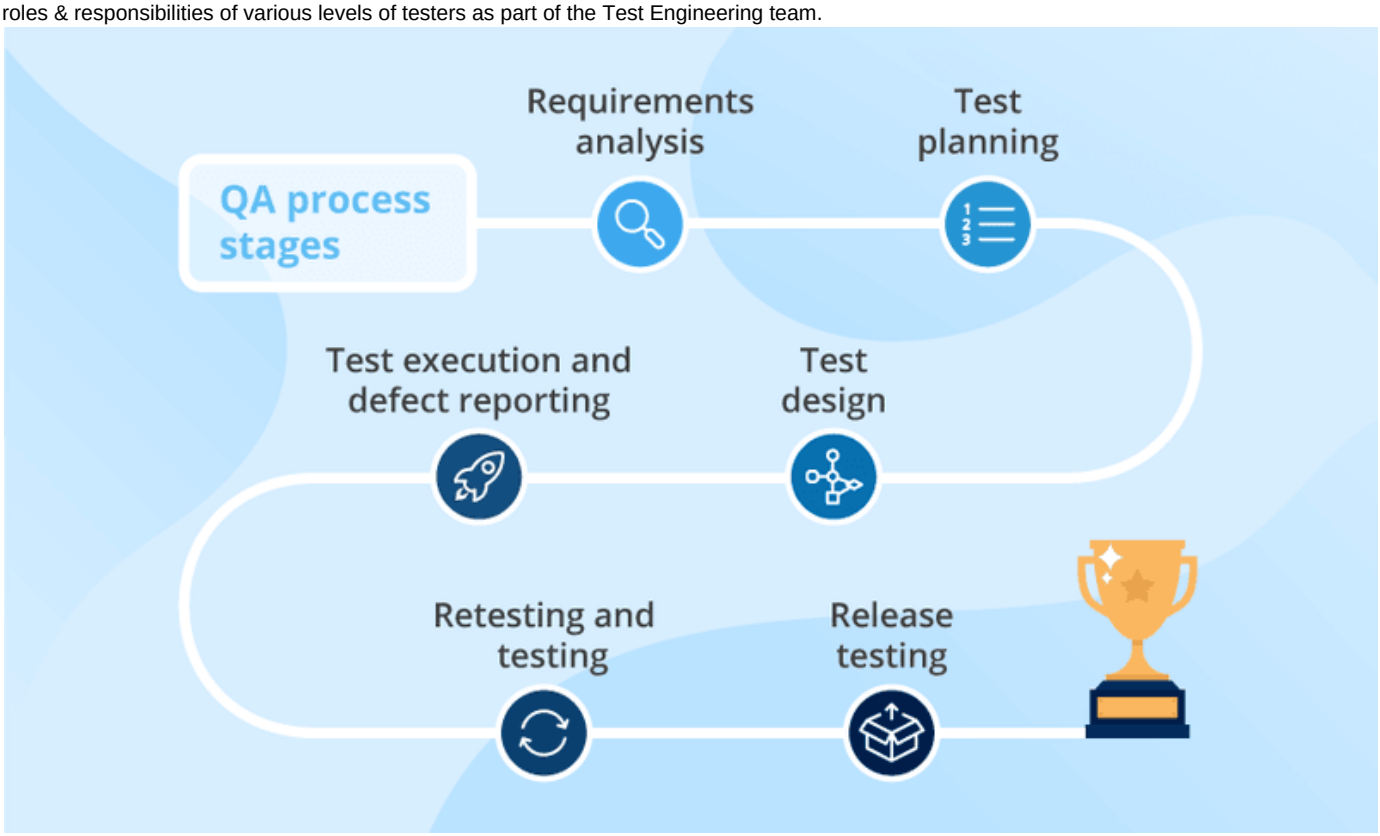
QA Process

Test Engineers will be involved in all phases of the testing program, right from Requirement Analysis, designing the test parameters to troubleshooting errors and completion of final test procedures.

They are responsible for designing and implementing the tests that ensure the quality and functionality of a product. Explained below are the roles & responsibilities of various levels of testers as part of the Test Engineering team.

