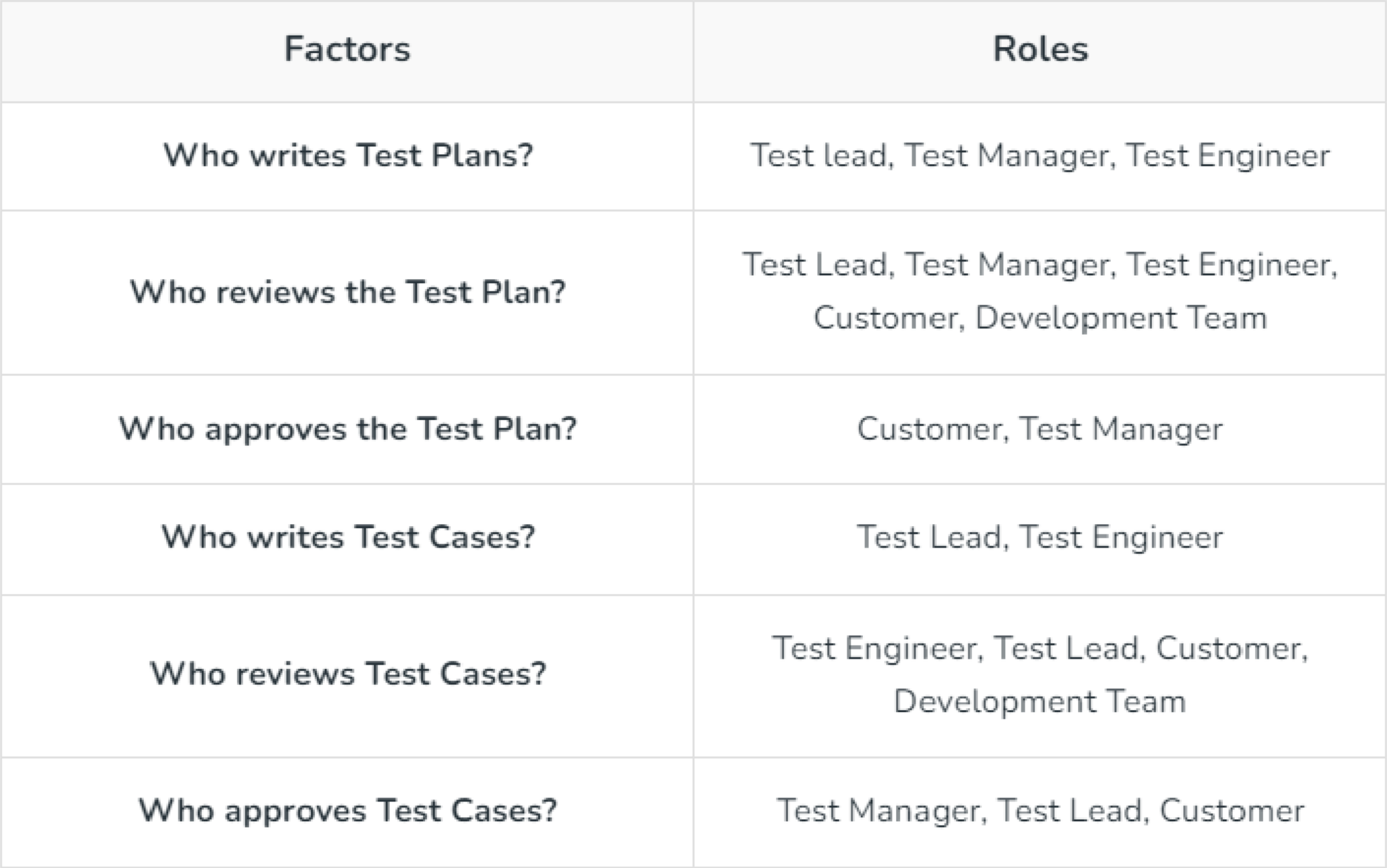
Test plan

- A test plan is a document that consists of all future testing-related activities.
- It is prepared at the project level and in general, it defines work products to be tested, how they will be tested, and test type distribution among the testers.
- Before starting testing there will be a test manager who will be preparing a test plan.
- In any company whenever a new project is taken up before the tester is involved in the testing the test manager of the team would prepare a test Plan.
- The test plan serves as the blueprint that changes according to the progressions in the project and stays current at all times.
- It serves as a base for conducting testing activities and coordinating activities among a QA team.
- It is shared with Business Analysts, Project Managers, and anyone

