Description: eLearning Seminar "Software Inspections and Peer Reviews"

Description: Effective peer reviews of all types of work products are essential if software development organizations are to reduce their cost of producing software. Formal inspections of requirements specifications, designs, source code, project plans, and other work products are a proven means for finding errors and improving the quality of software products. This course shows software practitioners how to effectively apply both inspections and several types of less formal reviews to software products. The Fagan inspection process and roles are described in detail. Besides the mechanical aspects, the interpersonal and social aspects – the soft side – of peer reviews are also addressed. Many tips are provided for establishing a success peer review program. A practice inspection session will help students learn to conduct effective inspections on their own projects.

Objectives: Upon completion of this course, the student will be able to:

- Explain why peer reviews add value at all stages of software development.
- Describe the differences between formal and informal reviews.
- List the participants in an inspection and describe their roles.
- Describe the activities performed at each stage in an inspection.
- Summarize the guidelines for conducting a successful review.
- Select an appropriate review strategy for each work product.
- Describe the essential cultural and interpersonal aspects of peer reviews.
- Know how to collect and use inspection data.
- Participate in effective peer reviews and inspections.

Audience: This course will be useful to software developers, managers, quality engineers, and others who wish to learn how to systematically search for defects in software work products of any kind. Non-software people who review requirements documents have also found the seminar to be easy to understand. The techniques described can be used with any kind of work products, not just software-related items.

Format: Blend of lecture, class discussion, video, and a practice inspection.

Components: 9 course modules
130 slides
6 hours of audio presentation
4 practice sessions
7 quizzes
numerous articles, checklists, forms, spreadsheets, and other work aids

Outline: eLearning Seminar "Software Inspections and Peer Reviews"

Module 1: Objectives and Agenda (15 minutes)

Module 2: Introduction to Software Peer Reviews (70 minutes)
    A. Definition and objectives of reviews
    B. Practice session: Why don't people do reviews now?
    C. Cultural barriers to peer reviews
    D. Building reviews into the project plan
    E. Practice session: What kind of work products can be reviewed?
    F. Relative cost of fixing defects depending on when found
    G. Reported benefits of inspections
    H. Peer reviews and process improvement models
    I. Effectiveness of testing vs. inspection
    J. Quiz

Module 3: Software Inspection Overview (40 minutes)
    A. Formal and informal peer reviews
    B. Peer review formality spectrum
    C. Who should review various work products
    D. History of software inspections
    E. Inspection entry criteria
    F. Practice session: Entry criteria for a requirements specification inspection
    G. Inspection participant roles
    H. Managers and observers
    I. Quiz

Module 4: Software Inspection Process (70 minutes)
    A. Inspection process stages
    B. When to inspect code
    C. Inspection rates
    D. The inspection package
    E. Preparation techniques
    F. Defect checklists
    G. Using inspection forms: Typo List, Issue Log, Inspection Summary Report
    H. Inspection exit criteria
    I. Quiz

Module 5: The Inspection Moderator Role (35 minutes)
    A. Practice session: Characteristics of effective moderators
    B. Moderator roles and responsibilities in each inspection stage
    C. Inspection lessons learned questionnaire
    D. Inspection moderation traps to avoid
    E. Quiz

Module 6: Keeping Inspection Records (25 minutes)
    A. Inspection data items and metrics
    B. Spreadsheets for storing and analyzing inspection data
    C. Correlating inspection metrics
    D. Inspections and statistical process control

Module 7: Other Peer Review Methods (25 minutes)
    A. Team reviews, walkthroughs, pair programming, peer deskchecks, and passarounds
    B. Pluses and minuses of formal and informal reviews
    C. Selecting an appropriate review method
    D. Quiz

Module 8: The Soft Side of Peer Reviews (25 minutes)
    A. Overcoming resistance to reviews
    B. Benefits different team members receive from peer reviews
    C. Egoless programming
    D. Ways to present issues during a review
    E. Multicultural peer reviews
    F. Quiz

Module 9: Making Peer Reviews Work for You (45 minutes)
    A. Installing reviews into four different organizational cultures
    B. The Peer Review Process Owner role
    C. The Peer Review Coordinator role
    D. Guiding principles for effective reviews
    E. Critical success factors for peer reviews
    F. 10 Signs of management commitment
    G. Documenting your organization's peer review process
    H. Critical success factors for reviews
    I. Practice inspection
    J. Inspection best practices
    K. Peer review traps to avoid
    L. Quiz