

FUNDAMENTAL TEST PROCESS IN SOFTWARE TESTING

TEST PROCESS IN SOFTWARE TESTING

- **Single activity.**
- **Planned and it requires discipline to act upon it.**
- **The quality and effectiveness of software testing are primarily determined by the quality of the test processes used.**

- **PLANNING AND CONTROL**
- **ANALYSIS AND DESIGN**
- **IMPLEMENTATION AND EXECUTION**
- **EVALUATING EXIT CRITERIA AND REPORTING**
- **TEST CLOSURE ACTIVITIES**

PLANNING AND CONTROL

TEST PLANNING HAS FOLLOWING MAJOR TASKS:

- TO DETERMINE THE SCOPE, RISKS AND IDENTIFY THE **OBJECTIVES OF TESTING.**
- TO DETERMINE THE **TEST APPROACH.**
- TO **IMPLEMENT THE TEST POLICY** AND/OR THE TEST STRATEGY.
- TO DETERMINE THE REQUIRED **TEST RESOURCES** LIKE PEOPLE, TEST ENVIRONMENTS, PCS, ETC.
- TO **SCHEDULE** TEST ANALYSIS AND DESIGN TASKS, TEST IMPLEMENTATION, EXECUTION AND EVALUATION.
- TO DETERMINE THE **EXIT CRITERIA** WE NEED TO SET CRITERIA SUCH AS COVERAGE CRITERIA.

PLANNING AND CONTROL (CONTD.,)

TEST CONTROL HAS THE FOLLOWING MAJOR TASKS

- TO MEASURE AND **ANALYZE THE RESULTS OF REVIEWS AND TESTING.**
- TO **MONITOR AND DOCUMENT** PROGRESS, TEST COVERAGE AND EXIT CRITERIA.
- TO PROVIDE **INFORMATION ON TESTING.**
- TO **INITIATE** CORRECTIVE ACTIONS.
- TO MAKE **DECISIONS.**

ANALYSIS AND DESIGN

TEST ANALYSIS AND TEST DESIGN HAS THE FOLLOWING MAJOR TASKS:

- **TO REVIEW THE TEST BASIS.**
- **TO IDENTIFY TEST CONDITIONS.**
- **TO DESIGN THE TESTS.**
- **TO EVALUATE TESTABILITY OF THE REQUIREMENTS AND SYSTEM.**
- **TO DESIGN THE TEST ENVIRONMENT SET-UP AND IDENTIFY AND REQUIRED INFRASTRUCTURE AND TOOLS.**

IMPLEMENTATION AND EXECUTION

DURING TEST IMPLEMENTATION AND EXECUTION, WE TAKE THE TEST CONDITIONS INTO TEST CASES AND PROCEDURES AND OTHER TEST WARE SUCH AS SCRIPTS FOR AUTOMATION, THE TEST ENVIRONMENT AND ANY OTHER TEST INFRASTRUCTURE.

IMPLEMENTATION AND EXECUTION (CONTD.,)

TEST IMPLEMENTATION HAS THE FOLLOWING MAJOR TASK:

- **TO DEVELOP AND PRIORITIZE** TEST CASES BY USING TECHNIQUES AND CREATE TEST DATA FOR THOSE TESTS.
 - **WRITE SOME INSTRUCTIONS** FOR CARRYING OUT THE TESTS WHICH IS KNOWN AS TEST PROCEDURES.
 - **NEED TO AUTOMATE** SOME TESTS USING TEST HARNESS AND AUTOMATED TESTS SCRIPTS.
- **TO CREATE TEST SUITES** FROM THE TEST CASES FOR EFFICIENT TEST EXECUTION.
- **TO IMPLEMENT AND VERIFY** THE ENVIRONMENT.

IMPLEMENTATION AND EXECUTION (CONTD.,)

TEST EXECUTION HAS THE FOLLOWING MAJOR TASK:

- TO **EXECUTE** TEST SUITES AND INDIVIDUAL TEST CASES FOLLOWING THE TEST PROCEDURES.
- TO **RE-EXECUTE** THE TESTS THAT PREVIOUSLY FAILED IN ORDER TO CONFIRM A FIX. THIS IS KNOWN AS CONFIRMATION TESTING OR RE-TESTING.
- TO **LOG THE OUTCOME** OF THE TEST EXECUTION AND RECORD THE IDENTITIES AND VERSIONS OF THE SOFTWARE UNDER TESTS. THE TEST LOG IS USED FOR THE AUDIT TRIAL.
- TO **COMPARE** ACTUAL RESULTS WITH EXPECTED RESULTS.
- WHERE THERE ARE DIFFERENCES BETWEEN ACTUAL AND EXPECTED RESULTS, IT **REPORT DISCREPANCIES** AS INCIDENTS.