Test plan

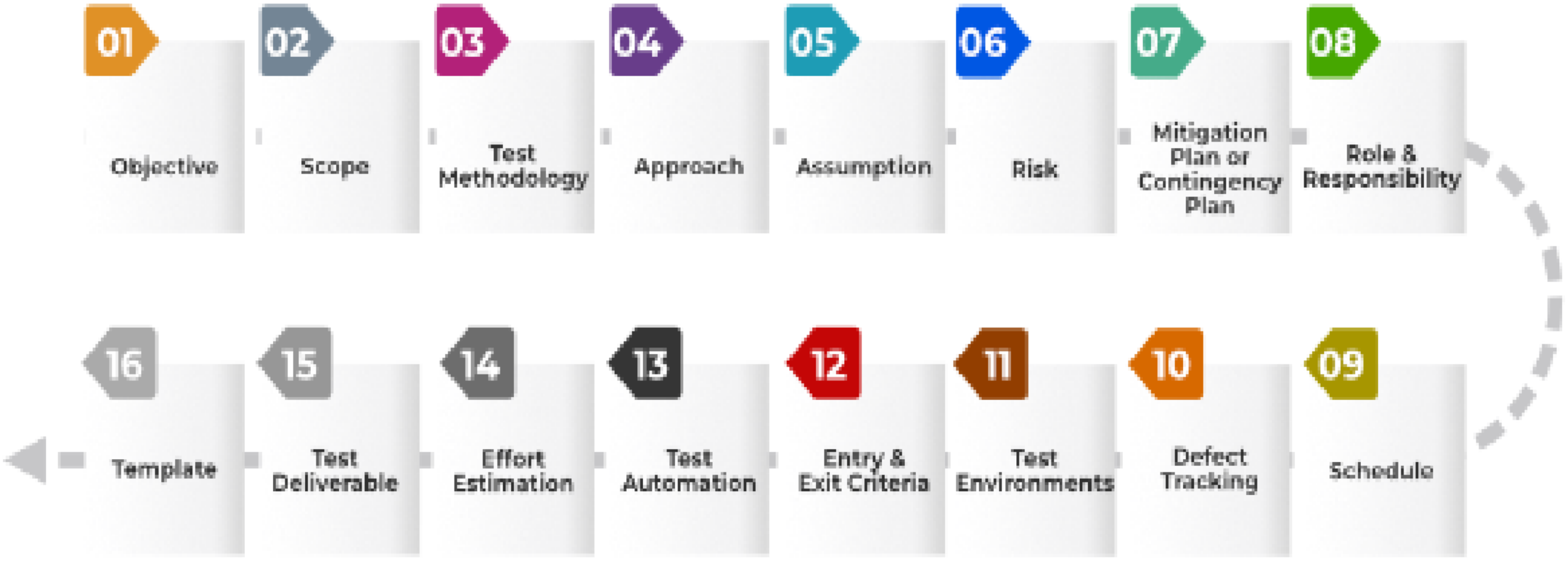


Factors	Roles
Who writes Test Plans?	Test lead, Test Manager, Test Engineer
Who reviews the Test Plan?	Test Lead, Test Manager, Test Engineer, Customer, Development Team
Who approves the Test Plan?	Customer, Test Manager
Who writes Test Cases?	Test Lead, Test Engineer
Who reviews Test Cases?	Test Engineer, Test Lead, Customer, Development Team
Who approves Test Cases?	Test Manager, Test Lead, Customer

