




STLC

(Software Testing Life Cycle)



Types of Software Applications.???

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- Web applications
 - Windows-based applications
 - Intranet applications



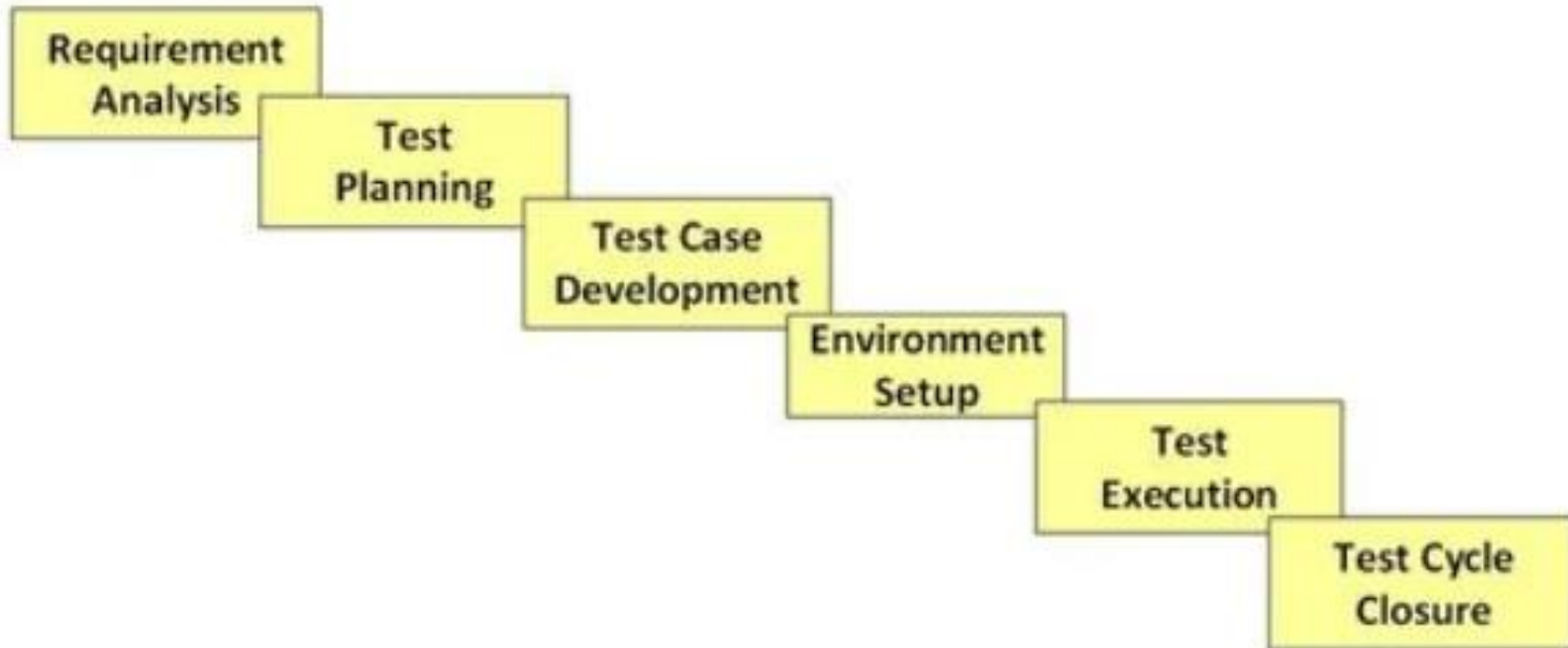
Difference between Development,
test and production
environment.???

STLC

- Sequence of specific activities conducted during the testing process to ensure software quality goals are met.
- STLC involves both verification and validation activities.
- It consists of a series of activities carried out methodologically to help certify your software product.

STLC Phases

There are following six major phases in every Software Testing Life Cycle Model (STLC Model). Each of these stages has a definite Entry and Exit criteria, Activities & Deliverables associated with it.



Entry and Exit Criteria in STLC

Entry Criteria: Entry Criteria gives the prerequisite items that must be completed before testing can begin.

