Testing Documentation

Ahmedabad University

CSE300 Software Engineering

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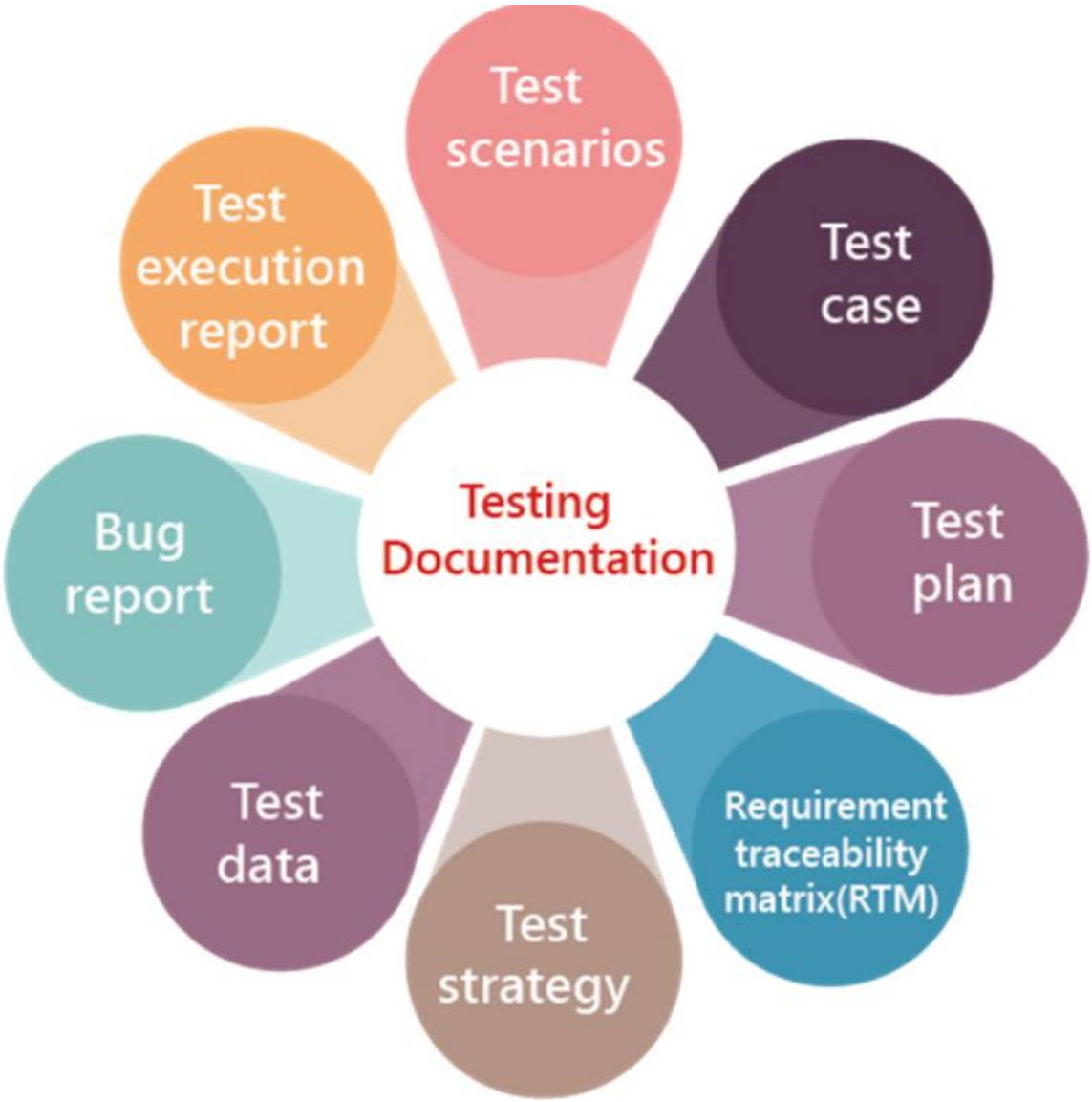
The goal of this software testing document is to give a brief overview of the various methodologies of testing used for reviewing all the functionalities of the software that has been built.



Testing Objectives:

Requirement Understanding:

- Objective: Ensure that the testing team understands the software requirements thoroughly.

- Explanation: The testing document outlines the functional and non-functional requirements, helping the testing team to align their efforts with the specified features and expectations.

Test Planning:

- Objective: Define a comprehensive testing strategy and plan.
- Explanation: The document includes details about the scope, objectives, resources, schedule, and approach for testing. It helps in efficient resource allocation and sets clear expectations.

Test Case Development:

- Objective: Provide a basis for creating detailed test cases.
- Explanation: Testing documents include the high-level test scenarios and conditions that guide the development of detailed test cases. This ensures systematic coverage of functionalities.

Traceability:

- Objective: Establish a traceability link between requirements and test cases.
- Explanation: By mapping test cases to specific requirements, the testing document facilitates the tracking of test coverage and ensures that all aspects of the software are tested.

Reproducibility:

- Objective: Ensure that tests can be easily reproduced.
- Explanation: Clearly documented test cases, including input data, expected results, and steps to reproduce, contribute to the reproducibility of tests, aiding in debugging and issue resolution.

Communication:

- Objective: Facilitate effective communication among team members.
- Explanation: Testing documents serve as a common reference point for developers, testers, and other stakeholders, fostering clear communication about testing goals, progress, and issues.

Quality Assurance:

- Objective: Ensure the software meets quality standards.
- Explanation: Testing documents help in defining quality criteria, acceptance criteria, and performance standards. They guide the testing team in assessing whether the software meets these predefined criteria.

Risk Management:

- Objective: Identify and manage potential risks.

- Explanation: Testing documents often include a risk assessment, identifying potential issues and challenges. This helps in proactively addressing risks and developing contingency plans.

Testing:

Unit Testing:

- Purpose: Verify the functionality of individual units or components.
- Key Characteristics: Isolation of components, early detection of defects, and automation for efficiency.

Integration Testing:

- Purpose: Validate the interactions between integrated components or systems.
- Key Characteristics: Identify interface issues, assess data flow between modules, and verify communication protocols.

System Testing:

- Purpose: Evaluate the complete system's compliance with specified requirements.
- Key Characteristics: Focus on end-to-end functionality, uncover issues in system behavior, and ensure overall system reliability.

Acceptance Testing:

- Purpose: Determine if the software meets user requirements and is ready for deployment.
- Key Characteristics: Involves both Alpha and Beta testing, often performed by end-users, and validates user acceptance criteria.

Regression Testing:

- Purpose: Ensure that new code changes do not negatively impact existing functionalities.
- Key Characteristics: Re-execution of previously conducted tests, especially after modifications or additions to the codebase.

Performance Testing:

- Purpose: Evaluate system responsiveness, scalability, and stability under different workloads.

- Key Characteristics: Types include Load Testing, Stress Testing, and Scalability Testing, aiming to identify performance bottlenecks.

Security Testing:

- Purpose: Identify vulnerabilities and weaknesses in the system's security measures.
- Key Characteristics: Assess system resilience against unauthorized access, data breaches, and other security threats.

Features to be tested:

1) Login functionalities for different users(i.e., Admin, Mess Manager, Student).
2) Admin able to register new students.
3) Admin able to add extra slots for room-cleaning.
4) Students able to select a place for lunch and high tea.
5) Students able to make a request for room-cleaning and bed-sheet change.
6) Room cleaning staff able to view requests made by students.