Objectives of the Test Plan:

- **Overview of testing activities:** The test plan provides an overview of the testing activities and where to start and stop the work.
- **Provides timeline:** The test plan helps to create the timeline for the testing activities based on the number of hours and the workers needed.
- **Helps to estimate resources:** The test plan helps to create an estimate of the number of resources needed to finish the work.
- **Serves as a blueprint:** The test plan serves as a blueprint for all the testing activities, it has every detail from beginning to end.
- **Helps to identify solutions:** A test plan helps the team

Components and Attributes of Test Plan:



01 Objective

02 Scope

03 Test Methodology

04 Approach

05 Assumption

06 Risk

07 Mitigation Plan or Contingency Plan

08 Role & Responsibility

09 Schedule

10 Defect Tracking

11 Test Environments

12 Entry & Exit Criteria

13 Test Automation

14 Effort Estimation

15 Test Deliverable

16 Template

Components and Attributes of Test Plan:

Objective: It describes the aim of the test plan, whatever the good process and procedure they are going to follow to give quality software to customers. The overall objective of the test is to find as many defects as possible and to make software bug-free. The test objective must be broken into components and sub-components. In every component following activities should be performed.

Scope: It consists of information that needs to be tested concerning an application. The scope can be divided into two parts:

- **In-Scope:** The modules that are to be tested rigorously.

Components and Attributes of Test Plan:

Testing Methodology: The methods that are going to be used for testing depend on application to application. The testing methodology is decided based on the feature and application requirements. Since the testing terms are not standard, one should define what kind of testing will be used in the testing methodology. So that everyone can understand it.

Approach: The approach of testing different software is different. It deals with the flow of applications for future reference.

Assumption: In this phase, certain assumptions will be made.

Example:

- The testing team will get proper support from the development team.
- The tester will get proper knowledge transfer from the development team.
- Proper resource allocation will be given by the company to the

Components and Attributes of Test Plan:

Risk: All the risks that can happen if the assumption is broken. For Example, in the case of wrong budget estimation, the cost may overrun. Some reason that may lead to risk is:

- Test Manager has poor management skills.
- Hard to complete the project on time.
- Lack of cooperation.

Mitigation Plan: If any risk is involved then the company must have a backup plan, the purpose is to avoid errors. Some points to resolve/avoid risk:

- Test priority is to be set for each test activity.
- Managers should have leadership skills.
- Training course for the testers.

Components and Attributes of Test Plan:

Roles and Responsibilities: All the responsibilities and role of every member of a particular testing team has to be recorded.

Schedule: Under this, it will record the start and end date of every testing-related activity. For Example, writing the test case date and ending the test case date.

Defect Tracking: It is an important process in software engineering as lots of issue arises when you develop a critical system for business. If there is any defect found while testing that defect must be given to the developer team.

Test Environments: It is the environment that the testing team will use i.e. the list of hardware and software, while testing the application, the things that are said to be tested will be written under this section. The installation of

Components and Attributes of Test Plan:

Entry and Exit Criteria: The set of conditions that should be met to start any new type of testing or to end any kind of testing.

Test Automation: It consists of the features that are to be automated and which features are not to be automated.

- If the feature has lots of bugs then it is categorized as Manual Testing.
- If the feature is frequently tested then it can be automated.

Effort Estimation: This involves planning the effort that needs to be applied by every team member.

