Software Quality Assurance
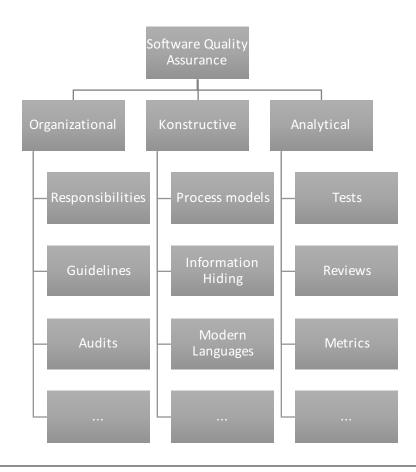# Reviews

Pingo-Time

- Name different quality assurance activities!

- Pingo: http://pingo.upb.de/100663

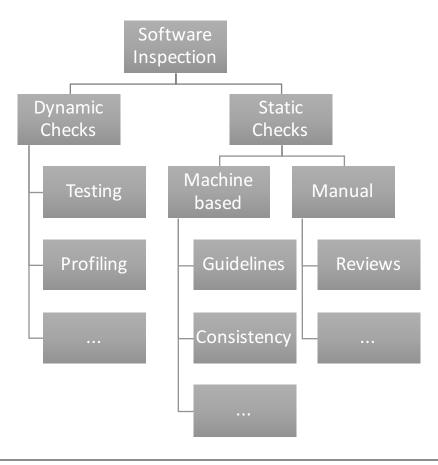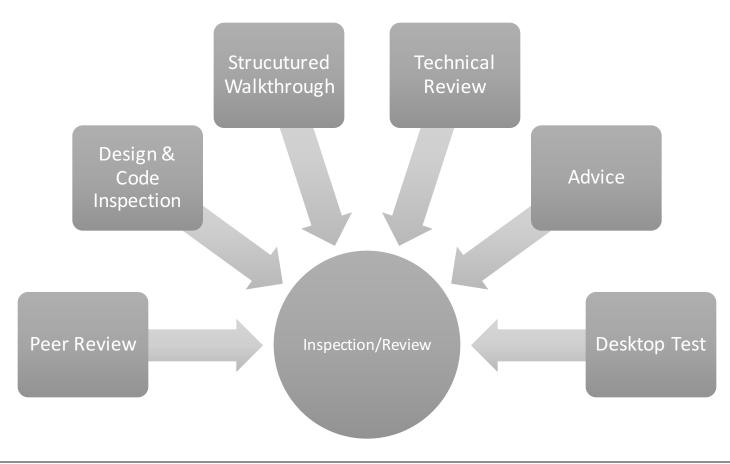# Software Quality Assurance

Inspection/Reviews

```
                    ┌──────────────┐
                    │   Software   │
                    │  Inspection  │
                    └──────┬───────┘
              ┌────────────┴────────────┐
        ┌─────┴──────┐           ┌──────┴──────┐
        │  Dynamic   │           │   Static    │
        │   Checks   │           │   Checks    │
        └─────┬──────┘           └──────┬──────┘
              │              ┌──────────┴──────────┐
        ┌─────┴──────┐  ┌────┴─────┐        ┌──────┴──────┐
        │  Testing   │  │ Machine  │        │   Manual    │
        │            │  │  based   │        │             │
        └────────────┘  └────┬─────┘        └──────┬──────┘
        ┌────────────┐  ┌─────┴──────┐       ┌─────┴──────┐
        │  Profiling │  │ Guidelines │       │  Reviews   │
        └────────────┘  └────────────┘       └────────────┘
        ┌────────────┐  ┌────────────┐       ┌────────────┐
        │    ...     │  │ Consistency│       │    ...     │
        └────────────┘  └────┬───────┘       └────────────┘
                        ┌────┴───────┐
                        │    ...     │
                        └────────────┘
```

Classification: Reviews

Roles for a review

Moderator	Author	Scribe
• Plans and leads a review • Selects team members • Is knowledgable and neutral	• Provides subject under review • Ensures subject's quality	• Documents all issues • Creates review report

Roles for a review

- Knows how to judge subject
- Has to prepare himself
- Min. 2, max. 5 reviewers per team

Reviewer

- Moderator, Reviewer, Authors, Scribe
- Judge subject under study

Review-Team

- Asks for review
- Does resource planning
- Participates in a review
- Takes final decision on further actions

Manager

Process

Preparation

- Reviewers have to prepare thouroughly
- Moderator ensures timing
- Reviewers check specific aspects

Review session

- Moderator moderates review meeting
- Stepwise inspection of the subject
- Reviewers report on their remarks
- Manager gets consolidated report

Documents for Reviews

- Requirements
- Acceptance tests
- Manual

User/Client

- System design
- Subsystem design

Interfaces

- New technologies
- Results of novice team members

High risk

Documents for Reviews

- Logging
- Database interface
- Failure handling

Zentral artefacts

- Performance critical
- High memory consumption
- High failure impacts

High quality parts

Process

- Preconditions
  - Easy to comprehend program and programming language
  - Sufficient code quality (comments, variable names, etc.)
  - Design documents available
- Tasks
  - Discussion with non-authors
  - Use of checklists
  - Protocol of issues
  - Removal of detected issues

Example: Check list questions

- Data handling
  - Use of variable without initialisation?
  - Are array accesses in array bounds?
  - Are there dangling references?
  - ...

- Computations
  - Computations with different data types/loss of precision?
  - Over- or underruns of variables?
  - Division by zero?
  - ...

Example: Check list questions

- Data declarations
  - All variables are declared?
  - All array are initialised?
  - Does memory allocation match data type?
  - ...
- Comparision
  - Comparison between inkonsistent variables?
  - Are boolean expressions correct?
  - Priority of operators?
  - ...

Example: Check list questions

- Control flow
  - Does the program terminate?
  - All loops terminate?
  - Do loops exist which will never be entered?
  - ...
- IO
  - All files opened and closed correctly?
  - All IO errors handled?
  - EOF correctly handled?
  - ...