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AHTISHAM UL HAQ (FA21-BSE-072)®

SOFTWARE TESTING ASSIGNMENT: 1

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Evolution of a test plan template:

The evolution of a test plan template corresponds to developments and changes in software development processes, tools, and best practices. The evolution of test plan templates is as follows:

1. Early Stages of Software Development

In the beginning, software development was more ad hoc, and testing was frequently informal. Test plans were simple and generally included:

Example:

Objective: A high-level overview of what the test hoped to accomplish.

Scope: A basic summary of which components of the software will be checked.

Test Cases: A list of test cases with predicted outcomes.

Resources: Who would conduct the tests?

2. Implementation of Structured Test Plans (1970s-1980s)

As software complexity rose, more formal techniques to testing arose, resulting in more thorough test plans. During this period, the following were introduced:

Test objectives are clear and thorough.
Test criteria include entry and exit requirements for testing phases.
Test deliverables are the documents and artifacts that will be created during the testing process.
Resource Planning is the detailed planning of people resources, tools, and surroundings.

3. Standardization (1990s).

Standardization in software engineering methods began in the 1990s with the release of standards such as IEEE 829. During this period, the emphasis was on:

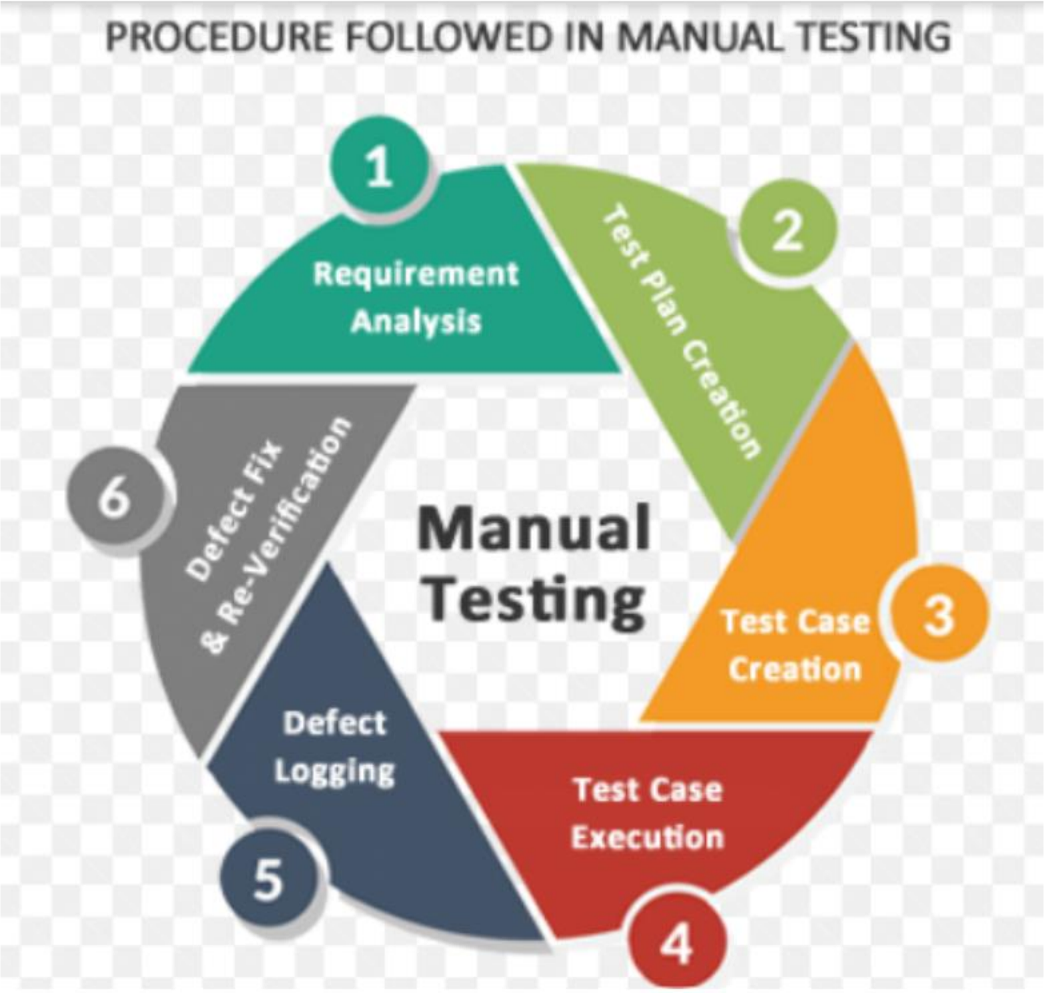
Example:

Test Plan Identification: Test plans are assigned unique identifiers.
Features to be evaluated: A comprehensive list of software features to be evaluated.
Features that will not be tested include clearly specified exclusions.