Exit Criteria: Exit Criteria defines the items that must be completed before testing can be concluded

Requirement Phase Testing

- ▶ Identify testable requirements and the QA team may interact with various stakeholders to understand requirements in detail.
- ▶ Requirements could be either functional or non-functional (Functional requirements determine what the system does, non-functional requirements describe HOW the system does).
- ▶ Automation feasibility for the testing project is also done in this stage.

Activities in Requirement Phase Testing

- Identify types of tests to be performed.
- Gather details about testing priorities and focus.
- Prepare Requirement **Traceability Matrix (RTM)**.
- Identify test environment details where testing is supposed to be carried out.
- Automation feasibility analysis (if required).

Deliverables of Requirement Phase Testing

- RTM

- Requirement ID
- Requirement Type and Description
- Test Cases with Status

Req No	Req Desc	Testcase ID	Status
123	Login to the application	TC01,TC02,TC03	TC01-Pass TC02-Pass
345	Ticket Creation	TC04,TC05,TC06, TC07,TC08,TC09 TC010	TC04-Pass TC05-Pass TC06-Pass TC06-Fail TC07-No Run
456	Search Ticket	TC011,TC012, TC013,TC014	TC011-Pass TC012-Fail TC013-Pass TC014-No Run

- Automation feasibility report. (if applicable)

Test Planning in STLC

- ▶ phase in which a Senior QA manager determines the test plan strategy along with efforts and cost estimates for the project.
- ▶ the resources, test environment, test limitations and the testing schedule are also determined.
- ▶ The Test Plan gets prepared and finalized in the same phase.

