

Testing, Quality Assurance, and Security Techniques

This is a 3-day workshop promoting a cohesive approach to testing: a "how-to" approach with exercises, examples, and templates that can be applied immediately to testing. It addresses the roles and responsibilities of each participant in the software development process. It outlines responsibilities, expectations, and mechanisms to measure performance and progress. The course emphasizes a practical approach to testing in order to create better products and addresses the ever-changing needs and resources of an organization.

In this workshop participants will learn how to move testing and QA techniques from "gut feelings & instinct" towards an engineering discipline. The workshop discussion is directed towards practical solutions to quality assurance problems. Techniques to ensure that an information system protects data and maintains functionality are discussed. The question of how a QA team should be involved in the process of defining security requirements is investigated. We specifically address the problems of: a lack of resources, insufficient user community involvement, no budget for test automation, poor performance measures, overlap in responsibilities, and the common pitfalls in a testing process.

Who Should Attend

This workshop is extremely beneficial for quality assurance specialists, quality control analysts, system testers, programmers, end-users (customers), business analysts, systems analysts, project managers, team leaders, support analysts, engineers, and acceptance testers. Any organizations that have no formal development methodology — or are planning to adopt a development methodology such as Agile, or plan to test in an eXtreme Programming environment — should also consider this course.

Workshop Objectives:

- ▶ Examine the differences between unit testing and system testing: where they overlap and how they can compliment each other.
- ▶ Review testing in an Agile methodology such as eXtreme Programming and 'Programming by Contract'.
- ▶ Translate requirements into tests, and demonstrate the value of early testing vs. late testing in a project.
- ▶ Use structured techniques to compute test coverage and determine if it is adequate.
- ▶ Ensure that testers are testing scenarios that are of concern to the end user.
- ▶ Enable testers to be able to repeat the steps that caused an error.
- ▶ Examine the levels of testing required during each stage of system development and maintenance, based upon organization size and structure.
- ▶ Develop strategies to implement better approaches to quality assurance in your organization, and clarify the role of the tester in the organization.
- ▶ Ensure that an information system protects data and maintains system functionality.
- ▶ Use diagraming techniques to identify testable conditions from specifications.
- ▶ Identify the appropriate metrics to measure progress and performance in your organization.
- ▶ Determine the appropriate quality initiatives that may be implemented during each phase of the System Development Life Cycle.
- ▶ Refine techniques for estimating the testing effort, and set test objectives.
- ▶ Write test plans that assure the desired amount of test coverage.
- ▶ Assess readiness to acquire test tools and automate the testing process.
- ▶ Identify and explain the six basic security concepts.
- ▶ Establish criteria to start testing and determine when it is completed.

Unit Testing and System Verification

This 2-day workshop promotes a uniform approach to testing with a concentration on testing at the unit level. It addresses the roles of each participant in the software development process, outlining responsibilities, expectations, and mechanisms for measuring the success of the effort. It introduces participants to QA concepts, but concentrates on unit testing and QA techniques for developers. The workshop includes examples of testing methodologies, sample unit test plans, and exercises.

Who Should Attend

This workshop is extremely helpful for project leaders, project managers, business analysts, management professionals, systems analysts, quality assurance professionals, quality control professionals, and information specialists — but the workshop will be an extreme benefit to programmers (developers). Representatives of organizations planning to adopt a development methodology such as Agile, or plan to test in an eXtreme Programming environment, should also consider this workshop.

Workshop Objectives:

- < Clarify the objectives of unit testing and the role of the programmer as the primary tester.
- < Review the levels of unit testing, and write unit test plans.
- < Identify the white box and black box sources for creating unit tests.
- < Develop comprehensive unit test plans and measure the degree of coverage.
- < Establish the relationships between unit and system testers.
- < Work on techniques to estimate the testing effort.
- < Examine quality assurance techniques that will make the development effort more productive.
- < Introduce numerous techniques to identify testable conditions.
- < Discuss specifications, and recommend approaches to improve system requirement gathering and the writing of comprehensive specifications.
- < Establish comprehensive test objectives.
- < Discuss programming standards and the impact on testing requirements.
- < Measure complexity at the specification level.
- < Maximize the development effort, while minimizing the defect rate.
- < Review automated test tools and their role in the testing process.
- < Examine the testing differences in traditional, OO and Web based programming environments.
- < Determine the best testing approach based upon the development methodology.

