NASA/SEL
Reading Experiment

Part 1

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READING EXPERIMENT

Motivation

Reading is the most critical analytic technique we have for assessing software documents

Reading can be performed

- on documents related to the software
- as soon as they are written
- without machine support

Reading has been shown, in limited contexts, to be more effective than testing in uncovering faults, and also cheaper

Yet there have been very few “techniques” developed for reading as compared with testing

Reading Techniques

Existing reading techniques

- *Reading by stepwise abstraction* for code and PDL level documents
- *Reading using checklists* for higher level documents, such as requirements, functional specification and design

Experiments

We are planning a series of experiments to see if we can develop techniques for improving the effectiveness of reading

We are beginning with techniques for the reading of high level documents such as requirements and functional specifications

READING EXPERIMENT

Goal

- **Goal for each participant**

  ANALYZE the documents provided
  FOR THE PURPOSE OF evaluation
  WITH RESPECT TO defect detection
  FROM THE POINT OF VIEW OF reviewer
  IN THE FOLLOWING CONTEXT: your experience

Result: defect report forms

You are to use the approach you normally would use to read and review the document, and fill out the forms provided

READING EXPERIMENT

Design of the Experiment

	Group 1	Group 2	
Standard approach	NASA doc. A	NASA doc. B	**First day**
Standard approach	ATM network	Parking garage	
			Training
Perspective-based	Parking garage	ATM network	**Second day**
Perspective-based	NASA doc. B	NASA doc. A	

READING EXPERIMENT

Mechanics

First day:

- Introductory material
- Discussion of the forms
- Sample problem: NASA document
- Read and review NASA document
- Sample problem: Video store
- Read and review generic document

Second day:

- Training in Perspective-based reading
- Read and review with PBR

Please do not discuss the problems or results with anyone!