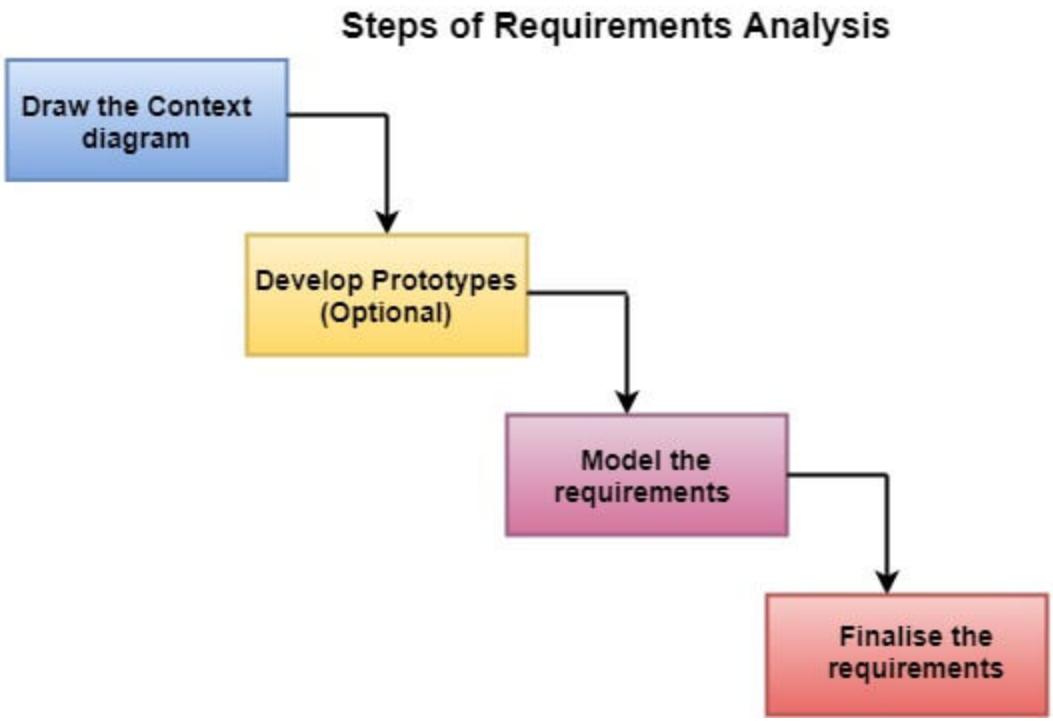


Stages of QA processes

- Stages of QA processes
  - Requirement Analysis
  - Test Planning
  - Test Strategy
  - Test Design
  - Test Case
  - Test execution
  - Defect Tracking
  - Test Summary
  - Test Signoff
  - Requirement Traceability Matrix (RTM)

Requirement Analysis

- Analyze, refine, and scrutinize the gathered requirements to make consistent and unambiguous requirements.
- This activity reviews all requirements and may provide a graphical view of the entire system. After the completion of the analysis, it is expected that the understandability of the project may improve significantly.
- Here, we may also use the interaction with the customer to clarify points of confusion and to understand which requirements are more important than others.



Test Planning

In the Test Plan, test focus and project scope are defined. It deals with test coverage, scheduling, features to be tested, features not to be tested, estimation and resource management.

Functional Testing

1. Smoke testing
2. Sanity testing
3. Unit testing
4. Integration testing
5. Regression testing
6. Retesting
7. User Acceptance testing

