

Component 4: Introduction to Information and Computer Science

Unit 9: Components and Development of Large Scale Systems Lecture 5

This material was developed by Oregon Health & Science University, funded by the Department of Health and Human
Services, Office of the National Coordinator for Health Information Technology under Award Number 1U49CE000015.

Topic II: Systems Development Lifecycle (SDLC)

1. Systems Planning
 2. Systems Analysis
 3. Systems Design
 4. Systems Implementation
 5. Systems Support and Security
- Testing**
Testing
Testing


Testing: What, Why, How

- Syntax Errors
- Logic Errors
- Test Plan
- Test Data
- GUI



Testing Overview

- Create the Test Plan
- Determine Test Cases and Test Data
- Execute Tests
 - Test Environment
 - Automate Tests
- Fix Bugs and Retest
- Repeat as Necessary



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Test Plan

- Testing goals
- Key areas of focus
- Testing deliverables
- How tests will run
- List of items to test
- Roles and responsibilities
- Prerequisites
- Environment
- Assumptions
- What to do when test is successful
- What to do when test fails
- Glossary

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Test Cases

- Test cases are written to:
 - Cover all use cases and scenarios
 - Validate technical requirements and specifications
 - Verify the application/system meets the business and functional requirements specified
 - Verify the system meets performance standards
- Formal and Informal Test Cases
- Scenario testing

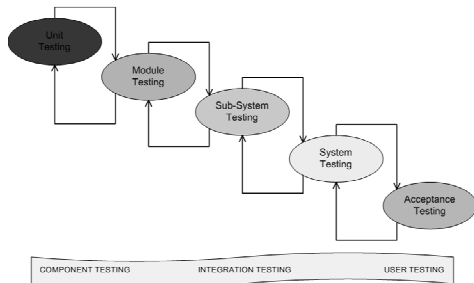
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Contents of Test Cases

- Test Case ID
- Test Case Description:
 - What to test
 - How to test
- Input Data
- Expected Result
- Actual Result
- Pass? or Fail?
- Additional information may also be captured:
 - Test Suite Name
 - Test Category
 - Tested By
 - Test Date
 - Test Iteration



Testing Sequence



Testing for Users

- Performance
- Usability
- Accessibility
 - Americans with Disabilities
 - Section 508 of the Rehabilitation Act
 - Web Accessibility Initiative



Testing Types (1 of 2)

- Ad Hoc
- Compatibility
- Exploratory
- Installation
- Load
- Stress
- Maintenance



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Testing Types (2 of 2)

- Recovery
- Reliability
- Regression
- Sanity
- Scalability
- Security
- Smoke
- Volume



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Reliability Theory

- Probability
- Statistics
- Failure Rate
- Hazard Rate



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