Course Outline

PTR

People, Training, Results

Unit Testing using JUnit

Course Description:

This JUnit course focuses on the fundamental concepts of Unit Testing as part of the Software Development Life Cycle and covers the core features of JUnit which is the most popular framework for implementing Unit Testing within Java projects. Version 4 of the JUnit Framework is used in this course which is the most current version.

This hands-on course shows delegates how to design and develop JUnit Test Cases for a variety of Java modules. Delegates will learn how to build related groups of Test Cases into Test Suites that can be run together to test multiple Java classes. Delegates will also learn how to integrate JUnit with build utilities such as Apache Ant and to customise test reports.

The use of Mocks and Stubs to isolate the system under test from external dependencies will also be covered and will be used to test Data Access Objects and Web Responses.

Pre-requisites:

Java Programming

Course Content:

- **UNIT TESTING**
  - Introduction to Unit Testing
  - Other Categories of Software Testing
  - Introduction to Unit Test Structure and Organisation
  - Introduction to Test Doubles
  - Test Coverage
  - Guidelines for Good Unit Tests

- **INTRODUCTION TO JUNIT**
  - Main Features of JUnit
  - JUnit Syntax
  - Integrating JUnit with Eclipse

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- **WRITING TEST CASES**
  - Test Project Structure
  - Test Case Structure
  - Junit Annotations
  - JUnit Assertions
  - Parameterised Junit Tests

- **INTEGRATING WITH ANT AND MAVEN**
  - JUnit Integration with Apache Ant
  - JUnit Integration with Apache Maven

- **TESTING STRATEGIES**
  - Test Stubs
  - Command line arguments
  - Stubbing a Database Connection with JUnit
  - Stubbing a HTTP Connection with JUnit

- **MOCKING**
  - State vs Interaction Tests
  - Test Mocks
  - The Phases of Mocking
  - Mocking using JUnit and Mockito

- **TESTING DATA ACCESS OBJECTS**
  - Strategies for Testing Data Access Objects
  - Testing Entity Mappings using an In-Memory Database with JUnit and Hibernate

- **TESTING WEB RESPONSES**
  - Validating XML against a Schema
  - Testing HTML Responses using HTMLUnit
  - Testing XML Responses using XMLUnit

Course Duration: 2 Days