Non-Functional Testing

1. Performance testing
2. Usability testing
3. Security testing
4. Reliability testing

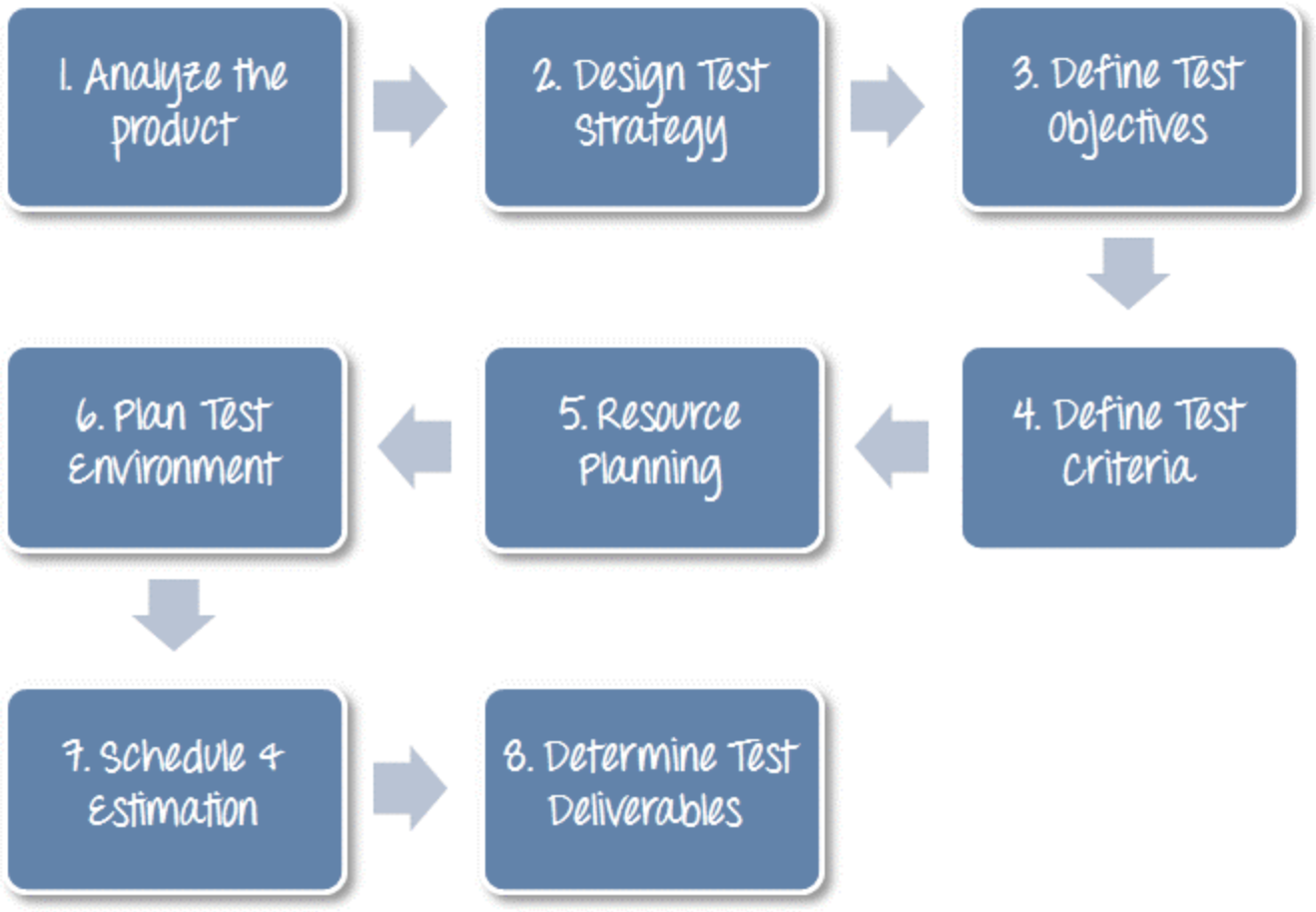
API Testing

1. Client's request to the server
2. Returns a response to the client.

- It fulfills its expected functionality, security, performance and reliability. The tests are performed either directly on the API or as part of integration testing.

Automation

1. End-to-End Testing
2. Non-Functional Testing
3. Application Health Monitoring:



Test Strategy

Test strategy is a guideline to be followed to achieve the test objective and execution of test types mentioned in the testing plan. It deals with test objective, test environment, test approach, automation tools and strategy, contingency plan, and risk analysis.

Step:1 Scope

In Scope - it means that a specific job or deliverable falls under the project's responsibilities. It means, we have to do it!

Out of scope - Out of scope means that something is not supposed to be tested.