Ensuring Quality in an Agile Environment

With more and more companies moving to agile, our 2-day testing workshop promotes a jump-start approach to quality assurance in an agile world. The workshop addresses the roles and responsibilities of each participant in the agile software development process. It outlines the optimal mechanisms to measure performance and progress in an agile world. The course emphasizes a practical approach toward using an agile environment to create higher quality products, faster, while addressing the ever-changing needs and resources of an organization. Since agile is adaptable and freeform, businesses often find it challenging to implement agile as a trusted business process. Whether your organization is considering going agile, making the transition, or already operating in an agile mode — this workshop will help smooth the transition, correct the issues, and help avoid future pitfalls. This workshop will help businesses adopt a customized agile process.

In an agile world, testing is iterative and continuous; therefore we must adjust our testing techniques to ensure a balance between flexibility, speed, and coverage. The features and functions are not truly implemented until automated regression tests have been added to support the need for continuous integration and regression testing.

Agile is intended to be supported by the right mix of people, process, and tools. This workshop helps identify the resources that will be required, and how to work with agile when dealing with the realities of geographic separation, multiple teams, and limited resources. The workshop identifies shortcomings in the agile world and shortcuts to making the agile process flourish in a plethora of different testing environments. The agile environment must be supported by test automation, test management, and requirements management to ensure completeness, correctness, and adaptability.

Who Should Attend

Agile methodologies work best when all stakeholders have some level of understanding of the standards, principles and best practices. This workshop is for project managers, developers, programmers, testers, system architects, sponsors, program managers, and customers.

Workshop Objectives:

- ▶ Review testing in an agile methodology.
- ▶ Translate requirements into tests, and demonstrate the value of early testing vs. late testing.
- ▶ Use structured techniques to compute test coverage and determine if it is adequate.
- ▶ Identify success factors for your organization, including FDD and TDD.
- ▶ Be able to present the values and benefits of an agile approach to other stakeholders.
- ▶ Be able to show the customer the importance of involvement in an agile project.
- ▶ Manage or participate in an agile team.
- ▶ Convert from traditional to agile practices without losing confidence or control.
- ▶ Perform the necessary project management and product development activities.
- ▶ Facilitate the agile interactive processes.
- ▶ Effectively communicate the value of quality assurance to management.
- ▶ Develop strategies to implement better approaches to quality assurance in your organization, and clarify the role of the tester in the organization.
- ▶ Use diagramming techniques to identify testable conditions from specifications.
- ▶ Identify the appropriate metrics to measure progress and performance in an agile environment.
- ▶ Refine techniques for estimating the testing effort, and set test objectives.
- ▶ Write test plans that fit in an agile environment and assure the desired amount of test coverage.
- ▶ Assess readiness to acquire test tools and automate the testing process.
- ▶ Create reports to communicate testing progress.
- ▶ Establish criteria to start testing and determine when it is completed.
- ▶ Suggest methods to motivate a testing group in an agile environment.

Testing and Quality Assurance for Managers

This workshop introduces participants to the management side of testing and quality assurance. The workshop begins with an overview of the steps and techniques involved in the testing process. We discuss and offer examples on how to incorporate automated tools without the high cost of implementation. During the workshop we describe and discuss various types of testing and the peaks and pitfalls of each. We will work on team building skills and employee development options for the testing/quality assurance professional.

The workshop addresses the ideas of exploratory vs. scripted testing techniques and how you can incorporate both options in your environment to achieve an acceptable balance of testing. We discuss and demonstrate how to best manage testing changes, both small and large scale modifications and how to introduce those modifications back into the live environment. Lastly the workshop investigates how managers can document the activities in the corporate environment ensuring accountability to other managers and other departments within your organizations. Participants will apply learned techniques to improve how they elicit, analyze, document, manage, maintain and improve the testing process.

