

# Software Testing Mentor

[www.softwaretestingmentor.com](http://www.softwaretestingmentor.com)

**ISTQB Foundation Level and Software Testing Training**

# **Module 1**

## **Fundamentals of Software Testing**

### **Session 4 – Fundamental Test Process**

# Fundamental Test Process

Fundamental test process starts through the test planning and continues till the test closure

Test planning should consider the time spent on planning and test closure activities

Project and test plans should include time spent on test planning, test designing, preparing for execution and evaluating status.

The idea of a fundamental test process for all levels of test has developed over the years.

Whatever the level of testing, we see the same type of main test activities happening, there may be a different amount of formality at the different levels (Example- Unit tests might be carried out less formally than system tests)

# Steps in Fundamental Test Process

Fundamental test process consists of 5 steps

- Planning and Control
- Analysis and Design
- Implementation and Execution
- Evaluating exit criteria and reporting
- Test Closure Activities

# Test Planning and Control

During  
Test  
planning

- We understand the goals and objectives of the customers, stakeholders, and the project
- Understand the risks which testing is intended to address.
- Set goals and objectives for testing based on goals and objectives of customers, stakeholders and project

# Major tasks of Test Planning

Identify the objectives of testing based on the scope and risks of project

- Decide which components, systems or other products are in the test scope
- Decide the business, product, project and technical risks which need to be addressed
- Decide the objective of testing
  - to uncover defects,
  - to verify that the software meets requirements
  - to demonstrate if software is fit for use

# Major tasks of Test Planning cont.

## Determine the test approach

- How testing will be carried out?
- What test techniques will be used?
- What needs to be tested and what extent of test coverage required?
- Who is involved and when?
- Decide test deliverable's to be produced (Test cases, test data)

## Implement the test policy and/or test strategy

- If the organization test policy and strategy exists then during planning ensure that testing adheres to those policy/ strategy

# Major tasks of Test Planning cont.

Determine the required test resources

- Define the required resources for testing like testers, hardware and software etc.

Scheduling test analysis and design tasks, test implementation, execution and evaluation

- You need to prepare the schedule for all the tasks so that tracking can be done and progress is captured

Determining the exit criteria

- Criteria set to find out when to finish testing. The tasks that must be completed for the test level before we can exit the test phase



# Test Control

After test planning we need to measure and control the progress

Test Control is the ongoing activity of comparing actual progress against the plan

Test control reports the status of test progress including any deviations from the actual plan

Test control monitors the testing throughout the project

# The major tasks of test control

Measure and analyze results of reviews and testing

- Track test pass/fail percentage
- Track tests remaining

Monitor and document test progress, coverage and exit criteria

- Track how many tests executed
- What is the testing outcome(Number of tests passed/failed)
- Risk assessment of test outcome

# The major tasks of test control cont.

## Provide information on testing

- Provide regular test progress reports to stakeholders

## Initiate corrective actions

- Putting more efforts in debugging
- Prioritizing defects

## Make release decisions

- Based on information gathered during testing decision are made – Like to continue testing, stop testing, release software or not to release.

# Test Analysis and Design

During Test Analysis and Design we build test designs and test procedures (Scripts) The major tasks of test analysis and design are:

## Reviewing the test basis

- Review software requirements specification (SRS) document, design document
- Start designing black box tests using test basis
- This identifies gaps and ambiguities in specifications and prevents defects

## Identifying the test conditions

- Based on the analysis of test items and specifications prepare the test conditions

# Test Analysis and Design cont.

## Designing the tests

- Apply test design techniques to design your tests

## Evaluate testability of the requirements and system

- Make sure that all the requirements are testable

## Design the test environment

- Hardware and software required to test
- Any supporting tools like test management tools etc.

# Test Implementation and Execution

Take test conditions and make them into test cases

Build test environment where test execution needs to be done

# Test Implementation and Execution cont.

Test implementation & execution have the following major tasks

## Test Implementation

- Develop test cases and prioritise them
- Apply test design techniques to develop test cases
- Prioritize test cases based on the risk assessment
- Create test suites (Logical collection of tests)
- Prepare test environment

## Test execution

- Execute test cases
- Record the test execution outcome with details like environment, software version
- Compare actual with expected result (Report incident – Incident is then analysed and bug is logged if its an actual defect)
- Perform re-test after defect is fixed to ensure that defect is corrected after fix

# Evaluating Exit Criteria and Reporting

Exit Criteria evaluation is an activity where test execution is assessed against the defined objectives.

This should be done for each test level.

Exit criteria is set based on risk assessment for each level and exit criteria evaluation ensures that we have done enough testing to exit testing or test level



# Major tasks in Evaluating Exit Criteria

Check test logs against the exit criteria specified in test plan

- Check the test execution percentage
- Check the defect raised/fixed/outstanding

Assess if more tests are needed or if the exit criteria specified should be changed

- Based on exit criteria make assessment if more tests are required to fulfill exit criteria
- Still some defects pending to be fixed
- Project risks increased and so need to change exit criteria by consulting stakeholders

Writing a test summary report for stakeholders

- Preparing the test summary report and distributing with all stakeholders
- Helps stakeholders make the release decisions about software

# Test Closure Activities

Collect data from completed test activities to consolidate experience, major tasks in test closure activities are:

Check which planned deliverables have been delivered

- Test strategy/plans, test cases etc.
- All incident reports have been resolved(Fixed/deferred)

Finalise and archive testware for later use

- Test cases/scripts
- Test environment
- Any other test infrastructure

# Test Closure Activities cont.

Handover testware to the maintenance organisation

- After software release maintenance phase will start
- Maintenance organization can be a different organization other than one who developed software
- They will need the testware for maintenance changes or any bugs fixes in production environment

Evaluate the testing and analyze lessons learned for future releases and projects

- Helps to improve the whole SDLC and test process
- Improve test design and execution methodologies for reducing invalid defects

# Conclusion

To conclude, in this session we learned about fundamental test process and all the steps involved in the test process.

- Planning and Control
- Analysis and Design
- Implementation and Execution
- Evaluating exit criteria and reporting
- Test Closure Activities

**THANK YOU!!!**