Step:2 Test Approach

It defines

- Process of testing
- Testing levels
- Roles and responsibilities of each team member
- Types of Testing (Load testing, Security testing, Performance testing etc.)
- Testing approach & automation tool if applicable
- Adding new defects, re-testing, Defect triage, Regression Testing and test sign off

Step:3 Test Environment

- Define the number of requirement and setup required for each environment
- Define backup of test data and restore strategy

Step:4 Testing Tools

- Automation and Test management tools needed for test execution
- Figure out a number of open-source as well as commercial tools required, and determine how many users are supported on it and plan accordingly

Step:5 Release Control

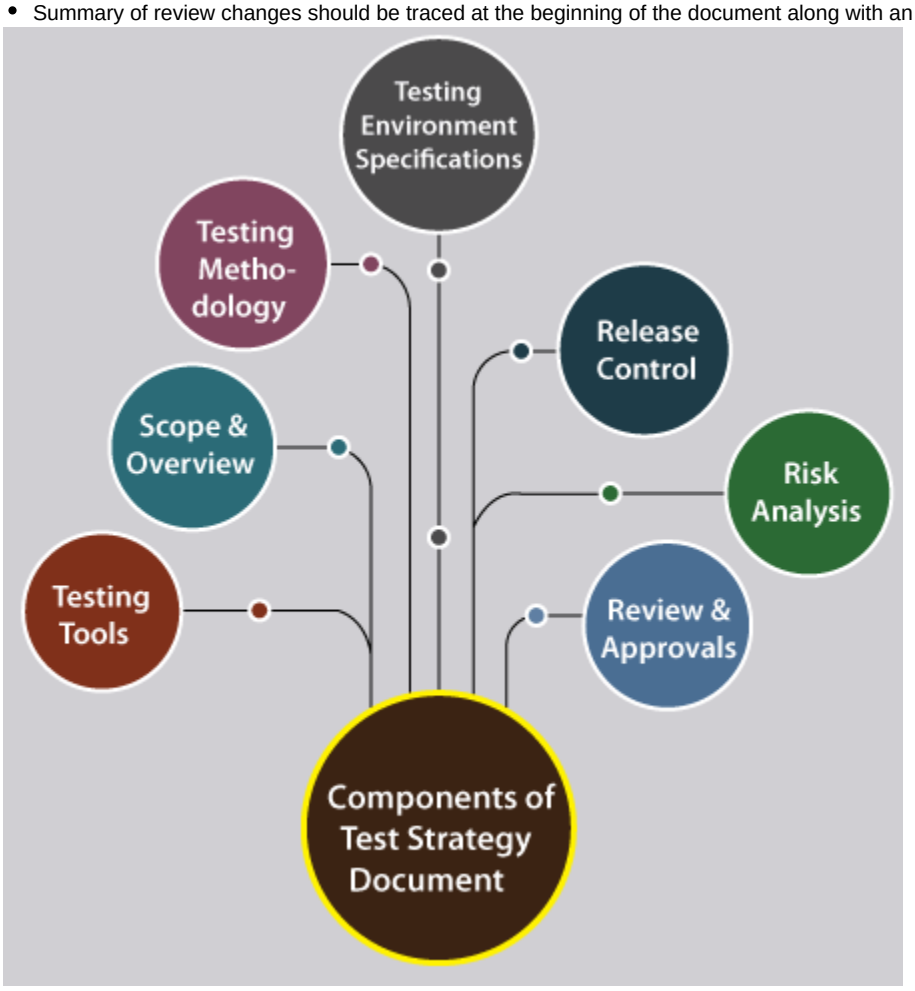
- Release management plan with appropriate version history that will make sure test execution for all modification in that release

Step:6 Risk Analysis

- List all risks that you can estimate
- Give a clear plan to mitigate the risks also a contingency plan

Step:7 Review and Approvals

- All these activities are reviewed and signed off by the business team, project management, development team, etc.
- Summary of review changes should be traced at the beginning of the document along with an approved date, name, and comment



