# Reviews and Audits
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# Outline

- Reviews in the lifecycle
- Types of reviews
- How to conduct review

# General Knowledge

- Most reviews can be used for software or systems
- Scope varies
  - Doesn't affect procedures
- Assess progress and quality

# What is a Review?

- "A process or meeting during which a work product, or a set of work products, is presented to project personnel, managers, users, customers, and other interested parties for comment or approval. Types include code review, design review, formal qualification review, requirements review, and test readiness review."

# Review Forms

- Formal/Informal Reviews
- Internal Management Reviews
- Peer Reviews
  - Walkthrough
  - Inspection
  - Round-robin

# What is a Formal Review?

- Usually required by contract
- Usually on government projects

- Freedman and Weinberg
  - Written report on the status of product reviewed
  - Active and open participation according to rules
  - Quality of report is responsibility of all participants

# Application in the Life Cycle

- Figure from the book
  - Volume 2 pg 90

# Management Reviews

- Formal evaluation of project-level plan or status

- Objective
  - Communicate progress
  - Coordinate decision making
  - Provide recommendations
    - Measurement of progress
    - Project direction
    - Allocation of resources

# Management Reviews Continued

- Roles
  - Leader
    - Administrative tasks
  - Reporter
    - Documentation available before meeting
    - Documents the meeting
  - Team Member

# Management Reviews Continued

- When to hold a management review
  - Stated in planning documentation
  - For new development or maintenance
  - Completion of project phase
  - For a specific deliverable
  - As needed

# Management Reviews Continued

- Preparation Materials
  - Statement of Objectives
  - Current schedule, resources, and budget
  - Reports
  - Software deliverable status

# Management Reviews Continued

- Agenda
  - Leader schedules meeting and prepares materials
  - Optional review session scheduled
  - Action items assigned
  - Complete when all issues from statement of objectives are addressed

# Management Reviews Continued

- Output
  - Management Review Report
    - Team
    - Inputs
    - Objectives
    - Action Items
    - Project status and issues
    - Recommendations

# Walkthroughs

- Evaluate a software element
  - Specifications
- Statement of Objectives is software specific
- Objective
  - Detect Defects
  - Examine alternatives
  - Collect Feedback

# Walkthroughs Continued

- Roles
  - Leader
    - Administrative tasks
    - Documentation available before meeting
    - Documents the meeting
    - Usually the author
  - Scribe
    - Records comments
  - Team Member
    - Reviews beforehand

# Walkthroughs Continued

- When to hold a walkthrough
  - Stated in planning documentation
  - Completion of software element
  - As needed

# Walkthroughs Continued

- Planning
  - Identify team
  - Schedule meeting
  - Distribute materials
- Preparation
  - Participants review beforehand

# Walkthroughs Continued

- Examination
  - Overview by author
  - "Walk through" the software element
  - Members comment
  - Scribe records

# Walkthroughs Continued

- Output
  - Walkthrough report
    - Team
    - Software Element
    - Statement of Objectives
    - List of defects, suggestions
    - Follow-up walkthrough (optional)

# Formal Inspections

- Similar to a walkthrough
- Objective
  - Detect common defects
    - Against a check list
    - Used for statistics
      - Evaluation, experience base

# Formal Inspections Continued

- Roles
  - Moderator
    - Technical expertise
    - Outside the project
  - Participants
    - Peers
    - Inside the project
  - Preparer/Developer
  - Recorder

# Formal Inspections Continued

- When to hold a formal inspection
  - Stated in planning documentation
  - Throughout development phase
    - Design, Implementation, etc
  - As needed

# Formal Inspections Continued

- Planning is similar to walkthrough
- Agenda
  - Moderator walks through the software element
  - Peers comment
  - Recorder records
    - Check list
      - Common types of defects
        » Wrongful use of data
        » Faults in declarations
        » Faults in computation
        » Faults in control flow
        » Faults in interfaces

# Formal Inspections Continued

- Output
  - List of defects categorized by severity
- Moderator checks fixes
- Reinspection may be scheduled

# Audits

- Definition
  - "An independent examination of a work product or set of work products"
  - Tests compliance
    - Specifications
    - Standards
    - Contractual Agreements

# Audits Continued

- Types
  - Functional Configuration Audit (FCA)
    - Evaluating functionality
  - Physical Configuration Audit (PCA)
    - Evaluation configuration item
  - Quality Assurance Audits
  - Configuration Management Audits

# Audits Continued

- Checks that product development and process execution is done according to standards and specifications

- Elements evaluated
  - Software Elements
  - Processes for Software Element production
  - Projects
  - Quality Programs

# Audits Continued

- Roles
  - Audit Team Leader
    - Directs audit
    - Coordinates audit report
  - Audit Team

# Audits Continued

- When to audit
  - Project milestone met (plans)
  - External party requirement
  - By request

# Audits Continued

- Audit Plan
  - Project processes to examined
  - Software to be examined
  - Reporting Requirements
  - Required Follow-up activities
  - Procedures to complete audit
  - Objective audit criteria
  - Audit procedures and check list
  - Audit personnel requirements
  - Organizations involved
  - Planning of overview session (optional)

# Audits Continued

- Audit Team Preparation
  - Understand
    - Organization
    - Products
    - Processes
    - Objective audit criteria
  - Prepare
    - Audit report
    - Plan

# Audits Continued

- Audit Team Leader Arrangements
  - Team orientation
  - Interview facilities
  - Interviews
  - Resources required
  - Software elements

# Audits Continued

- Exit Criteria
  - All elements examined
  - Findings presented
  - Audit report prepared and submitted
  - Recommendation report prepared and submitted
  - Follow-up actions completed

# Audits Continued

- Output
  - Audit Report
    - Identification
      - Title, organizations, date
    - Scope
      - Criteria, processes
    - Conclusions
      - Summary of findings
    - Synopsis
      - Listing of findings
    - Follow-up
  - Recommendations

# Inspections

- Limited focus audit
- Non interactive

# My Opinion

- Good resource, slow reading
- General
  - Positive
  - Negative
- Terminology

# Outline

- Reviews in the lifecycle
- Types of reviews
- How to conduct review

Questions?