Lecture 9: Quality attributes 2. Tactics.

Purpose and motivation

The purpose of this lecture is to disuss quality attributes relevant for the I4.0 domain in the light of a quality model for architechting industry 4.0 systems. The particular model is aimed at Industry 4.0 but the method used for constructing the model is generic and thus applicable to other domains as well. We will also discuss tactics for achieving the quality attributes and on a more systemtic level.

The lecture will also continue the discussion on emperical studies in software architecture through your presentations of your experiments (design, measurements, operation, results).

Before Class

- Read the literature

- Review the exercises from last lecture and prepare to ask any questions you may have

Reading

Read the following before class:

- Architectural tactics in software architecture: A systematic mapping study[2]

- A Quality 4.0 Model for architecting industry 4.0 systems[1]

    (Find the material at the library, on itslearning, or in online databases.

In class

Lecture

1. Presentation of your experiments

2. Quality model for architecting industry 4.0 systems

3. Tactics

4. Exercises

Exercises

1. Work on you exam assignment

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Advanced Topics in Software Architecture

References

[1] Pablo O. Antonino et al. "A Quality 4.0 Model for architecting industry 4.0 systems". English. In: *Advanced engineering informatics* 54 (2022), p. 101801.

[2] Gastón Márquez, Hernán Astudillo, and Rick Kazman. "Architectural tactics in software architecture: A systematic mapping study". In: *Journal of Systems and Software* 197 (2023), p. 111558. ISSN: 0164-1212. DOI: https://doi.org/10.1016/j.jss.2022.111558. URL: https://www.sciencedirect.com/science/article/pii/S0164121222002345.