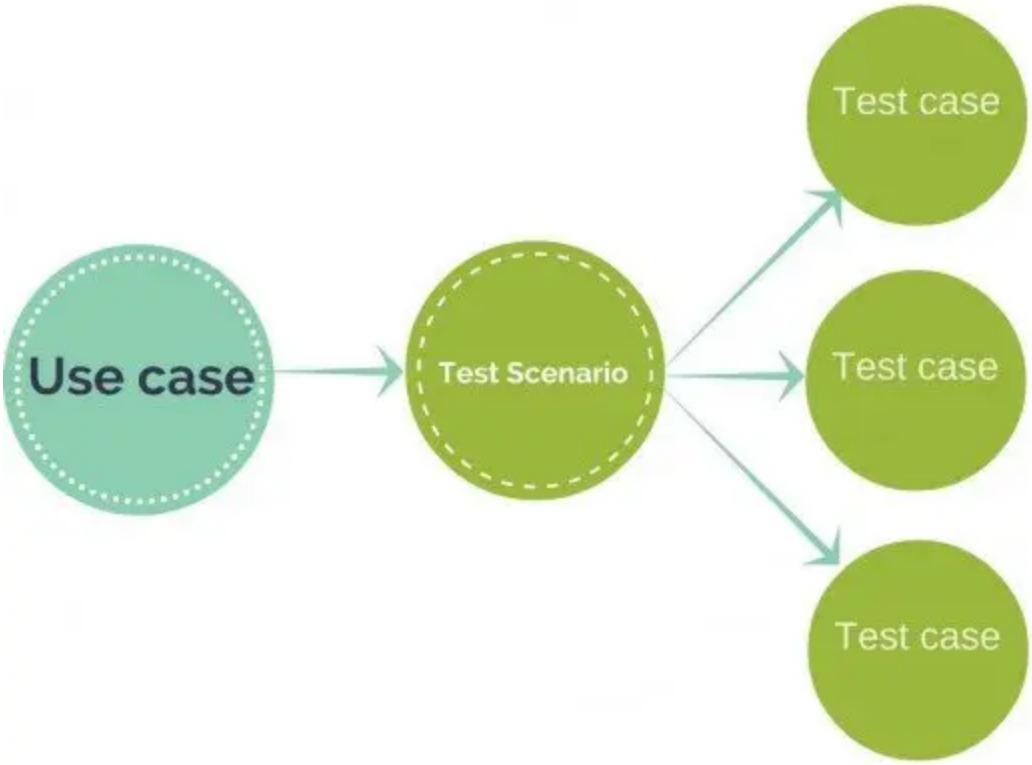
Test Design

Test design is a process that describes “how” testing should be done. It includes processes for the identifying test cases by enumerating steps of the defined test conditions. The testing techniques defined in test strategy or plan is used for enumerating the steps.

Test Case

- A Test Case is a set of actions executed to verify a particular feature or functionality of your software application.
- A Test Case contains test steps, test data, precondition, postcondition developed for specific test scenario to verify any requirement.
- The test case includes specific variables or conditions, using which a testing engineer can compare expected and actual results to determine whether a software product is functioning as per the requirements of the customer.

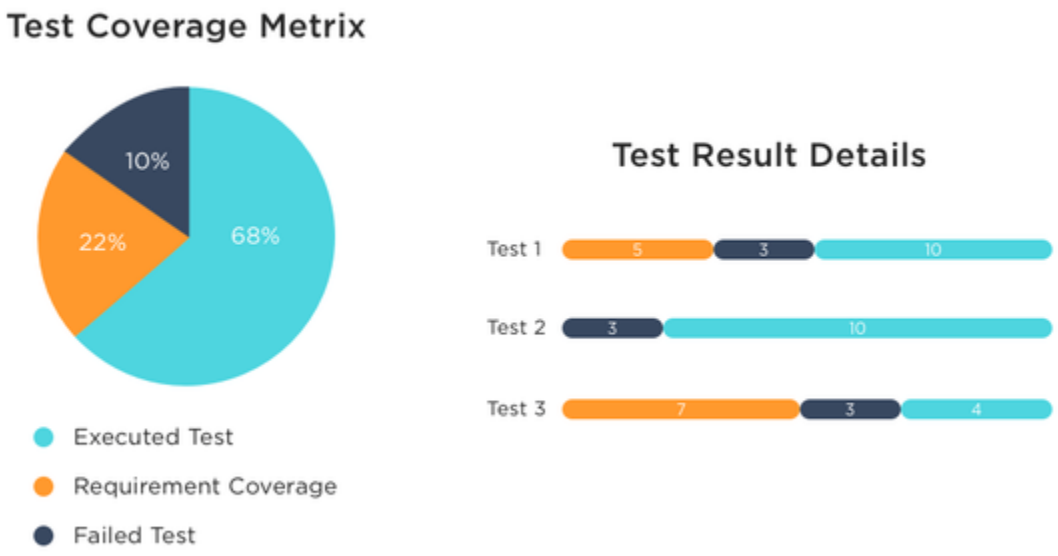
You can go through the below attached Test Case template for reference