Test Strategy: A comprehensive strategy to testing that includes many forms of testing (e.g., functional and performance).
Environment requirements include detailed hardware and software specifications.

Responsibilities: The test team's roles and responsibilities.

Schedule: A detailed testing plan with milestones.



4. Agile and iterative development (2000s)

The introduction of Agile techniques altered how testing was conducted. Testing strategies become more adaptable and iterative. Significant modifications included:

Iterative test planning involves creating and updating plans for each iteration or sprint.

Example:

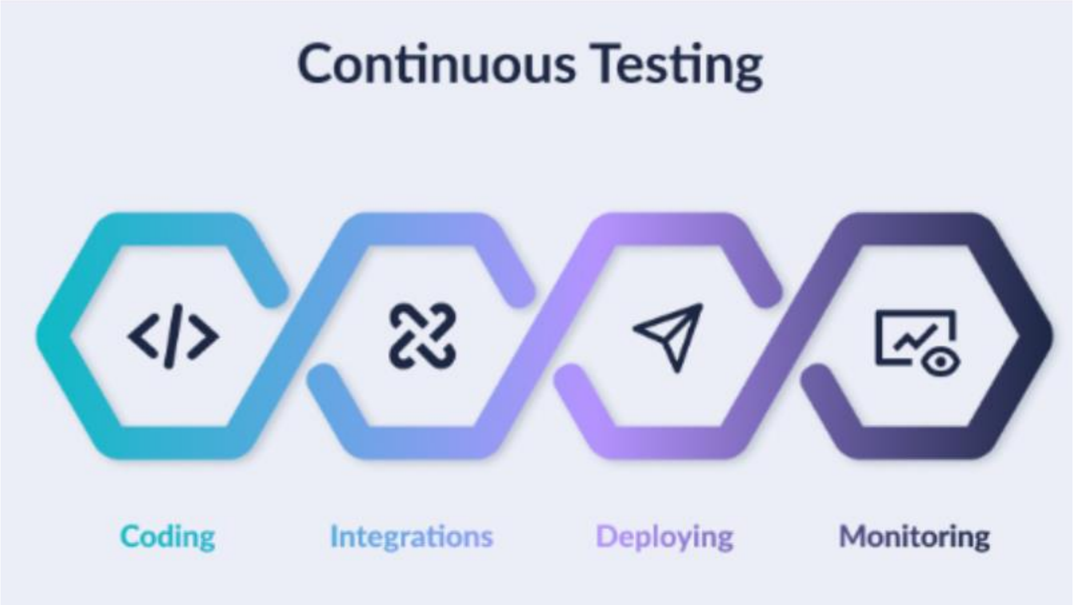
User Stories: Test cases that relate to user stories or functionalities.
Continuous Integration/Continuous Deployment (CI/CD) is the integration of testing into CI/CD workflows.
Teamwork and Communication: A focus on teamwork among testers, developers, and business stakeholders.
Automation: More emphasis on automated testing and the incorporation of automation strategies into test programs.

5. DevOps and Continuous Testing (2010s).

With the introduction of DevOps, test strategies become even more interwoven with development and operations. Features included:

Continuous Testing: Testing is an essential component of the CI/CD workflow.

Monitoring and Feedback: Implementation of monitoring strategies and feedback loops in production.
Tool Integration: A detailed plan for integrating numerous testing tools and frameworks.