EVALUATING EXIT CRITERIA AND REPORTING

- **BASED ON THE RISK ASSESSMENT OF THE PROJECT WE WILL SET THE CRITERIA FOR EACH TEST LEVEL AGAINST WHICH WE WILL MEASURE THE “ENOUGH TESTING”. THESE CRITERIA VARY FROM PROJECT TO PROJECT AND ARE KNOWN AS EXIT CRITERIA.**
- **EXIT CRITERIA COME INTO PICTURE, WHEN:**
 - **MAXIMUM TEST CASES ARE EXECUTED WITH CERTAIN PASS PERCENTAGE.**
 - **BUG RATE FALLS BELOW CERTAIN LEVEL.**
 - **WHEN ACHIEVED THE DEADLINES.**

EVALUATING EXIT CRITERIA AND REPORTING (CONTD.,)

EVALUATING EXIT CRITERIA HAS THE FOLLOWING MAJOR TASKS:

- ▣ **TO CHECK THE TEST LOGS AGAINST THE EXIT CRITERIA SPECIFIED IN TEST PLANNING.**
- ▣ **TO ASSESS IF MORE TEST ARE NEEDED OR IF THE EXIT CRITERIA SPECIFIED SHOULD BE CHANGED.**
- ▣ **TO WRITE A TEST SUMMARY REPORT FOR STAKEHOLDERS**

TEST CLOSURE ACTIVITIES

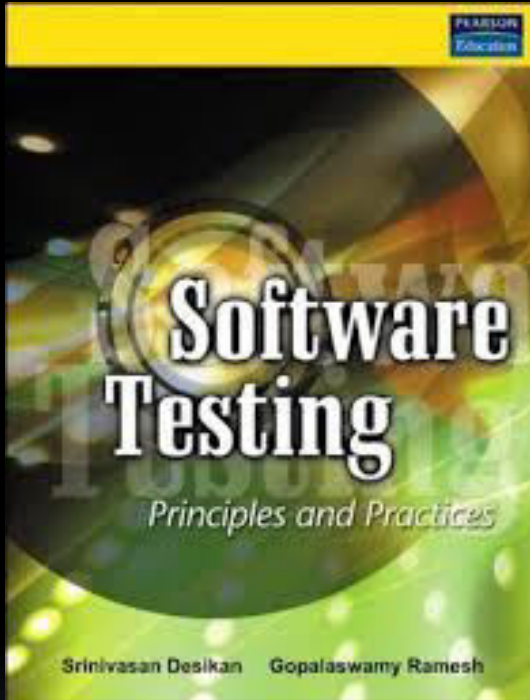
- **TEST CLOSURE ACTIVITIES ARE DONE WHEN SOFTWARE IS DELIVERED. THE TESTING CAN BE CLOSED FOR THE OTHER REASONS ALSO LIKE:**
 - **WHEN ALL THE INFORMATION HAS BEEN GATHERED WHICH ARE NEEDED FOR THE TESTING.**
 - **WHEN A PROJECT IS CANCELLED.**
 - **WHEN SOME TARGET IS ACHIEVED.**
 - **WHEN A MAINTENANCE RELEASE OR UPDATE IS DONE.**

TEST CLOSURE ACTIVITIES (CONTD.,)

TEST CLOSURE ACTIVITIES HAVE THE FOLLOWING MAJOR TASKS:

- TO CHECK WHICH **PLANNED DELIVERABLES ARE ACTUALLY DELIVERED** AND TO ENSURE THAT ALL INCIDENT REPORTS HAVE BEEN RESOLVED.
- TO **FINALIZE AND ARCHIVE TESTWARE** SUCH AS SCRIPTS, TEST ENVIRONMENTS, ETC. FOR LATER REUSE.
- TO **HANDOVER THE TESTWARE** TO THE MAINTENANCE ORGANIZATION. THEY WILL GIVE SUPPORT TO THE SOFTWARE.
- TO **EVALUATE HOW THE TESTING** WENT AND LEARN LESSONS FOR FUTURE RELEASES AND PROJECTS

REFERENCES



GURU99

DG

edureka!

Software Testing Help