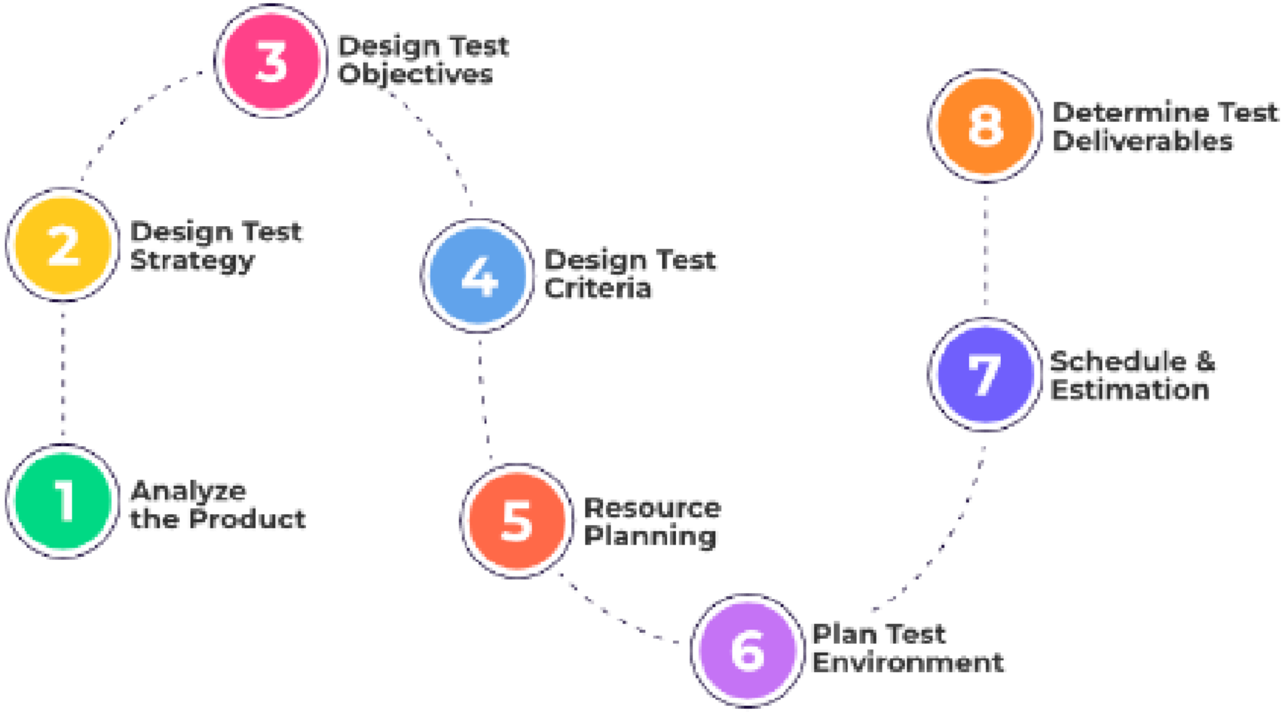
Test Deliverables: It is the outcome from the testing team that is to be given to the customers at the end of the project.

Template: This is followed by every kind of report that is going to be prepared by the

Types of Test Plans

- **Master Test Plan:** In this type of test plan, includes multiple test strategies and has multiple levels of testing. It goes into great depth on the planning and management of testing at the various test levels and thus provides a bird’s eye view of the important decisions made, tactics used, etc. It includes a list of tests that must be executed, test coverage, the connection between various test levels, etc.
- **Phase Test Plan:** In this type of test plan, emphasis is on any one phase of testing. It includes further information on the levels listed in the master testing plan. Information like testing schedules, benchmarks, activities, templates, and other information that is not included in the master test plan is included in the phase test plan.
- **Specific Test Plan:** This type of test plan, is designed for specific types of testing especially non-functional testing for

How to create a Test Plan



1 Analyze the Product

2 Design Test Strategy

3 Design Test Objectives

4 Design Test Criteria

5 Resource Planning

6 Plan Test Environment

7 Schedule & Estimation

8 Determine Test Deliverables

Test Execution

- Test execution is a process of executing the test cases on the application to determine its functional and non-functional parameters with respect to the requirements.
- Test execution is often preceded by **test planning** and test analysis.
- Test execution is useful in these cases:

1. Validating the software requirements to ensure that the system functions as intended.
2. Identifying and reporting defects or issues in the software by comparing actual results with expected results.
3. Verifying that each component, module, or feature of the software performs as per the design and functional specifications.
4. Confirming that new changes or enhancements to the software do not negatively impact existing functionality.
5. Validating the software documentation

