The SAAM

- Kazman, 1993

Software Design Reviews Using the
Software Architecture Analysis Method

SAAM

Scenario based Evaluation Technique

Focus on modifiability, but can be used on other QAs

One of the first methods

Software Architecture Analysis Method

1 Present the SAAM

2 Brainstorm and prioritize scenarios

3 Describe candidate architecture(s)

4 Classify scenarios as direct or indirect

5 Perform scenario evaluation

6 Reveal scenario interactions

7 Generate overall evaluation

Software Architecture Analysis Method

1 | **Present the SAAM**

2 | **Develop and prioritize scenarios**

3 | **Describe candidate architecture(s)**

4 | **Classify scenarios as direct or indirect**

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Classify Scenarios

Agenda	The Scenarios are classified into two categories. 1. **Direct scenarios** are those that can be executed by the system without modification. 2. **Indirect scenarios** are those that require modifications to the system.
Time	3:30 pm to 5:00 Pm
Duration	90 minutes
Stake holders	Evaluation Team, Customer Representatives, Architecture Team
Goals	The classification depends upon both the scenario and the architecture.

Classify Scenarios

Stakeholder	Scenario	Scenario Description	Direct/ Indirect
User	U1	…	Indirect
	U2	…	Direct
Maintainer	M1	…	Indirect
	M2	…	Direct
Administrator	A1	…	
	A2	…	

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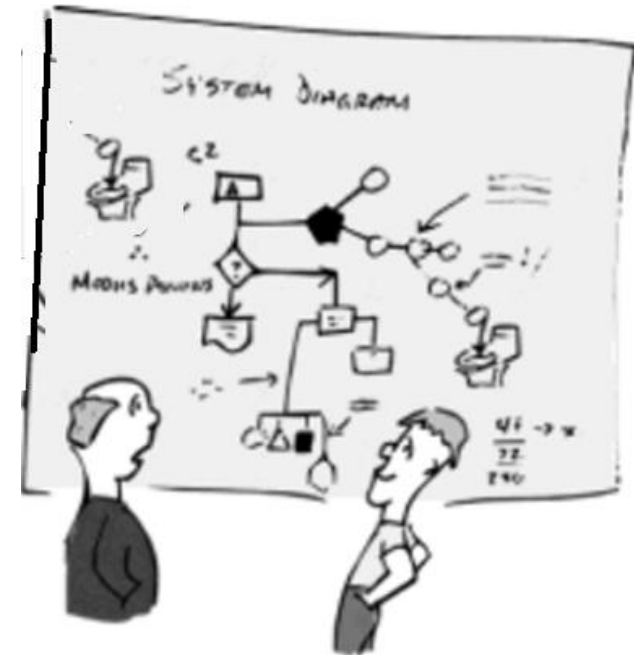
5 **Perform scenario evaluation**

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Perform Scenario Evaluation

Agenda	Architect demonstrates how the architecture executes the scenarios. (Map Scenarios to Architecture)
Time	8 :15 Am to 12:00 Am
Stake holders	Evaluation Team, Customer Representatives, Architecture Team
Goals	For each indirect scenario 1. Identify the components 2. Data connections 3. Control connections 4. Interfaces added, deleted, modified 5. Estimate the difficulty of modification

A monolithic system will score well on this step, but not in next step.

Perform Scenario Evaluation

Stakeholder	Scenario	Scenario Description	Direct/ Indirect	Architecture Changes	Number of changed/ Added Comp	Effort
User	U1	…	Indirect	Modifications to A & B Components	2	Person Month
				-		
M… ne…			…rect	Modifications to A,B,C,D & E Components		…erson …ys
	M2	…	Direct	-	0	0
Admin	A1	…				-
	A2	…				-

Difficulty of modification is elicited from the architect and is based on the number of components to be modified and the effect of the modifications.

For indirect scenarios we gauge the order of difficulty of each change

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Reveal Scenario Interactions

Agenda	When two or more indirect scenarios affect the same components they are said to interact in that component.
Time	1:00 Pm to 2:30 Pm
Stake holders	Evaluation Team, Customer Representatives, Architecture Team
Goals	High interaction of unrelated scenarios indicates Trouble Spot. • Poor separation of concerns (low-cohesion). • Poor functional decomposition The amount of scenario interaction is related to metrics such as structural Complexity, coupling and cohesion.

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Generate Overall Evaluation

Agenda	Scenarios and scenario interactions are weighted w.r.t to their relative importance.
Time	2:30 pm to 3:30 Pm
Stake holders	Evaluation Team, Customer Representatives, Architecture Team
Goals	The weighting can be used to select between architecture Candidates.

Then the organization must decide as to whether the design is acceptable "as is" or if it must be modified. |

Generate Overall Evaluation

Stakeholder	Scenario	Scenario Description	Architecture 1	Architecture 2
User	U1	…	0	0
	U2	…	-	+
Maintainer	M1	…	-	+
	M2	…	+	-
Admin	A1	…	+	-
	A2	…	0	0