

Presentation 8

Reviews

- **Review objectives**
- **Formal design reviews (FDRs)**
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 - The FDR session
 - Post-review activities
- **Peer reviews (inspections and walkthroughs)**
 - Participants
 - Preparations
 - The FDR session
 - Post-review activities
 - Peer review coverage
- **Comparison of peer reviews methods**
- **Expert opinions**

Review objectives

Direct objectives

- a. **To detect analysis and design errors as well as subjects where corrections, changes and completions are required**
- b. **To identify new risks likely to affect the project.**
- c. **To locate deviations from templates, style procedures and conventions.**
- d. **To approve the analysis or design product. Approval allows the team to continue on to the next development phase.**

Indirect objectives

- a. **To provide an informal meeting place for exchange of professional knowledge about methods, tools and techniques.**
- b. **To record analysis and design errors that will serve as a basis for future corrective actions.**

Some common formal design reviews (DRs)

DPR – Development Plan Review

SRSR – Software Requirement Specification Review

PDR – Preliminary Design Review

DDR – Detailed Design Review

DBDR – Data Base Design Review

TPR – Test Plan Review

STPR – Software Test Procedure Review

VDR – Version Description Review

OMR – Operator Manual Review

SMR – Support Manual Review

TRR – Test Readiness Review

PRR – Product Release Review

IPR – Installation Plan Review

Characteristics of a DR leader

- * **Knowledge and experience in development of projects of the type reviewed.**
Preliminary acquaintance with the current project is not necessary.
- * **Seniority at a level similar if not higher than that of the project leader.**
- * **A good relationship with the project leader and his team.**
- * **A position external the project team**

The Agenda of a DR session

- a. **A short presentation of the design document.**
- b. **Comments made by members of the review team.**
- c. **Verification and validation of comments is discussed to determine the required action items (corrections, changes and additions).**
- d. **Decisions about the design product (document), which determines the project's progress:**
 - *Full approval.*
 - *Partial approval.*
 - *Denial of approval.*

DR post-review activities

a. Preparation of the DR report.

The report's major sections:

- *A summary of the review discussions.*
- *The decision about continuation of the project.*
- *A full list of the required action items — corrections, changes and additions. For each action item, completion date and project team member responsible are listed.*
- *The name(s) of the review team member(s) assigned to follow up.*

b. Follow up performance of the corrections and to examine the corrected sections.

Pressman's 13 golden guidelines for successful DR - 1

Design Review Infrastructure

- **Develop checklists for common types of design documents.**
- **Train senior professionals serve as a reservoir for DR teams.**
- **Periodically analyze past DR effectiveness.**
- **Schedule the DRs as part of the project plan.**

The Design Review Team

- **Review teams size should be limited, with 3–5 members being the optimum.**

Pressman's 13 golden guidelines for successful DR - 2

The Design Review Session

- Discuss professional issues in a constructive way refraining from personalizing the issues.
- Keep to the review agenda.
- Focus on detection of defects by verifying and validating the participants' comments. Refrain from discussing possible solutions.
- In cases of disagreement about an error - end the debate by noting the issue and shifting its discussion to another forum.
- Properly document the discussed comments, and the results of their verification and validation.
- The duration of a review session should not exceed two hours.

Post-Review Activities

- Prepare the review report, including the action items
- Establish follow-up to ensure the satisfactory performance of all the list of action items

Participants of peer reviews

Inspection

- Review leader
- The author
- Specialized professionals:
 - Designer
 - Coder or implementer
 - Tester

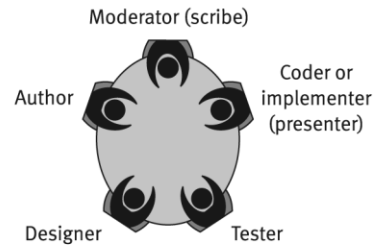
Walkthrough

- Review leader
- The author
- Specialized professionals:
 - Standards enforcer
 - Maintenance expert
 - User representative

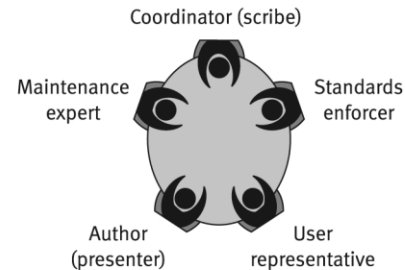
Inspection vs. Walkthrough

PARTICIPANTS

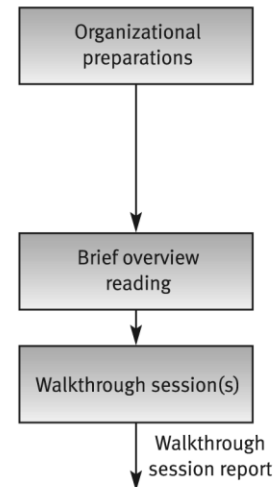
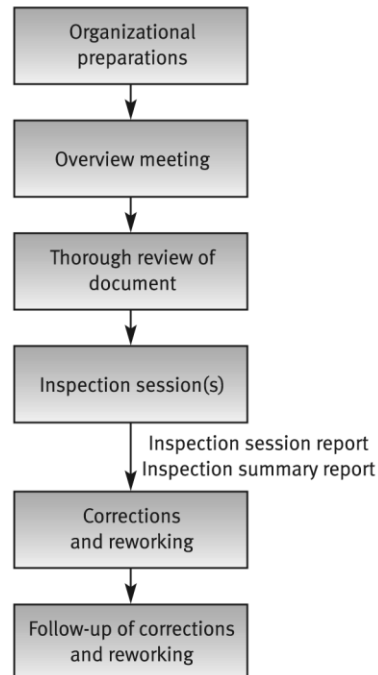
Inspection



Walkthrough



PROCESS



Code inspection effectiveness at Fujitso (Cusumano)

Year	Defect detection method			Defects per 1000 lines of maintained code
	Test %	Design review %	Code inspection %	
1977	85	---	15	0.19
1978	80	5	15	0.13
1979	70	10	20	0.06
1980	60	15	25	0.05
1981	40	30	30	0.04
1982	30	40	30	0.02

Sections recommended to be included in or omitted from peer reviews

Sections recommended for inclusion

- Sections of complicated logic
- Critical sections, where defects severely damage essential system capability
- Sections dealing with new environments
- Sections designed by new or inexperienced team members

Sections recommended for omission

- “Straightforward” sections (no complications)
- Sections of a type already reviewed by the team in similar past projects
- Sections that, if faulty, are not expected to effect functionality
- Reused design and code
- Repeated parts of the design and code

Comparison of review methodologies - Process of review

Properties	Design review	Inspection	Walkthrough
Overview meeting	No	Yes	No
Participant's preparations	Yes - thorough	Yes - thorough	Yes - brief
Review session	Yes	Yes	Yes
Follow-up of corrections	Yes	Yes	No
Formal training of participants	No	Yes	No
Participant's use of checklists	No	Yes	No
Error-related data collection	Not formally required	Formally required	Not formally required
Review documentation	Formal design review report	1) Inspection session findings report 2) Inspection session summary report	

Situations beneficial for expert's participation in reviews

- **Insufficient in-house professional capabilities in a specialized area.**
- **Temporary lack of in-house professionals for review team.**
- **Indecisiveness caused by major disagreements among the organization's senior professionals.**
- **In small organizations, where the number of suitable candidates for a review team is insufficient.**