Test execution

After a test object has been delivered and entry conditions for test execution are met, the test execution phase begins. Ideally, tests should be conducted as per the defined test cases. However, the Test Manager may allow the testers to perform additional tests for interesting and new behaviors observed during testing.

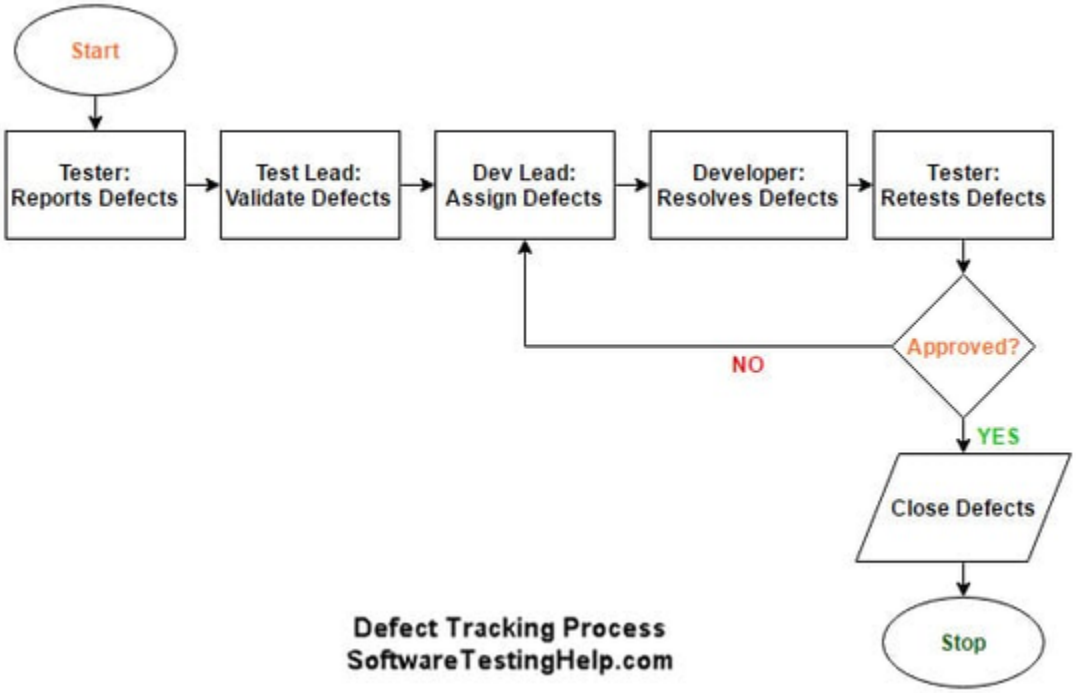
You can go through the below attached Test Execution template for reference



Defect Tracking

Defect Status or Bug Status in the defect life cycle is the present state from which the defect or a bug is currently undergoing. The goal of defect status is to precisely convey the current state or progress of a defect or bug to better track and understand the actual progress of the defect life cycle.

