Team 1 – Quiz (Week Number: 6)

**Lecture Topic: Aspect-Oriented Requirements Analysis**

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**What are the Characteristics of Good Requirements?**

The IEEE Std. 830-1998 “Recommended Practice for Software Requirements” defines characteristics of good requirements:

* Correct
* Unambiguous
* Traceable
* Consistent
* Ranked for importance
* Verifiable

**List of CIA process Roles and Responsibilities?**

1. Product Owner and Team Lead: finalize the release scope, i.e., a list of change requests (a.k.a. business requirements).

2. Team Lead: assigns change requests to developers to analyze and implement.

3. CIA Coordinator: schedules a CIA meeting.

4. Assigned Developers/BA: prepare a CIA case for each change request.

5. CIA Coordinator: reconciles inputs from Developers, prepares the meeting materials.

6. CIA Coordinator: conducts a CIA meeting (Product Owner, Developers, QA parties are invited):

a. Developers/BA: present a CIA case for each change request.

b. All Parties: examine and validate the CIA results.

c. CIA Coordinator: facilitates a discussion, takes notes.

7. CIA Coordinator: publishes the final CIA results after the meetings.

8. Team Lead: approves the CIA results for the release.

9. RCT Owner: at the end of a release, updates the RCT and produces a new version to be approved and baselined.

10. Team Lead: approves the latest RCT version.

**What are join points?**

Join Points are points in the core feature flow where a crosscut’s behavior is combined with the core feature.

**What are RCT Impact Types?**

1) Direct Impact

The Direct type of impact means that to implement a requested change we need to change the application code.

2) Indirect Impact

The Indirect type of impact means that we do not change the application code of a given feature.

**Who introduced Aspect-Oriented Programming Language?**

Gregor Kiczales introduced an aspect oriented programming language in the year 1997.

**What is a Requirements Composition Table and why it is Beneficial?**

RCT is a requirements analysis artifact that captures a structured and holistic view of the application functionality in the form of a binary relation. It captures a complete inventory of an application’s features, structured by core features and crosscutting concerns.

RCT allows us to investigate the impact changes in all four directions such as Top-down, Bottom-up, Backward, and Forward Analysis.

**What is the objective of Change Impact Analysis?**

To translate the high-level change requests into low-level product features.

**What are the Benefits of AORE Methodology?**

AORE methodology provides techniques to develop better-structured requirements that can help us improve requirements completeness, maintainability, and reduce the cost of software development.

**What is the common reason that can cause significant Financial Losses to the Business?**

A lack of understanding of the impact of changes is a common reason for production instability and incidents, which can cause significant financial losses to the business.

**What are Core Features?**

Core Features are the features provided to end users, being executed by the end-user, produce a distinct and tangible business result.

**What are Crosscuts?**

Crosscuts, also called supplementary features. They can’t be invoked by end users and don’t produce business results by themselves, but capture some necessary details that can be added to the context of core features.

**What is the relationship between Core Features and Crosscuts?**

Crosscuts can be scattered across the application and tangled within the context of various Core Features. When Crosscuts were invoked, Crosscuts can impact the context of Core Features by constraining, interrupting, or enhancing the core feature flow.

**What are two main reasons to maintain requirements over time?**

1. Perform impact analysis of software changes (most change requests, on average from 65% to 85%, overlap with the existing functionality)
2. Reduce the cost of requirements development

**What is Separation of Concerns (SoC)?**

SoC means breaking a problem domain into specific aspects and then studying each aspect “in isolation for the sake of its own consistency”.

**What are characteristics of crosscutting concerns?**

Supplementary features that we can analyze and model as crosscutting concerns should comply with the following characteristics:

1. They cannot be invoked directly by end-users; to be executed, they need the context of a core feature.

2. When invoked, they can impact a core feature’s context by constraining, interrupting, or enhancing the core feature flow.

3. They are sufficiently scattered, i.e., they should impact at least three or four core features.

**What are the steps to produce an RCT?**

1. Conduct a kick-off meeting, agree on the RCT engagement mission, identify SMEs and establish their commitments.
2. Identify application modules (a.k.a. functional areas), assign SMEs.
3. Identify crosscutting concerns, agree on their meaning.
4. For each module, identify the inventory of core features.
5. Analyze the impact of crosscuts; compose each core feature with related crosscuts (0/1).
6. Validate and refine the draft RCT.