Scenario How To

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Abstract

Good designers keep multiple alternatives open in parallel. This improves the specification and design quality. Scenarios can be used to cope with these alternatives and as a means for communication with stakeholders.
content of this presentation

Decision making

Multiple propositions

Scenarios
Decision Making Process

1. Problem understanding
2. Analysis
3. Decision
4. Monitor, verify, validate

- vague problem statement
- conflicting other decision
- invalidated solution
- insufficient data
- no satisfying solution

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ADMdecisionFlow
1. Problem understanding by exploration and simple models

2. Analysis by
   + exploring multiple propositions (specification + design proposals)
   + exploring decision criteria (by evaluation of proposition feedback)
   + assessment of propositions against criteria

3. Decision by
   + review and agree on analysis
   + communicate and document

4. Monitor, verify, validate by
   + measurements and testing
   + assessment of other decisions
### Example of Multiple Propositions

<table>
<thead>
<tr>
<th>Proposition 1</th>
<th>Proposition 2</th>
<th>Proposition 3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>throughput</strong></td>
<td>20 p/m</td>
<td>25 p/m</td>
</tr>
<tr>
<td><strong>cost</strong></td>
<td>5 k$</td>
<td>7 k$</td>
</tr>
<tr>
<td><strong>safety</strong></td>
<td>high-performance sensor high-speed moves additional pipelining</td>
<td>high-performance sensor high-speed moves</td>
</tr>
<tr>
<td></td>
<td>350 ns</td>
<td>300 ns</td>
</tr>
<tr>
<td></td>
<td>9 m/s</td>
<td>10 m/s</td>
</tr>
</tbody>
</table>

*low cost and performance 1*

*low cost and performance 2*

*high cost and performance*
Recursive and concurrent application of flow

1. Problem understanding
2. Analysis
3. Decision
4. Monitor, verify, validate

System level
Subsystem level
Component level
Atomic level

Legend:
- Decision flow
- Analysis flow

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TORrecursion
Graph of Decisions and Alternatives

Legend:
- Past decision
- Most probable decision
- Potential alternative
- Less probable alternative

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Different Types of Decisions

Understanding Why
Describing What
Guiding How

- Basic principles
- Requirements
- Architecture rules
  implementation choices
  f.i. technology
Elements of a Scenario

- scenario: <clear title>
- story
- case
- design
- key specification and design decisions
Summary of Scenarios

Exploration and analysis require multiple propositions.

Architects continuously work with multiple alternatives.

Scenarios have a clear title, story, use case and design.

Scenarios are differentiated by key specifications and design decisions.