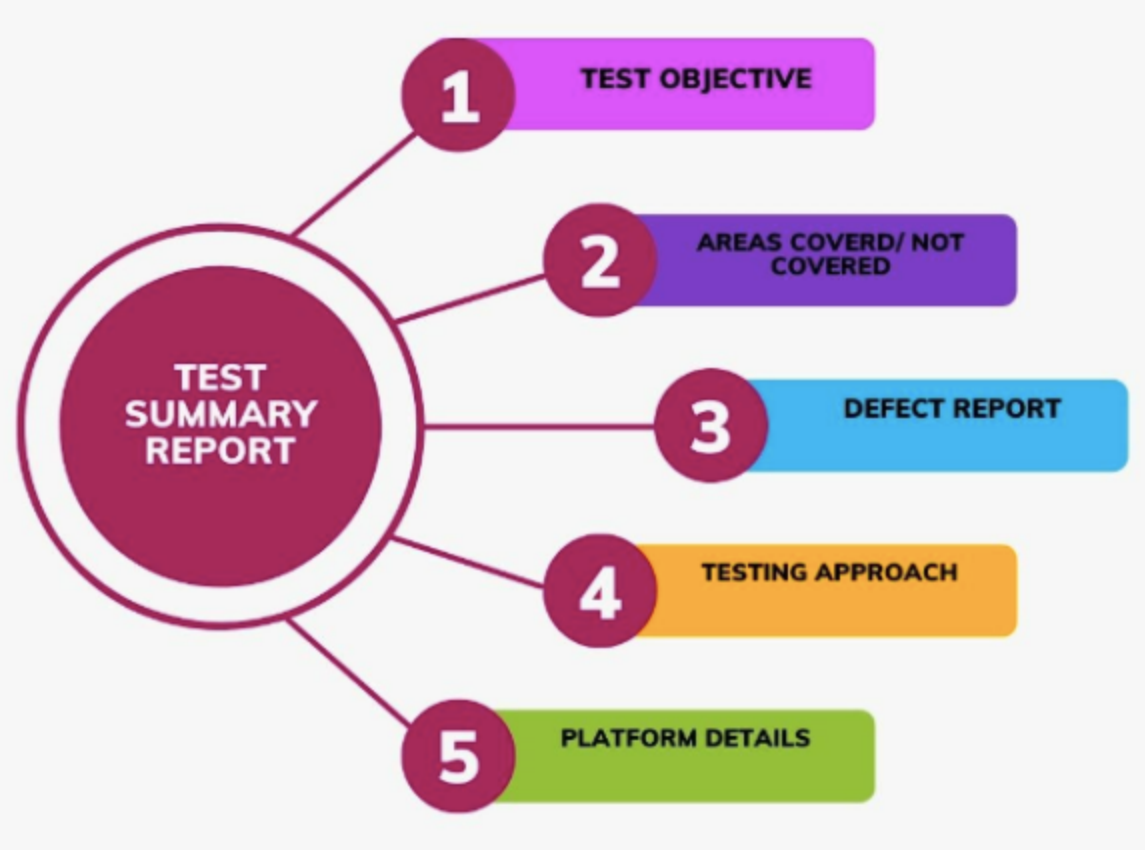
You can go through the below attached Defect Tracking template for reference



Test Summary

- Test Summary is a document which contains a summary of all test activities and final test results of a testing project.
- Test report is an assessment of how well the Testing is performed. Based on the test report, stakeholders can evaluate the quality of the tested product and make a decision on the software release.

  You can go through the below attached Test Summary template for reference



Test Signoff

- Once the application is tested thoroughly, QA prepares the Sign Off document to acknowledge that they have reviewed and tested the application and now the application is ready for release.
- Sign Off document should be sent to respective stake holders via email or any formal communication channel. Usually, the QA, Project Manager, and Business Analyst takes the responsibilities and agrees to the QA Sign Off.

You can go through the below attached QA Sign Off template for reference

Requirement Traceability Matrix (RTM)

- RTM is a document that maps and traces user requirement with test cases. It captures all requirements proposed by the client and requirement traceability in a single document, delivered at the conclusion of the Software development life cycle.
- The main purpose of Requirement Traceability Matrix is to validate that all requirements are checked via test cases such that no functionality is unchecked during Software testing.

You can go through the below attached RTM template for reference
SAMPLE TEMPLATE

Sample Template.xlsx