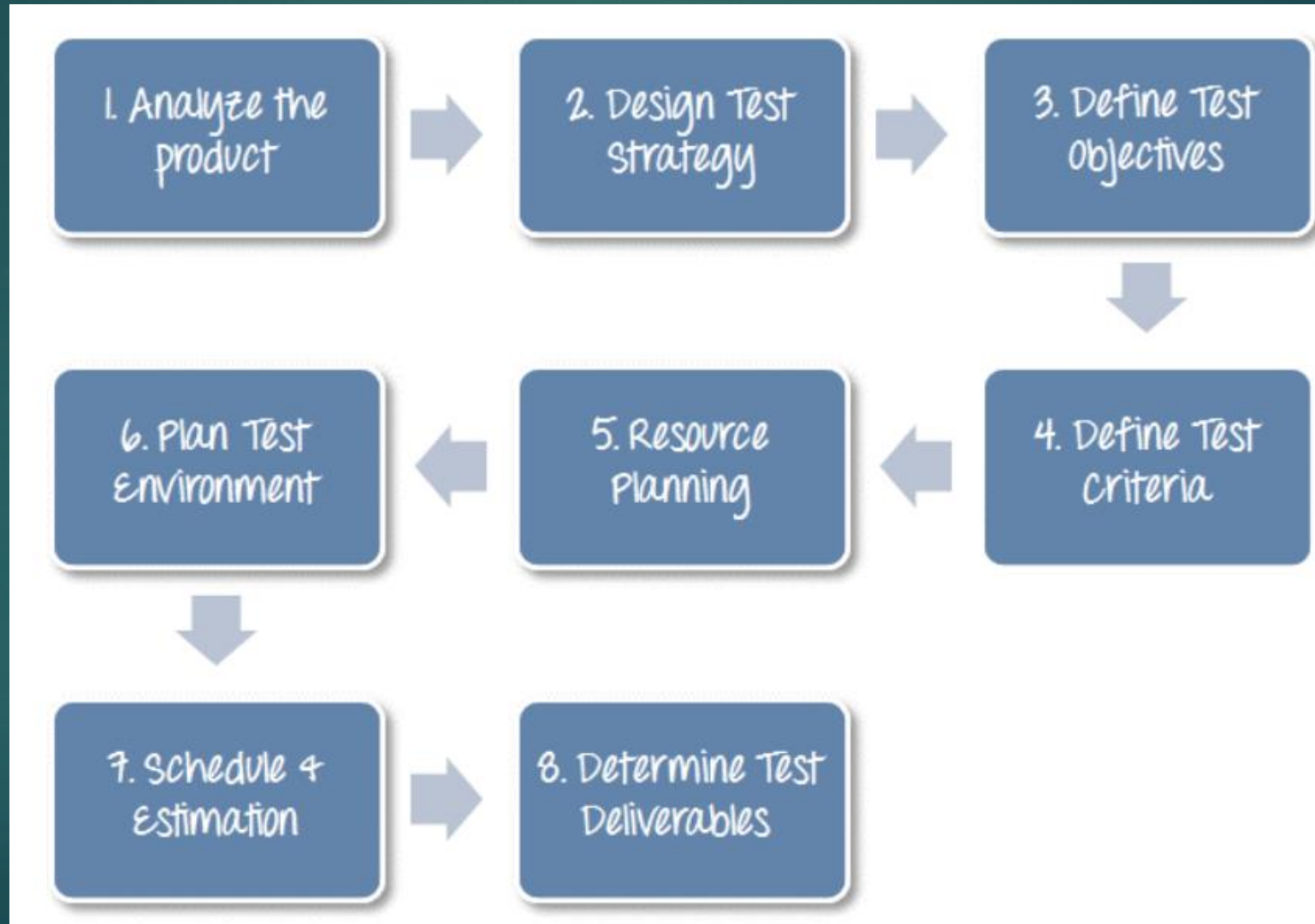
Test Planning Activities

- Preparation of test plan/strategy document for various types of testing
- Test tool selection
- Test effort estimation
- Resource planning and determining roles and responsibilities.
- Training requirement

Deliverables of Test Planning

- Test plan /strategy document.
- Effort estimation document.

Test plan / strategy document



Effort estimation document

How long will this testing take?

How much will it cost?

Test Case Development Phase

- ▶ involves the creation, verification and rework of test cases & test scripts after the test plan is ready.
- ▶ Initially, the Test data is identified then created and reviewed and then reworked based on the preconditions. Then the QA team starts the development process of test cases for individual units.

Test Case Development Activities

- Create test cases, automation scripts (if applicable)
- Review and baseline test cases and scripts
- Create test data (If Test Environment is available)

Deliverables of Test Case Development

- Test cases/scripts
- Test data

Test Environment Setup

- ▶ decides the software and hardware conditions under which a work product is tested.
- ▶ It is one of the critical aspects of the testing process and can be done in parallel with the Test Case Development Phase.
- ▶ Test team may not be involved in this activity if the development team provides the test environment. The test team is required to do a readiness check (smoke testing) of the given environment.

Test Environment Setup Activities

- Understand the required architecture, environment set-up and prepare hardware and software requirement list for the Test Environment.
- Setup test Environment and test data
- Perform smoke test on the build

Deliverables of Test Environment Setup

- Environment ready with test data set up
- Smoke Test Results.

Test Execution Phase

- ▶ carried out by the testers in which testing of the software build is done based on test plans and test cases prepared.
- ▶ The process consists of test script execution, test script maintenance and bug reporting.
- ▶ If bugs are reported then it is reverted back to development team for correction and retesting will be performed.

Test Execution Activities

- Execute tests as per plan
- Document test results, and log defects for failed cases
- Map defects to test cases in RTM
- Retest the Defect fixes
- Track the defects to closure

Deliverables of Test Execution

- Completed RTM with the execution status
- Test cases updated with results
- Defect reports

Test Cycle Closure

- ▶ completion of test execution which involves several activities like test completion reporting, collection of test completion matrices and test results.
- ▶ Testing team members meet, discuss and analyze testing artifacts to identify strategies that have to be implemented in future, taking lessons from current test cycle.
- ▶ The idea is to remove process bottlenecks for future test cycles.

Test Cycle Closure Activities

- Evaluate cycle completion criteria based on Time, Test coverage, Cost, Software, Critical Business Objectives, Quality
- Prepare test metrics based on the above parameters.
- Document the learning out of the project
- Prepare Test closure report
- Qualitative and quantitative reporting of quality of the work product to the customer.
- Test result analysis to find out the defect distribution by type and severity.

Deliverables of Test Cycle Closure

- Test Closure report
- Test metrics