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Repetition Questions (dt. Wiederholungsfragen) Lesson 13

Topics and Concepts (Link to Lecture)

The guest lecture today covered the following concepts:

1. Role of IT in Financial Industry
2. Importance of IT Architecture in Large Organizations
3. Financial and Regulatory Reporting Architecture
4. Innovative Technologies and Architectures

In the exercise¹, we worked with the arc42 template for architecture documentation.

Questions

Topics/Concepts covered by Guest Lecture

1. What is the main driver for using IT architecture, why does the financial industry care about it?
2. What are the “three plus four plus one” disciplines of IT architecture according to today’s lecture? How does the term software architecture fit in?
3. Which viewpoints do the three representations of the Financial and Reporting Regulatory Reporting Architecture take?
4. How SMART are the NFRs that appear on slides 20 and 21?

Topic/Concept: arc42

1. What is the motivation for the introduction of a template such as the arc42 one? Why do its authors give this one away for free?
2. List the sections of the arc42 template.
3. How do the template sections relate to the 4+1 viewpoints introduced in lesson 1 (and vice versa)?
4. How does the template correspond to C4 model elements (and vice versa)?
5. Which components would you expect to appear in a building block and/or runtime view that specifies the design of an Enterprise Service Bus (ESB) product?
6. Where in the arc42 template would you describe a strategic Domain-Driven Design (DDD), e.g. a context map?

Answers

Topic/Concept: Guest Lecture

1. *Manage and reduce IT complexity (also/including: drive innovation, serve as communication means, manage/control/mitigate risk and justify investment decisions)*
2. *See lecture slide 15: IT architecture is usually defined as software architecture plus hardware architecture, so all disciplines deal with software of different kinds (applications, middleware, operating systems). Note that the CS definition goes up to “city planning level” in addition to “individual building construction”, which corresponds to the notion of enterprise architecture (yet another polyseme!)*

¹../3-exercises-solutions/ZIO-AppArch-ExerciseWeek13.pdf

3. *Logical and Deployment/Physical; but also Scenario (NFRs shared) and some Implementation facts listed.*
4. *Most of them are specified in a rather SMART way, e.g. a testable availability percentage is specified (M) and the functional application context is given, which differs for each example (S). Even peak load is indicated.*

Topic/Concept: arc42

1. *"Document, develop, learn" according to the arc42 authors. Templates improve communication, e.g. during reviews; they reduce learning effort and can serve as checklists. Its authors become visible and, as a consequence, can sell their consulting services and books and certification programs even better (but in this case we can safely assume that they also have an altruistic motivation: serve the community, "give back" something).*
2. *12 sections, see <http://www.arc42.de/template/> and downloadable arc42 templates and sample solution to exercise 10 for enumeration.*
3. *Scenario: Section 1, 2, 3; Logical: Building Block View (level 1, 2); Implementation: Building Block View (level 3); Process: Building Block View (level 2) and Runtime View; Deployment: Deployment View. All other template elements can have content that crosses viewpoints or belong to several of them.*
4. *From <https://c4model.com/>: "The C4 model is compatible with the arc42 documentation template as follows: Context and Scope => System Context diagram, Building Block View (level 1) => Container diagram, Building Block View (level 2) => Component diagram, Building Block View (level 3) => Class diagram".*
5. *Logical components that implement the ESB capabilities such as routing, transformation, (protocol) adaptation (see lecture lesson 10); the runtime view should make clear where and how the loose coupling properties are reached, for instance by introducing dynamic, content-based routing.*
6. *Section 3. Context and Scope and possibly also in Section 4, Solution Strategy (not just because the name suggests this).*