Formal Design Reviews

- Associated with each of documentation phases.

- Evaluate with respect to:
  
  Customer requirements
  Prescribed standards and practices
  Contractual requirements
  Tradeoff priorities
  Results of previous phases
  etc.

- After review, released to configuration control and becomes baseline.
Structured Walkthroughs

- “Egoless programming” (Weinberg, *The Psychology of Computer Programming*)

- Reviewee and 3-5 reviewers

- Customers and users should be included. Managers should not.

- Goal is to discover and note problems. Problems not resolved in walkthrough session.
  - Followup meeting or memo to inform reviewers of actions taken.
  - Major problems only.

- Successful use dependent on establishing a positive, nonthreatening atmosphere.
  - Moderator should receive training.
  - Must not be used as vehicles for employee evaluation.
Benefits of Walkthroughs

- Errors caught at earliest possible time.
- Greatly improved software quality.
- Project communication improved.
- Software easier to maintain.
- Better project control.
- Quicker integration of new personnel.
- Increased programmer expertise.
- Less disruption with personnel leave.
- Switch emphasis from individual contemplation to clear, precise communication with others.
- Enhanced employee morale: social interaction, involvement.
Software Inspections

- Started by IBM in 1972 (Fagan)
- Process driven by a checklist of likely errors
  - Build checklists through experience and feedback.
  - Some companies consider checklists proprietary.
- Performed after design complete and after coding complete.
- Last about 2 hours, cover about 100 statements per hour.

Evaluation of walkthroughs and inspections:
- Find about 70-80% of errors.
- Most errors found before unit testing.