Exam Review

Wednesday, February 17, 2016   1:21 PM

Chapter 1 - What is SA? **Module 1**
Chapter 2- Why is SA Important? **Module 2**
Chapter 3 - The Many Contexts of SA?   **Module 1**
Chapter 4- Understanding Quality Attributes? **Module 2**
Chapter 13- Tactics and Patterns **Module 5 and 5 Extra**
Chapter 16- Architecture and Requirements **Module 3**

Module 1

Analogy Example: Importance of architecture to a non-technical person
Common Elements (Slide 11)
Architectural Style (Slide 22)
SDLC- Waterfall, Iterative, Spiral
-Pros and cons
Architecture Vs. Design (Slide 32)

Module 2
What is Software Architecture (Slide 5 & 7)
Views and Structures (Slide 14
Architectural Patterns
        - Generic Layered
        -Repository Architecture
        -Client-Server architecture
        -pipe and filter
        -hybrid architectures.
What makes good architecture?
        -Good rule of thumb (Slide 26)

Who is involved in Architecture
        Stakeholders
Responsibilities and Skillsets of Architects (Slide 37)
Goal of SA (Slide 39)
3C's Advice for managers (Slide 41)
AIC (Slide 44)

Module 3

ASR (Slide 3-5)

4 ways to gather ASR:

 -ASR from Stakeholders

 -Quality Attribute Workshop (Slide 10)

  -know the steps

 -ASRs from the Business Goals

  -categories of business goals

 -Utility Tree

  -What is a Utility Tree (Slide 19)

  -Example (Slide 20 and 21)

  -Next steps (Slide 23)

Module 4

13 Reasons of why SA is important

Inhibiting or Enabling System's Quality Attribute (Slide 4)

Changes (Slide 5)

Predicting System QA (Slide 6)

Communication of Stakeholder

Design Decision

Constraints

Organizational Structure

Prototype

Reuse

Independent Systems

 -Commercial off the shelf

Restriction of Design Vocab

Basis for training

Slide 19

 -Answer: depends on organization

Slide 20

Functionality and QA are Orthogonal (independent)

Quality Attribute Considerations

How do we make decisions (slide 32)

 Allocation of responsibilities

 Data and Coordination models

Mapping

Slide 40 & 41

Module 5

3C's of SA

Pattern

 Context, problem, solution

Module 5 Extra

Mobile Robotics (4 solutions)

 -Block Diagrams

 -Pros and Cons

Different patterns:
-Main program and Subroutine
Object oriented
Layered
Client Server
Pipe and Filter
Peer to Peer
Publish-Subscribe
Blackboard