dqualizer: Domain-centric runtime quality analysis of business-critical application systems

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Runtime quality analyses are mostly technical
Domain first in architecture and design

Exploration and Analysis

Strategic Design

Ubiquitous Language & Bounded Context

Context Mapping

Tactical Design

Aggregate

Software Architecture

Building Blocks
Collaboration with the dqualizer approach
Quality attributes of the domain

Order product → Sales

Order placed → Accounting

Invoice paid → Shipping

Send e-mail → Notification

98.9% Avail.

17 per h

20 min

597 €/month

2.7 kW
Enriching the technical monitoring with business domain

Sales
- service A
- service B
- service C
- service D
- service E

Accounting

Shipping

Notification
- service F
- service G
- service H

DevOps  Domain Exp.
dqualizer approach – architecture

LEGEND

- Domain-centric analysis description
- Technical analysis description
- Domain-centric analysis result
- Technical analysis result
- Mapping domain-technical
dqualizer approach – architecture
Schedule and working packages

AP 1: Modelling
AP 2: Mapping
AP 3: Test generation
AP 4: Model extraction
AP 5: Evaluation

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AP 1 – Modelling of the business domain and quality attributes

1.1 - DDD und quality attributes?

1.2 – DDD-modeling language

1.3 – Enriching with quality scenarios and annotations

1.4 - Editor und persistance for the modeling
AP 1/5 – Workshops

Fragestellung Storming 2

<Story>
Neues Unternehmen in SYS1 und existiert bereits in SYS2
Beispiel 4 - Ticketverkauf Happy Path (digital)
Annahmen: Happy Path, Kinobesucher hat kein Abo
Domain: Metropolis

Context: default
AP 1 – dqDomainModeler – first prototype
We executed the resilience test with the stimulus **Failed request** using Chaos Toolkit, in the environment **TESTING**. You stated that the test should be executed during regular office hours, i.e., between 08:00 am and 18:00 pm. You also asked existing load tests to simulate real user behavior. The stimulus was repeated **Once**. The test results should have an Accuracy of **100%**. As a hypothesis you stated the Error rate to be **Low**.

Sadly, your experiment was **not successful**! The hypothesis did not hold because the Error rate was higher than the measure you specified. :-(

**Execute**
AP 5 – (Continuous) Evaluation

5.1 – Laboratory studies

5.2 – User tests

5.3 – Case study DATEV eG

5.4 – Case study VHV solutions GmbH
Workshops using domain-centric approaches (e.g., Domain Storytelling) are feasible.

Workshops turned out to be enabler for the domain experts to „ask the right questions“.

There are domain-centric questions covering all our investigated fields (monitoring, load, resilience).

It is hard to engage with the employees if they do not see an immediate benefit.
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