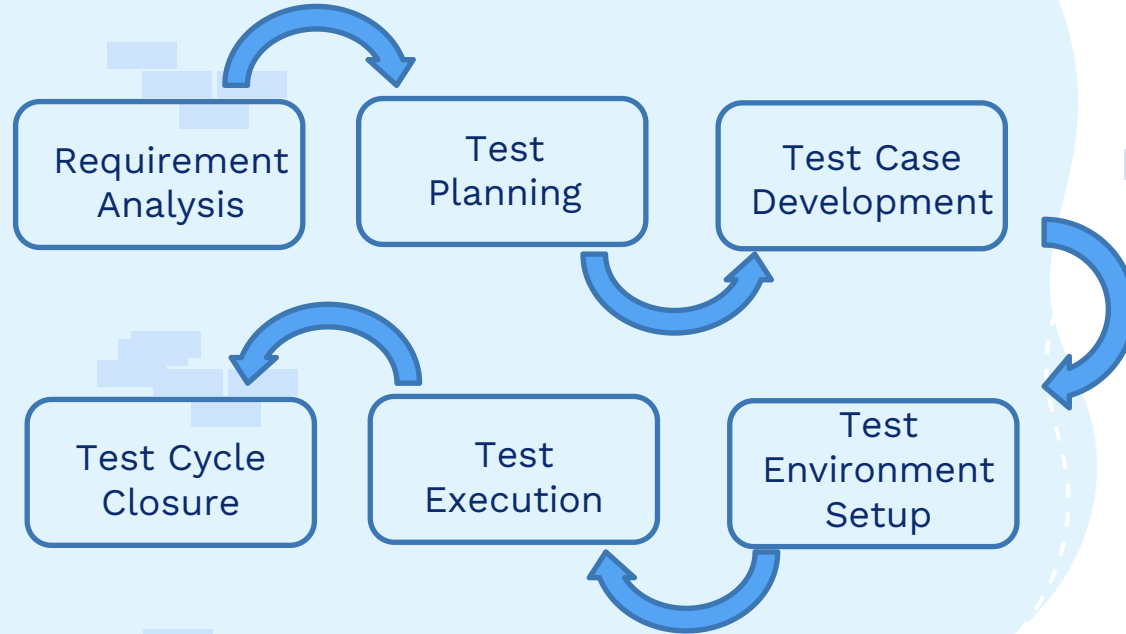
Software Testing Life Cycle (STLC)

1. Requirement Analysis
Identifies the potential need for automated testing and allows making economic calculations of labor costs based on the project estimation.

2. Test Planning
The actualization of all phases of the testing itself, timing, participants, and responsibilities.

3. Test Case Development
Using manual and automated testing to achieve full coverage of the software's functionality and features, with the process being based on the requirements set up beforehand.

Software Testing Life Cycle (STLC)

4. Test Environment Setup
Operating systems and virtual machines are configured, testing tools and the project's test environment and databases are deployed.

5. Test Execution
Tests are performed based on ready-made test documentation and a correctly configured test environment.

6. Test Cycle Closure
Generate testing reports for the client. These should include the time spent, the percentage of defects found to positive test results, the total number of errors found and fixed.

Importance of QA in Organization

QA play a vital role in ensuring the software is efficient, defect-free and meets customers' needs closely. It is extremely important to incorporate QA into the overall software development lifecycle and to weave it into every stage of the process.

Thank You!

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