Who Should Attend

Participants for this workshop should have some experience with testing environments and the management of personnel. This group would include, but is not limited to, managers, administrators, coordinators, programmers, testers and personnel considering management positions.

Workshop Objectives:

- ▶ Become more familiar with managing the testing process.
- ▶ Create meaningful testing metrics.
- ▶ Establish more efficient ways to use the existing testing resources.
- ▶ Learn how to create an effective customer/development partnership.
- ▶ Elicit the testing requirements from users and other stakeholders using various techniques.
- ▶ Ensure the ability for all testers to recognize the areas of applications at risk and ensure that the appropriate amount of testing is done.
- ▶ Produce more viable testing success criteria.
- ▶ Understand the different types of testing.
- ▶ Be able to plan and establish a successful testing group.
- ▶ Solidify your existing testing team structure ensuring a cohesive balanced team.
- ▶ Establish and realize the ROI for testing.
- ▶ Delineate critical success factors.
- ▶ Ensure the structure of the application area or system under modification.
- ▶ Confidently transition from manual to automated testing.
- ▶ Use rules and structure to test and verify the results.

Root Cause Analysis

Effective Methods of Problem Solving

In this 2-day training workshop attendees will learn how to apply a systematic process for problem solving and breakout thinking. We provide you with advanced skills in root cause analysis problem prevention and continuous improvement. This allows you to identify the characteristics and changes that have contributed to a particular problem — and to fix them. We enable attendees to combine analytical techniques with creative talents.

Who Should Attend

This workshop is extremely helpful for project leaders, project managers, business analysts, programmers, management professionals, systems analysts, quality assurance professionals, quality control professionals, and information specialists. This workshop will benefit anyone whose job involves problem solving.

Workshop Objectives:

- < Overcome the limitations of the human mind to solve complex problems.
- < Logically organize the elements of a problem to analyze each element separately, systematically, and sufficiently.
- < Find the fixes for a given problem by using structured analysis techniques.
- < Make effective decisions.
- < Pinpoint root causes using facts — not guesswork or opinion.
- < Avoid costly trial and error by testing solutions before implementation.
- < Identify and target potential problems before they happen, and develop plans to prevent them.
- < Develop a plan for implementing innovative solutions.
- < Improve confidence in your own judgment.
- < Ask the right questions to get the right answers.
- < Develop a rational systematic approach for attacking problems.
- < Guarantee the quality of a solution to a particular problem.
- < Use probability to analyze the likeliness of accomplishing a certain goal.
- < Develop alternative ideas.
- < Solid decision-making made easy.
- < Tools to help you release your talent by applying it to real-world problems.
- < Develop the ability to use specific problem-solving tools appropriately in different situations.
- < Learn how to build consensus in a group, and improve your persuasion and influence in the workplace.

Critical Thinker's ToolKit

Critical thinking is a vital topic for nearly all occupations in today's companies. An organization can collectively "out-think" its competition if its constituents master the thinking tools taught in this workshop. Critical thinking is the very foundation of good problem-solving skills. The American educational system is good at teaching us "what to think", but is woefully remiss on teaching us the correct way to understand and evaluate subject matter ("how to think").

This 3-day workshop is designed to fill that gap and improve the overall thinking skills of each attendee through the "hands-on brain" use of a distilled set of crucial thinking tools. The ToolKit, once learned, can be applied to any subject area. This workshop will be comprised of 1/3 lecture and 2/3 lab exercises.

Who Should Attend

All employees whose job performance includes effective thinking. This would include senior managers, project managers, business domain experts, technical project leads, business analysts, customer support personnel, and all IT personnel. Non-programmers and programmers alike will gain insight into how they and others think, and how thinking translates into successful decisions and actions.

Workshop Objectives:

- < Discover how you currently think, and what skills need improvement to "round out" your thinking repertoire.
- < Watch yourself think and be able to make adjustments "on the fly" to better give any situation what it most needs.
- < Conduct deep analysis of complex situations using proven CIA tactics.
- < Learn and apply the Critical Thinker's ToolKit, which will improve decision making and execution strategy.
- < Distinguish 'fact' from 'opinion and bias' from 'reason'.
- < Learn to recognize deceptive arguments.
- < Evaluate information sources.
- < Conduct deep analysis of complex problem situations using proven CIA tactics.
- < Come to an understanding of human thought processes ... that lead to the actions ... that make up the processes ... that causes work to flow through a company.
- < Gain facility in using matrices to systematically consider every significant aspect of a process or problem situation.
- < Develop the ability to think in 3D (three dimensions).

