

Test Management Phases

① Test Planning

→ Risk Analysis :- Risk is the potential loss resulting from a given action or an activity.

→ Since all projects may contain risks, early risk detection & identification of its cost will help test manager to avoid potential loss in future & save on proj. cost.

→ Test Estimation :- Approximately defining task complete time.

Benefits:- Accurate test estimation leads to better planning, execution & monitoring of tasks.

→ Allows for more accurate scheduling & helps to realise results more confidently.

→ Test Planning :- A test plan gives detailed info. regarding:-

- Test Strategy
- Test Objective
- Exit / Suspension Criteria
- Resource Planning
- Test Deliverables

→ Test Organization :- procedure of defining roles in the testing process.

→ It defines who is responsible for which activities in the testing process.

② Test Management :- Its a process of managing the testing activities in order to ensure high quality & high-end testing of the s/w app.

→ The method consists of organizing, controlling, ensuring traceability & visibility of the testing process in order to deliver the high quality s/w app.

③ Test Execution

→ Monitoring :- process of collecting, recording, & reporting info. about proj. activity.

→ Controlling :- process of using data from monitoring activity to bring actual performance to planned performance.

→ Issue Management :- When risk happens it becomes a issue.

Common issues:- Missing deadline
Exceed Proj. budget
Lose customer trust.

Issue Mgmt - is the process to make aware of the prob & then resolve it as fast as possible.

→ Test Report & Evaluation:-

"Test Evaluation" report describes the results of the testing in terms of Test coverage & exit criteria.

- (4) Test Reporting → Gives user ability to evaluate testing efforts & communicate test results to other interested
→ Objective is to determine the current status for proj. testing, & also provide details about the overall quality of the app or system.

Software Test Automation

- It's a technique where tester writes scripts on their own & uses suitable s/w or automaⁿ tool to test the s/w.
- It's an Automataⁿ process of a manual process.
- Allows for executing repetitive tasks without intervention of Manual Tester.

Scope of automaⁿ testing-

- Improved test automation frameworks
- Increased use of AI ML in test automation
- Greater integration
- More widespread use of test automation in the cloud.
- Greater use of open source test automation tools.
- Trend focus of usability testing
- Trend use of virtual & augmented reality in testing
- Trend use of automaⁿ testing in IOT.
- _____ in Mobile & Web Apps.

Types of Smoke
1. Unit
2. Integration
3. Regression

Advantages

- faster
- reliable
- consistent
- save time & cost
- improve accuracy
- use efficiency
- reusable script

Test Management Phase:-

① Test Planning

Design & Architecture of Automate Testing :-

It depends on the specific needs & goals of the s/w development proj. However, there are some basic elements which are included in the D&A of AT :-

| Test Automation framework | → set of guidelines & stds. that define how automation tools should be designed & executed.

| Test Case Repository | → central locaⁿ where testcases are stored & managed. details of steps, i/p data & expected op for each testcase.

| Test execution engine | → component that is responsible for running testcases & collecting results.
→ parallel execuⁿ for faster testing.

| Test Data Mgmt. | → create, store & manage test data & controls access.

| Reporting & Analysis | → generating reports on test coverage, test case status, & the no. of defects found.

| Integration with Other tools | → Automate testing system should integrate with other tools like - issue tracking system, build & deployment tools, & performance monitoring tools.

Requirement for test tools :- Tool is an artifact that assists in test-related activities. Necessary requirements are :-

- No hardcoding in test suite :- Data should not be embedded in code.
- Test case extensibility :-
- reuse of code for different testing.
- Automatic setup & cleanup.
- Independent test cases.
- Selective execuⁿ of cases :- tools should support this from large test suite.
- Random execuⁿ.
- Parallel execuⁿ of cases.
- Independent of programming language.

Test Tool Selection:- In order to succeed in automation, proper tool selection is imp. bcoz:-

- all tools are not well supported for diff. problems.
- tools are expensive.
- Not all test tools run on all platforms.
- Test tools require strong training.

Criteria for selecting & meeting requirements:-

- Technology expectations.
- Training
- Management aspects.

Object Oriented Testing:-

Testing class is fundamentally different prob than testing f'n. A f'n has defined i/p & o/p, but a class doesn't have.

Focus in testing class:-

- Additional methods are required for testing
- Only objects can be tested
- Inheritance leads to various issues
- Control flow is characterised by message passing among objects
- Lack of sequential control flow within class