Testing Process (TEP)

1. Introduction

Software Testing Process is a planned activity. It includes various testing activities, such as writing Test Plan, and Test Cases, executing the Test Cases, and test reporting.

The Testing Process ensures comprehensive testing to check the product conformance with the requirements, before its release to the Client.

The Testing Process helps in: -

- Finding out defects in the system.
- Testing the product to reduce future risk.
- Discovering the implementation defects and design limitation
- Demonstrating that the software satisfies the requirements and conforms to the specified non-functional characteristics.

2. Entry Criteria

- Build notification, which is received by the Quality Assurance (QA) Team for the project.

3. Inputs

- Software Test Plan
- Unit Tested Build
- Code to be tested (applicable for white box testing)
- Test Cases
- Test Data (if any)

4. Tasks

Note: All the below-mentioned set of tasks is applicable for all intermediate builds and patches.

Sr. No.	Task	Sub Tasks	Responsibility
1.	**Set up the test Environment**	Set up the test environment as per the requirements mentioned in the Software Test Plan. The test environment should simulate the live environment for the software. ***Note:*** • ***The live environment will be simulated only as per Client requirements. It is clean and distinct from development environment, unless otherwise specified.*** • ***Please refer to Software Test Plan (STP) to understand the Test environment needs.***	QA Team/ QA Lead
	Verification of Test Environment	When there is a change in Test environment (Refer: Software test plan), QA lead needs to check whether the environment setup is correct and maps to the requirement specified in the design.	QA Lead / QA Manager
2.	**Perform validity of build notification**	Verify the build notification mail for the following mail content: • Appropriate build version number as per the Software Project Management Plan, derived from the Build Versioning Guidelines. • Release Notes and Read Me files that reflect the correct information.	QA Lead
		• Reject the build, if the Build Notification Mail does not conform to the above requirements	
3.	**Perform Smoke testing**	If the build is accepted, conduct Smoke testing and prepare **Build Acceptance Report** based on the results obtained from testing.	QA Lead
		After the Smoke testing is complete, reply to the **Build Notification Mail**.	
4.	**Perform defect verification**	Verify the defects when a new build arrives (second iteration onwards).	QA Team

Sr. No.	Task	Sub Tasks	Responsibility
5.	**Execute test cases**	Execute the test cases and prepare the **Test Result.**	QA Team
		Log the defects (including feature enhancements) in the defect-tracking tool.	
6.	**Re-Testing / Regression Testing**	After the reported defects are fixed by the development team, execute the failed test cases (second iteration onwards)	
		Prepare regression test suite based on the RTM	QA Team
		Run the regression test suite after defect fixing, to test if there are any new defects introduced	QA Team
7.	**Close the defects**	Close the defects in the defect tracking system, if they are fixed. Note: If defect is reported by client then the defect should be closed in the defect tracking system after confirmation from client.	QA Team
8.	**Report test results**	At build-level, prepare Test Summary Report to summarize defect-data. Send it to the Project Manager, Project Leader, Project QA Team, and Project Team. Prepare WQSR to share status of QA Activities and share the same with QA Manager and client.	QA Lead
9.	**Conduct Defect Analysis**	• Analyze the Priority and Severity of the logged defects • Identify the defect introduced phase and appropriate sub categories for the selected defects. • Prepare QA Defect log (QAD) for each completed build /deliverable (as required, based on the use of tool for defect logging) ***Note: Frequency of Defect Analysis depends on the build/ Test / Release cycle followed in the project.***	QA Manager / Project Lead Along with QA Lead / QA Team

Sr. No.	Task	Sub Tasks	Responsibility
10.	**Modify the CIs**	In case, the test finding lead to some change in the Test Cases, Software Test Plan, ensure the affected documents or work products are updated.	QA Lead
11.	**Execute Bug Bash (if applicable)**	In the course of the testing, the Team Members of the QA department (other than the Project QA Team) may perform a bug bash of the application under test.	QA Team
		Compile and send the Bug Bash Defect Report to the QA Lead of the project.	QA Team
		Log the appropriate defects in the defect-tracking tool.	QA Lead
10	Monitor QA activities	Monitor and track QA activities as planned. Escalate issues to client as and when required.	QA Manager

5. Verification

The following verification activities are carried out during the process;-

Sr. No.	Roles	Verification Activities
1.	QA Lead	– Verify the Build Notification Mail.
2.	QA Team	– Verify the defects.

6. Exit Criteria

- Test Cases executions in the context of pass / fail criteria is complete.
- Updated appropriate status of identified defects (i.e. Defects with status verified and closed or not a bug)

7. Outputs

- Updated work products, if any
- Build Acceptance Report
- Bug Bash Defect Report (as applicable)
- QA Defect Log (as applicable)
- Test Summary Report
- Updated Test Cases with results

8. Measurements

The various measurements obtained from this process are:

- Number of defects found per feature request/ Requirement.
- Defects per priority
- Defects per Severity
- Test Case Writing Efforts
- Test Case Review Efforts
- Test Execution Efforts
- Client Reported Defects