Software Project Estimating and Scheduling

This is a 3-day workshop that will enable participants to improve their estimating and scheduling skills and increase confidence in their work.

The focus of the workshop is on practical and effective methods that have been proven from experience with thousands of software projects. This workshop creates an understanding of the underlying nature, dynamics and characteristics of software projects and the way they influence estimating and scheduling.

The workshop shows you how to estimate software projects reliably. It covers practical approaches to estimating as well as various techniques to use in different situations. You are shown how to select the most appropriate estimating technique for a specific situation and how to adjust the formulae and models to best fit your situation.

Who Should Attend

This workshop is extremely helpful for systems project managers, analysts, designers, software developers, and anyone else who may be involved in software estimating or scheduling.

Workshop Objectives:

- < Provide an understanding of the estimating process.
- < Provide an understanding of the scheduling process.
- < Identify various estimating strategies and techniques in use.
- < Develop a working knowledge of some of the techniques using case studies.
- < Provide a forum for discussing ideas, concerns, and estimating issues.
- < Enable participants to start using at least two methods from this workshop.
- < Enable participants to create standard estimating and scheduling practices and techniques in their environment.
- < Enable participants to improve their estimating and scheduling skills.

Essential Skills for the Business Analyst

Eliciting, Documenting, and Analyzing Requirements

Technique is the very foundation of a good business analyst and this workshop teaches techniques. This workshop will help Business Analysts to analyze, document and propose solutions for large and/or complex business areas and to prepare functional specifications. The analysts will be able to gather requirements and record them QUICKLY, ACCURATELY AND COMPLETELY with a battle-proven process. This workshop will significantly reduce the number of post production errors while enhancing the reliability and maintainability of the delivered application.

This 4-day workshop is designed to move a business analyst from guesswork to actual work. The workshop will promote the use of reusable techniques that will strengthen any organizations requirements gathering process. Effective communication is a crucial topic for nearly all occupations. The ability for the business analyst to communicate with business managers and users to gather, understand and document business requirements across affected business areas is an essential skill that needs to be cultivated. This workshop presents a comprehensive process for systematically developing complete and accurate requirements in the shortest possible time. Industry best practices and structured techniques are combined with effective proven modeling methods throughout the workshop. Participants will apply learned techniques to improve how they elicit, analyze, document and manage the requirements gathering process. Problem solving and critical thinking skills are integrated throughout this highly interactive workshop.

Who Should Attend

This workshop is extremely helpful for systems project leaders, business analysts, systems analysts and designers, software engineers, data administrators and systems users who are involved in the client contact and requirements development process. Any employee whose job performance includes effective communications and problem solving would benefit from this workshop. This would include senior managers, project managers, business domain experts, technical project leads, business analysts, customer support personnel, and all IT personnel.

Workshop Objectives:

- < Establish and realize the ROI for requirements.
- < Create an effective customer-development partnership.
- < Delineate critical success factors.
- < Come to an understanding of human thought processes.
- < Watch yourself think and be able to make adjustments "on the fly" to better give any situation what it most needs.
- < Results orientated with good communication and interpersonal skills.
- < Discover how you currently think, and what skills need improvement to "round out" your thinking repertoire. Discover how to set and manage customers' expectations.
- < Distinguish 'fact' from 'opinion and bias' from 'reason'.
- < Learn to recognize deceptive arguments.
- < Eliminate hostile situations that impede corporate progress.
- < Understand the various methods of gathering information.
- < Identify scope boundaries, and develop a high-level view of a project.
- < Identify the structure of the application area or system under study.
- < Analyze, define, and model the business processes, data, and rules.
- < Use rules and structure to test the results.
- < Create a clear, complete and accurate requirements specification.
- < Understand how the requirements specification components support the design.
- < End to end experience of the project lifecycle.