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Testing Use Case-Driven Projects

This course teaches students how to leverage their projects’ use cases, requirements and requirements artifacts to develop test plans, test cases, and test scripts to support iterative development. Students will learn the concepts and a practical step-by-step approach for developing test plans, test cases and test scripts. How to apply these concepts and techniques in an agile methodology approach is also discussed. Lab exercises in which students practice the techniques are a central part of the course.

This course focuses on functional testing; performance, load, stress, and other types of tests are also discussed. The class will not cover basic testing overview concepts, except as needed. Familiarity with the testing role and test activities is assumed.

Objectives:

Upon completion of this course, the students will be able to

- Apply the Use Case Driven Testing approach
- Develop an Iteration Test Plan
- Group and trace requirements by Use Cases
- Identify potential tests for a Use Case
- Define the Test Cases for a Use Case
- Develop a Test Script for a Test Case
- Organize the testing artifacts
- Manage change control items, both defects and change requests, across iterations of the project (optional)

Audience:

Test managers, testers, business analysts, project managers, programmers, and/or subject matter experts responsible for testing or overseeing testing activities.

Prerequisites:

- Knowledge of, or experience with, use cases is highly recommended (e.g., IconATG course, “Introduction to Use Cases”).
- Familiarity with the testing role and test activities is highly recommended.

Outline:

1. Developing an Overall Test Plan
   - Overview of testing issues and concerns.
   - The Use Case Driven Testing Approach.
   - Steps in the testing process.
   - Testing artifacts.
   - Iterative development concepts, phases and iterations.

2. Developing an Iteration Test Plan
   - Iteration concepts.
   - Testing activities that occur in an iteration.
   - Agile testing, similarities and differences.
   - How to develop an iteration test plan.
   - Lab: create an iteration test plan.

3. Grouping Requirements by Use Cases
   - Use Case concepts, in comparison to traditional requirement formats.
   - Why Use Cases are the solution to the testing problem.
   - How to group requirements by Use Cases.
   - How to trace requirements to Use Cases.
   - Lab - grouping and tracing requirements by Use Cases.

4. Identifying Potential Tests from Use Cases.
   - Use Case scenarios versus Use Case flows.
   - Hierarchy of testing artifacts.
   - Concepts- operational variable, conditions, variant table, system state, expected results.
   - How to create an Operational Variable Table.
   - How to create a Variant Table.
   - Lab - create a variant table and identify potential tests.

5. Developing Test Cases from Use Cases
   - Concept - extended use case test design pattern.
   - How to group tests into test cases.
   - How to select and eliminate tests.
   - How to define a Test Case, detailed steps.
   - Lab - develop test cases from a Use Case

6. Developing a Test Script
   - Adding Test Scripts to the hierarchy of testing artifacts.
   - Adding test design to a test case.
   - How to design the steps needed to run a test.
   - How to create a Test Script.
   - Lab - develop a Test Script for a Test Case.

7. Organizing the Testing Artifacts
   - Complete the hierarchy of testing artifacts.
   - How to organize Test Cases and Test Scripts using Test Suites.
   - Concepts - User Acceptance Testing, Performance Testing, Load or Stress Testing.
   - How to design various types of tests.
   - Lab – design a Performance Test.

8. Defects and Change Management (optional)
   - Evaluating test results.
   - Concept - defects.
   - Concepts – defects vs. change requests
   - How to identify and manage defects.
   - How to identify and manage change requests. Assigning change control items to current or future iterations.