



LAB 5

SYSTEM TEST PLANNING

LAKSHYA TANDON

Software Requirement Specification(SRS)

- ▶ It is a description of the software system that is to be developed.
- ▶ It specifies the **functional** and **non-functional** requirements
- ▶ SRS specifies “WHAT” is to be developed, not “HOW”. “HOW” is specified by the design.
- ▶ SRS may include use cases that describe the user interactions that the software must provide.

Use Cases

- ▶ Can be defined as a list of actions or events between the role(actor which can be human or another system) and a system to achieve the goal.
- ▶ It has the following characteristics:
 - ▶ Organizes the functional requirements.
 - ▶ Models the goal of user interactions.
 - ▶ Records paths from triggered events to the goal.
 - ▶ Describes the **main flow of events** as well as the **exceptional flow of events**.

Software Testing

- ▶ Software testing is a process of executing a program or application with the intent of finding the software bugs.
- ▶ It involves execution of software component or system component to some of the properties of interest.
- ▶ It provides information about **quality of software** and **risk of failure**.

Testing Methods – Static vs Dynamic

- ▶ Static Testing

- ▶ Reviews, walkthroughs or inspections are referred to as static testing.

- ▶ Dynamic Testing

- ▶ Testing the code thoroughly using test cases is called Dynamic testing

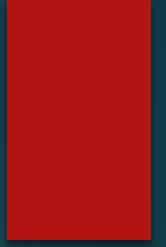
Testing Methods – White box vs Black box

- ▶ White box testing
 - ▶ tests internal structures or workings of a program.
- ▶ Black box testing
 - ▶ Treats software as a “black box”, examining the functionality without any knowledge of internal implementation.

Testing Levels

- ▶ Unit Testing
- ▶ Integration Testing
- ▶ Component Interface Testing – checks handling of data passed between various units.
- ▶ System Testing
- ▶ Operational Testing – pre-release of the software.

Testing vs Debugging - Differences



Testing vs Debugging - Differences

▶ Testing

- ▶ Purpose of testing is to find a bug.
- ▶ Starts with known conditions, uses predefined methods (test cases).
- ▶ It proves programmer failure.
- ▶ Performed after development.

▶ Debugging

- ▶ Purpose of debugging is to find the cause of the bug.
- ▶ Starts with unknown conditions and end cannot be predicted.
- ▶ It proves programmers vindication.
- ▶ Performed within the development.

Test Cases

- ▶ It is a document which has set of test data, preconditions, expected results and post conditions.
- ▶ It is developed in a particular test scenario in order to verify compliance against a specific requirement.
- ▶ It has a start point and after applying a set of input values leaves the application has a definitive output.
- ▶ They are really necessary for the purpose of formal testing.

Test Case - Example

- ▶ We need to check an input field which can contain a maximum of 10 characters.

Scenario	Test Step	Expected Result	Actual Outcome
Verify that the input field that can accept maximum of 10 characters	Login to application and key in 10 characters	Application should be able to accept all 10 characters.	Application accepts all 10 characters.
Verify that the input field that can accept maximum of 11 characters	Login to application and key in 11 characters	Application should NOT accept all 11 characters.	Application accepts all 11 characters.

→ Pass

→ Fail

You can continue with Lab exercise
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