

Practical – 9

AIM: Study of various software testing methods and design test cases for selected application.

1. Software Testing Methods

There are various software testing methods used to ensure the correctness, reliability, and performance of a software application. Based on the selected project, the following testing methods are applicable:

a. Unit Testing

- Testing individual components or functions in isolation.
- Ensures that each function/module behaves as expected.
- Example: Testing user login validation function.

b. Integration Testing

- Focuses on checking the interaction between integrated modules.
- Ensures data flow between different components (e.g., login module to dashboard).
- Example: After login, check if the correct user dashboard is loaded.

c. System Testing

- Tests the entire application as a whole to verify that it meets requirements.
- Example: Testing the full flow from user registration to viewing reports.

d. Acceptance Testing

- Conducted to validate the software against business requirements.
- Performed by end users or clients.
- Example: Verifying if user can successfully filter and view data reports.

e. Regression Testing

- Ensures that new updates don't break existing functionality.
- Example: After adding a new report format, check if login and search still work.

2. Design of Test Cases for the Application

Test Case ID	Module	Test Scenario	Input	Expected Output	Result
TC_01	Login	Login with valid credentials	Username: admin, Pass: 123	Redirect to dashboard	Pass/Fail
TC_02	Login	Login with invalid password	Username: admin, Pass: abc	Show error message	Pass/Fail
TC_03	Registration	Register new user	User info filled	Registration success message	Pass/Fail
TC_04	Search	Search for a user	Username: Rishi	Display matching user info	Pass/Fail
TC_05	Report Generation	Generate activity report	Select date range	Show report with correct data	Pass/Fail
TC_06	Dashboard	View dashboard after login	User logged in	Show user statistics and summary	Pass/Fail
TC_07	Filter	Apply filter on user list	Filter: "Active users"	Show filtered results	Pass/Fail

Conclusion:

The testing phase is crucial to ensure that all functionalities of the application work as expected. By applying unit, integration, system, and acceptance testing methods, and designing test cases for core modules, we can verify the correctness and reliability of the application before deployment.