Stages of Test Execution

Test execution has three stages:

1. **Planning and Preparation**

The planning and preparation phase consists of:

- Define test objectives
- Define test strategy
- Identify test deliverables
- Perform resource planning and risk analysis
- Set up a testing environment
- Define test metrics
- Do proper resource planning, including providing information and a budget for using automation testing tools

Stages of Test Execution

2. **Execution**

The next step after preparation is to start the execution. In this stage, testers will create and run test cases (manually or automatically) to compare the actual test results against the specification requirements. It also includes marking the test cases as pass or fail, reporting the bugs, logging the same into the testing system, and monitoring after the issue is fixed.

3. Evaluation

During the evaluation stage, testers look at the test deliverables and the exit criteria to see if they are being met. A proper evaluation helps to ensure that all the test cases are executed, the defects are logged, and closures

Test Reporting

- Test reporting is a process in software testing that involves gathering, analyzing, and presenting essential test results and statistics to stakeholders.
- Test Report is a detailed document that contains a summary of the test, the process involved and the final test results.

Importance of Test Reporting

- Maintain Cost-effectiveness
- Ensure release readiness
- Improve User Churn Rate
- Better Visibility and Control

Test Reporting

Who needs Test Reporting?

- **Developers,** who perform unit testing and debug code based on test results to deliver error-free code.
- **QAs,** who test the application using different testing techniques like functional, regression, usability, and cross-browser testing to find bugs and document them in detailed Test Execution Reports.
- **Product Managers,** who foresee the entire software development lifecycle of the product and ensure optimum performance with faster delivery and high quality.
- **Business Analysts,** who ensure all the test cases are well aligned with the business requirements specs at every stage, keeping users’ interests in mind.

Test Reporting - Types of Test Reports

- **Test Summary Report:** It provides a high-level overview of the testing activities conducted during a specific phase or cycle of the project. It includes metrics such as the number of test cases executed, passed, failed, and any outstanding defects. The summary report helps stakeholders understand the overall status of the testing effort.
- **Test Execution Report (TER):** It provides detailed information about the execution of test cases, including the test case ID, description, status (pass/fail), and any comments or observations from the tester. TER allows stakeholders to track the progress of testing and identify areas that may require further attention.
- **Defect Report/Bug Report:** It documents any defects or issues identified during testing. It typically includes information such as the defect ID, description, severity, priority, steps to reproduce, and status (open, fixed, closed,

Test Reporting - Types of Test Reports

- **Traceability Matrix:** A traceability matrix maps requirements to test cases, ensuring that each requirement has been adequately tested. It helps verify that all project requirements have been addressed and provides a clear understanding of the test coverage.
- **Performance Test Report:** This report presents the results of performance testing, including metrics such as response time, throughput, resource utilization, and scalability. It helps assess the performance characteristics of the software under various conditions and identify any performance-related issues.
- **Security Test Report:** For applications handling sensitive data or operating in security-critical environments, a security test report documents the findings of security testing activities. It identifies vulnerabilities, potential threats, and recommendations for improving the security posture of the software.

Test Reporting - Types of Test Reports

- **Regression Test Report:** When conducting regression testing, a report may be generated to summarize the impact of changes on existing functionality. It includes information about the test cases executed, any regressions detected, and the overall stability of the system after changes.
- **Compliance Test Report:** In regulated industries such as healthcare or finance, compliance test reports ensure that software meets relevant regulatory requirements and standards. These reports document adherence to specific guidelines and may be required for certification or approval.
- **User Acceptance Test (UAT) Report:** This report documents the results of user acceptance testing, where end-users validate whether the software meets their requirements and expectations. It includes feedback from users, any issues encountered, and the overall readiness of

Components of Test Report

TEST OBJECTIVE

AREAS COVERED

AREAS NOT COVERED

TESTING APPROACH

DEFECT REPORT

PLATFORM DETAILS

OVERALL SUMMARY