

CSCI 360  
MW 2:00-3:15pm  
Professor Bowring  
HMWK #7  
February 14, 2007

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#### Problems

1) Below is a list of quality attributes important for the MDT program:

- Reliability
- Maintainability
- Availability

2)

a) Here is our initial list of scenarios for each profile (brainstorm):

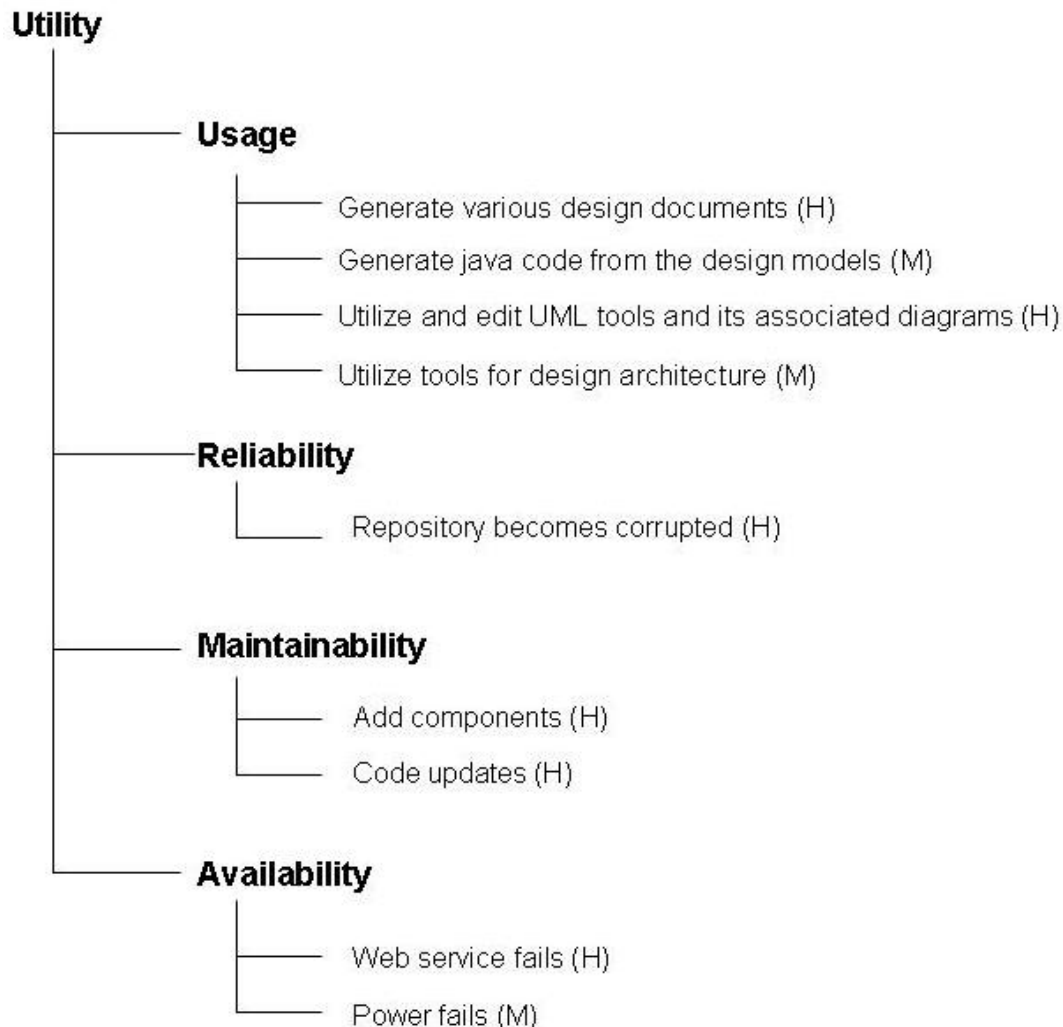
- Usage
  - Generate SAD
  - Generate DDD
  - Generate DD
  - Generate Java code from the design models
  - Utilize UML use case diagram tool
  - Utilize use case descriptions
  - Utilize Box-and-line drawings
  - Utilize textual interface specifications
  - Utilize UML class diagrams
  - Utilize UML state diagrams
  - Utilize operation specifications
  - Utilize textual design rationale
  - Utilize decision matrices
  - Utilize glossary
  - Configure design of individual design models
  - Link model elements
- Reliability
  - Repository becomes corrupted (takes care of linking issues, data loss, etc)
  - Browser fails
  - Configuration control cannot access data
- Maintainability/Modifiability
  - Adding interfaces between components
  - Adding data (update versions)
  - Update features (add tools/functionality)
  - Reconfigure webserver
  - Change format of data (from XML to ...)
- Availability
  - Web service fails
  - Power fails (client or server side)

b) Rationalized list of scenarios for each profile with weights

- Usage
  - Generate various design documents (H)
  - Generate Java code from the design models (M)
  - Utilize and edit UML tools and its associated diagrams (H)
  - Utilize tools for design architecture (M)
- Reliability
  - Repository becomes corrupted (takes care of linking issues, data loss, etc) (H)
- Maintainability/Modifiability
  - Add components (H)
  - Code updates (H)
- Availability
  - Web service fails (H)
  - Power fails (client or server side) (M)

Note: Similar scenarios from the brainstorm were combined and/or arranged into groups.

c) Here is the utility tree modeling the results from (b):



3) Add component- A developer modifies the MDT source code and design documents so that MDT supports a new type of component. The developer completes the process in two days.

4) The candidate architecture is a five out of a five point scale for supporting the scenario. The candidate architecture seems to be modular enough and simple enough to support additional components being added to the system.

### **Assessment**

- 1) We don't see any way that we could improve our team's performance for next time.
- 2) We believe the instructor could improve this activity by discussing it after it is graded and returned back to the students.