



Course 326: Writing Requirements with Structured Use Case Descriptions (3 days)

Course Description...

Perhaps the single most significant factor that drives successful software projects – those that meet customer and user needs – is the availability of a complete, consistent, clear, correct, testable set of functional and non-functional requirements. In particular, the functional requirements section is invariably the largest in the requirements specification, in terms of page count or word count, and invariably the most important, in terms of producing a robust information system. Clearly, organizations that can produce coherent, complete, consistent functional and non-functional requirements properly enjoy a decided competitive advantage, and are most likely to enjoy substantial returns on their software engineering investments.

Suggested Prerequisites...

No specific prerequisites are assumed. A familiarity with information system concepts is recommended.

Who should attend...

This course is suited for software practitioners, business analysts, systems analysts, project managers, and quality assurance professionals.

Learning Objectives...

- Understand the major sections of the system requirements specification: functional requirements; data dictionary; performance requirements; interface requirements; design constraints; and characteristics
- Examine the role of the context diagram as a starting point for requirements engineering and system testing
- Define the nature and role of the use case as a vehicle for expressing functional requirements, and as a basis for specifying non-functional requirements as well
- Obtain experience in writing structured use case descriptions and creating non-functional requirements
- Obtain experience in evaluating use case descriptions during the baselining process.

See next page for a detailed course outline...



Course Outline...

Chapter 1: Introduction to Requirements Documentation

Chapter Objectives

Requirements Documentation Concepts

- Definitions
- Requirements process overview
- Requirements drive other work products
- Functional and non-functional requirements

Requirements Specification Components

- Standards
- Audience
- Modes
- Functional and non-functional requirements
- Requirements specification process

Understanding the Context Diagram

- Definition
- Structure
- Uses
- Accompanying description
- Examples

Workshop: Preparing a Context Diagram and Accompanying Description from Client-Furnished Material

Chapter Summary and Best Practices

Chapter 2: Components of a Functional Requirements

Specification

Chapter Objectives

Use Case Concepts

- Definition
- Use cases and functional requirements
- Structured and narrative use case descriptions
- Use case properties
- Identifying use cases
- Benefits and costs of structured use case descriptions

Workflow Diagram for a Business Process

- Workflow diagram structure
- Using the workflow diagram to identify predecessor and successor use cases
- Notation
- Examples

Workshop: Creating a Workflow Diagram

Elements of a Use Case Description

- Structure
- Unique identifier
- Title
- Introductory narrative
- Main success scenario



- Extensions

Workshop: Writing a Use Case Introduction

Chapter 3: Main Success Scenarios

Chapter Objectives

Elements of a Main Success Scenario

- Pre-conditions
- Steps
- Post-conditions
- Examples

Writing Pre- and Post-Conditions

- Properties
- Format
- Examples

Workshop: Writing Pre-Conditions and Post-Conditions

Writing the Steps of the Main Success Scenario

- Properties
- Format
- Notes
- Optional steps
- Multiple actors
- Examples

Workshop: Writing the Steps of the Main Success Scenario

Chapter 4: Extensions, Alternatives, and Fragments

Chapter Objectives

Writing the Steps of Extensions

- Identifying extensions
- Trigger conditions
- Format
- Examples

Workshop: Identifying Extensions

Workshop: Writing Extension Steps

Writing the steps of alternatives

- Identifying alternatives
- Alternatives vs. extensions
- Linking alternative use cases
- Examples

Workshop: Distinguishing Alternatives from Extensions

Writing the steps of fragments

- Identifying and extracting fragments
- References to fragments
- Examples

Workshop: Writing Fragments

Chapter Summary and Best Practices



Chapter 5: Writing Data Specifications

Chapter Objectives

Data Elements in Structured Use Case Descriptions

- Editing use case descriptions for data element consistency
- Examples

Writing Data Structure Specifications

- Data element metadata
- Specifying data types
- Specifying valid domains
- Examples

Workshop: Writing Data Specifications for Scenarios Produced in Earlier Workshops

Chapter Summary and Best Practices

Chapter 6: Non-Functional Requirements

Chapter Objectives

Writing performance requirements

- Need for performance requirements
- Writing performance specifications
 - Response time
 - Throughput
 - Capacity
 - Availability and reliability

Workshop: Writing performance requirements

Writing interface requirements

- Interface types
- Protocols
- Writing system interface specifications
- Writing user interface specifications

Writing design constraints

- Benefits
- Examples

Workshop: writing design constraints

Writing characteristics

- Definitions
- Writing characteristic specifications

Workshop: writing characteristic specifications

Chapter Summary and Best Practices

Chapter 7: Evaluating Requirements Specifications

Chapter Objectives

Evaluation Concepts

- Goals
- Participants
- Evaluation process overview



What to Look for

- Completeness
- Internal consistency
- Consistency with other requirements
- Evaluation criteria for use cases

Workshop: Evaluating Scenarios Produced in Earlier Workshops

Chapter Summary and Best Practices

Chapter 8: The Bottom Line

Course summary

Highlights from students' perspectives

Please contact your ROI representative to discuss course tailoring!!!