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软件架构设计系列课程第三讲

如何成为一个.NET企业架构师 (1)

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Agenda

- Requirements for an architect
- Qualifications for an architect
- Key Principles for architect
- My experience as an architect

Requirements for an architect

- Interfacing with stakeholders in order to determine their (evolving) needs to be realized in software
- Generating the highest level of software requirements, based on the user's needs and other constraints such as cost and schedule.
- Ensuring that this set of high level requirements is consistent, complete, correct, and operationally defined.
- Performing cost-benefit analyses to determine the best methods or approaches for meeting the software requirements

Requirements for an architect

- Developing partitioning algorithms (and other processes) to allocate all present and foreseeable (software) requirements into discrete software partitions such that a minimum of communications is needed among partitions, and between the user and the system.
- Partitioning large software systems into (successive layers of) subsystems and components each of which can be handled by a single software engineer or team of engineers.
- Ensuring that a maximally robust software architecture is developed.

Requirements for an architect

- Generating a set of acceptance test requirements, together with the designers, test engineers, and the user, which determine that all of the high level software requirements have been met, especially for the computer-human interface.
- Generating products such as sketches, models, an early user's manual, and prototypes to keep the user and the engineers constantly up to date and in agreement on the system to be provided as it is evolving.

In short:

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- Interface with stakeholders
- Requirements
- Partitioning & Interfaces
- Integration
- Ongoing communication

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Qualifications for an architect:

- Design talent
- Engineering ability
- Social awareness
- Business aptitude
- Legal knowledge

Qualifications for a software architect:

- Superior Technical Skills

Enterprise architectural frameworks such as TOGAF and operational frameworks such as ITIL

Design Patterns, Best practices & their applications, OO, RDBMS, EAI, modelling, security, languages and so on

- Software Process
- Superior Personal and Communication Skills
- General Business and Organizational Skills

Key Principles for architect:

- Stakeholders satisfaction
- Functionality-driven Complexity
- KISS — Keep it Simple, Stupid
([Occam's Razor](#) or PRINCIPLE OF PARSIMONY or PRINCIPLE OF SIMPLICITY)
- Clear interfaces & Modularity
- Iteration — Living design
- Holistic Thinking

My experience as an architect:

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- Clear
- Simple
- Workable
- Flexible for change

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