Concrete Quality Attribute Scenarios

Prof. Dr. Gabriele Schmidt

Note:

The scenarios aren't related to the general scenarios (according to [Bass et.al. 04, Chapter 4])

The customer's priorities are given with "less important", "important" and "very important".
Before starting the description of the quality attribute scenarios the project task "Add Station" is described as a use case. This should help to better understand this requirement. Additionally it should help to distinguish use cases (requirements for the functionality) and quality attribute scenarios (quality requirements).

Use Case: Add Station

Name of the use case	Add Station
Short description	When a new station was added to the system, this is indicated on the GUI.
Primary actors	System (Logic)
Secondary actors	-
Stakeholder	-
Trigger	A new station is available
Precondition	The System is running in normal mode.
Result	The new station will be displayed and values may be entered.
Postcondition	New station is integrated like any other station in the overall system
Basic flow	1. The system creates randomly a new station. 2. The system is notifying all display components of the new station 3. The user can select new station and 4. can use it.
Extensions:	-

1 Concrete Quality Attribute Scenario: Usability

Usability variance I

Source	After adding a new value a User wants to
Stimulus	estimate the variance
Environment	at runtime.
Artifact	Presentation, system
Response	Variance is highlighted so that
Response Measure	the user can detect deviations and their type (positive or negative) in < 0.5 seconds.

Priority: very important

Usability variance II

Source	A user
Stimulus	wants to detect the type of deviation (positive or negative) and to assess the amount of deviation easily
Environment	at runtime
Artifact	Presentation, system
Response	The user can view the variance and assess its nature of the deviation and / or amount of deviation
Response Measure	in which he can choose between at least two presentations (e. g. highlighting values, diagrams ...).

Priority: very important

Usability station

Source	The systems
Stimulus	signals a new station
Environment	at runtime.
Artifact	System, presentation
Response	The user can view the new station / use it
Response Measure	within <1 second.

Priority: very important

2   Concrete Quality Attribute Scenario: Modifiability

Modifiability GUI I

Source	The developer or maintenance developers
Stimulus	whishes to create a new GUI
Environment	during implementation phase, maintenance phase.
Artifact	Presentation and interaction
Response	The new GUI is developed, documented, tested and ready for use
Response Measure	without changing the logic within one day.

Priority: very important

Modifiability GUI II

Source	The Developer or maintenance developer
Stimulus	wants to deploy a new GUI
Environment	at runtime
Artifact	System
Response	The new GUI can be used
Response Measure	within half an hour. The system continues to operate normally. There is no impact to other GUIs.

Priority: very important

Modifiability logic

Source	The developer or maintenance developers
Stimulus	wants to implement and add a new functionality
Environment	during implementation phase, maintenance phase.
Artifact	System logic
Response	The new functionality is developed, documented, tested and ready for use
Response Measure	within one day. There is no impact to the GUI.

Priority: very important

3   Concrete Quality Attribute Scenario: Availability

Availability GUI

Stimulus	A GUI has failed
Source	by operator, software errors or hardware failure
Environment	during normal operation
Artifact	Presentation and interaction
Response	GUI is available again
Response Measure	within one business day. The system continues to operate normally and other GUIs can be used.

Priority: important

Availability System

Stimulus	The system has failed
Source	by operator, software errors or hardware failure
Environment	during normal operation
Artifact	Logic
Response	The system is available again
Response Measure	within half a day.

Priority: less important

4   Concrete Quality Attribute Scenario: Performance

Performance Station

Source	The systems
Stimulus	adds a new station
Environment	during normal operation with 200 user
Artifact	System, GUI
Response	Users are notified
Response Measure	within <5 seconds.

Priority: important

Performance variance

Source	A user
Stimulus	Adds a values
Environment	during normal operation with 200 user
Artifact	System, GUI
Response	The variance is presented
Response Measure	within < 0.5 seconds. All presentations are up to date.

Priority: very important

5 Concrete Quality Attribute Scenario: Testability

Testability GUI

Source	The developer or maintenance developers
Stimulus	whishes to test a new GUI
Environment	during implementation phase, maintenance phase.
Artifact	GUI.
Response	The developer can develop unit tests for the GUI and run the tests
Response Measure	within 1 day. The tests can be run automatically,

Priority: very important