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SE 339 - SOFTWARE ARCHITECTURE

UNDERSTANDING SOFTWARE ARCHITECTURE

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Fall 2017

I will be in a conference next week

I am checking options for replacement

GOAL

Define software architecture

What does software architecture mean? (15 min)

1. Partition the system into components considering requirements and constraints
2. Assigning responsibility to the components of the system
3. Addressing structural issues of composing elements of a system
4. All the above
5. I have better idea

Quiz - 4 questions (15 + 10 min)

The criteria for partitioning a system are:

1. Consider requirements and constraints
2. Minimize dependencies between components
3. Assign clear responsibilities for each component of the software
4. I have another idea

Components communicate through

1. Method calls
2. Synchronization mechanisms, e.g., in threads
3. Triggered when an event is received
4. None of the above
5. All of the above

Which ones of the characteristics of client/server pattern below is correct?

1. Asynchronous request-reply communication
2. Support one or many clients
3. Provide mechanisms for high performance
4. Maintain a state of connected clients
5. Provide mechanisms for discovering services
6. Provide mechanisms for authorizations
7. Provide mechanisms for error handling
8. Provide mechanisms for interoperability

Architecture views:

1. Describe the architecture from given viewpoints—e.g., stakeholders
2. Are: logical view, process view, physical view, and development view
3. Are: module view, components and connector view, and allocation view

- Can you execute the abstract description of architecture?
- What do architects do with the multitude of frameworks/COTS that implement the patterns they need to make their architecture concrete?
- Why abstract architecture needs to be rectified as concrete implementation progresses?

10 min each

Questions

What is a software architect? (10 min)

1. The team manager
2. The senior developer who make decision about the use of frameworks
3. A person in the team that has the following skills: liaison, software engineering, has deep technology knowledge, and cautious about risks.

Krutchen says: “The life of a software architect is a long (and sometimes painful) succession of sub-optimal decisions made partly in the dark.” (10 min)

1. Do you agree with the statement?
2. Why the decision are sub-optimal?
3. Why the decision are made in the dark?