6. Modern Test Plan (2020s and Beyond)

Modern test plans are extremely adaptable, automated, and integrated with a variety of tools and procedures. They frequently include:

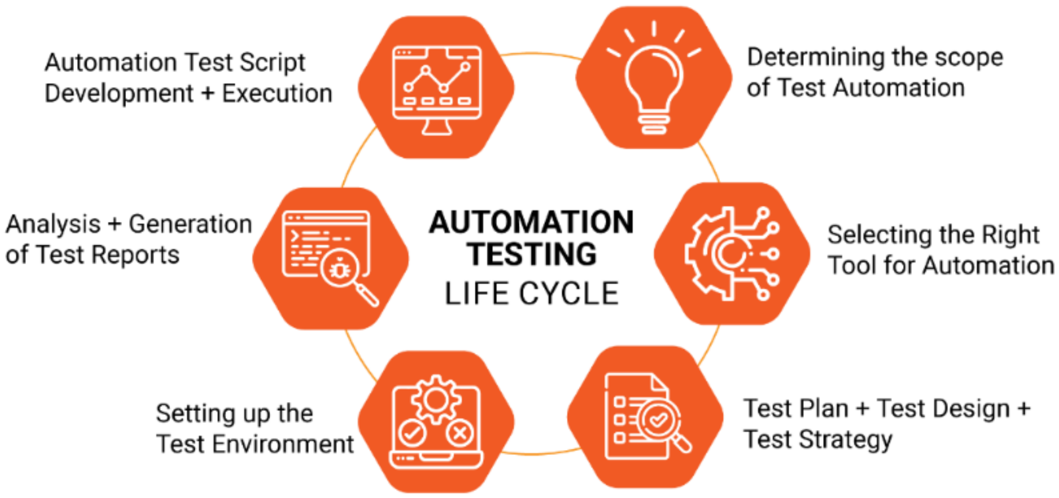
AI and ML: The use of AI/ML for test optimization and defect prediction.

Microservices and Cloud: Specific approaches to testing microservices and cloud-native systems.
Security and Compliance: Detailed preparations for security testing and regulatory compliance (for example, GDPR and HIPAA).

Performance and Scalability: Strategies for conducting comprehensive performance testing.

User Experience (UX) Testing: Strategies for assessing usability and user experience.

The Automation Era -


AUTOMATION TESTING LIFE CYCLE
Determining the scope of Test Automation
Selecting the Right Tool for Automation
Test Plan + Test Design + Test Strategy
Setting up the Test Environment
Analysis + Generation of Test Reports
Automation Test Script Development + Execution

Typical Sections of a Modern Test Plan Template

Introduction

Purpose

Scope

Objectives

Test Strategy

Testing types (e.g., unit, integration, system, acceptance)

Test levels (e.g., smoke, sanity, regression)

Automation strategy

Test Environment

Hardware requirements

Software requirements

Test data

Test Deliverables

Test cases

Test scripts

Test reports

Test Schedule

Milestones

Timeline

Resources and Roles

Test team roles

Responsibilities

Risk Management

Potential risks

Mitigation strategies

Entry and Exit Criteria

Criteria for starting and stopping testing phases

Tools and Automation

Tools to be used

Automation frameworks

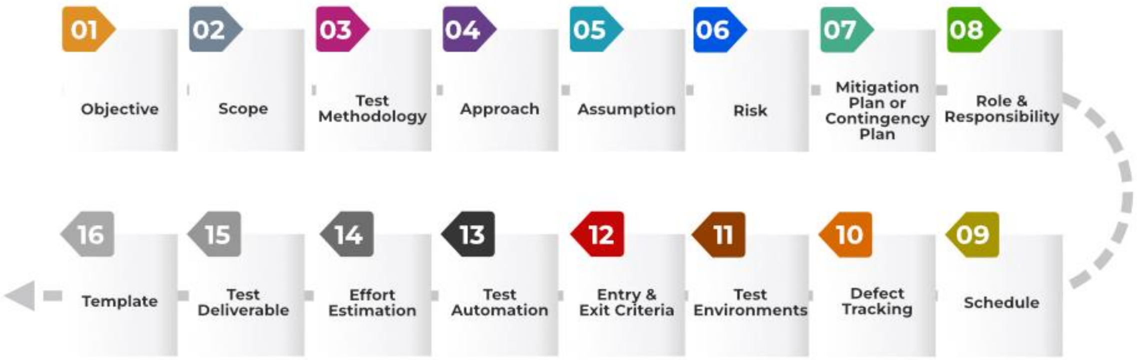
Reporting and Metrics

Test metrics

Reporting mechanisms

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

Test Plan Atributes



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

Conclusion

Test plan templates evolve to accommodate software system complexity, requiring structured, flexible, and comprehensive strategies. Modern plans integrate with development lifecycles for continuous quality and adaptability.

Reference:

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