SEN 3244

SOFTWARE ARCHITECTURE

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❑ Chap1: Introduction to Software Architecture

Lesson Objectives

At the end of this lesson, students will be able to:-

- Have a picture of an ideal software architect whose capability to solve organisation problems is beyond imagination.
- Best chose the suitable software architecture domain skill set to consider in the future

❑ Chap1: Introduction to Software Architecture

❖ Software architect

✓ A software architect contributes to enterprise solution; opening doors to business development , and transform opportunities, technological modernization, and career improvement and growth.

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❖ Software architect

- ✓ The previous is done through the power of ***creativity, imagination, and persistence***.
- ✓ An ideal software architect has attributes that guides its path-way.

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❖ Software architect attributes

- ***You promote institutional culture***

✓ You should inspire change, stir up enthusiasm for innovation, stimulate new ideas, affect organizational strategies, combat business and Technological stagnation and make a big difference in the organization.

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❖ Software architect attributes

- ***You promote institutional culture***

✓ Become an agent of cultural transformation ; transforming the old to the new.

✓ Contribute more than following; any organizational solution you offer contribute to the institutional knowledge.

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❖ Software architect attributes

- ***You are a gifted leader (inspire followers)***

✓ You are a leader and not necessarily a manager.

✓ You promote institutional social harmony to foster consensus on software architecture strategies, Technologies, best practices, standards and policies.

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❖ Software architect attributes

- ***Tolerate Errors and stay open to Technological Experiences***

✓ You are not afraid of failure.

✓ You have develop problem-solving and decision-making skills.

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❖ Software architect attributes

- ***Build a circle of trustful followers by uplifting their spirit***

✓ You must inspire others and galvanize positive energy among your co-workers and work teams.

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❖ Software architect attributes

- ***You are an institutional solution provider(1)***

✓ You promote business growth through modern Technological solutions

✓ Provide solutions within the boundaries of your software architecture expertise.

❑ Chap1: Introduction to Software Architecture

❖ Software architect attributes

- ***You are an institutional solution provider(1)***

✓ Understand the scope of your technological solution.

➢ Common organizational software architect roles design to address three different levels of roles; *enterprise software architect, solution architect and application architect.*

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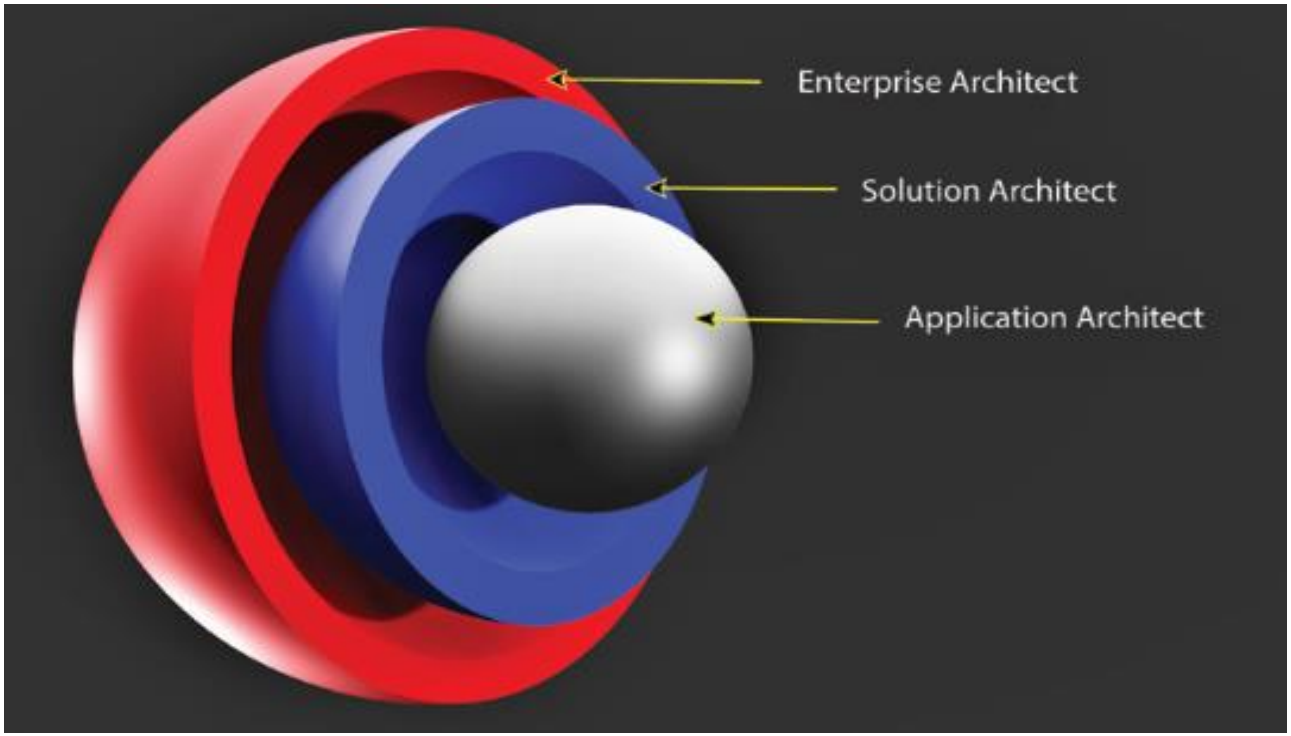
❖ Software architect attributes

- ***You are an institutional solution provider(2)***



Software Architecture roles and their organisational scope

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❖ Software architect attributes

- ***You are excellent in integration***

➢ Integration is a Technological , social and business competence you consistently demonstrate to provide large-scale business remedies.

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❖ Software architect attributes

- ***Mitigate Risk***
- ***You are Domain-driven***
- ***You are socially driven***

✓ You are mindful that social collaboration and partnership with co-workers, industry alliances, customers and stakeholders yields compelling Technological solutions.

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❖ What do software architect do?

- A software architect performs a vast number of activities, typically handled by more than one professional.
- It is possible to deduce from the task what they do or deliver.

➢ A software architect does what a specific organization need.

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❖ What do software architect do?(1)

- A software architect must respond to ***Business and Technological requirements*** of a particular institution.
- Their task and deliverable vary from one institution to another.

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❖ Organizational leading software architect levels

ARCHITECT LEVEL	ARCHITECTURE TYPE	ROLE	CHIEF RESPONSIBILITIES	SATISFYING
I	Enterprise architect	Strategic	Strategy alignment Frameworks Integration	Business requirements
II	Solution architect	Mediation	Liaison Technical management Concept design	Business requirements and technical specifications
III	Application architect	Implementation	Development Componentization Testing	Business requirements

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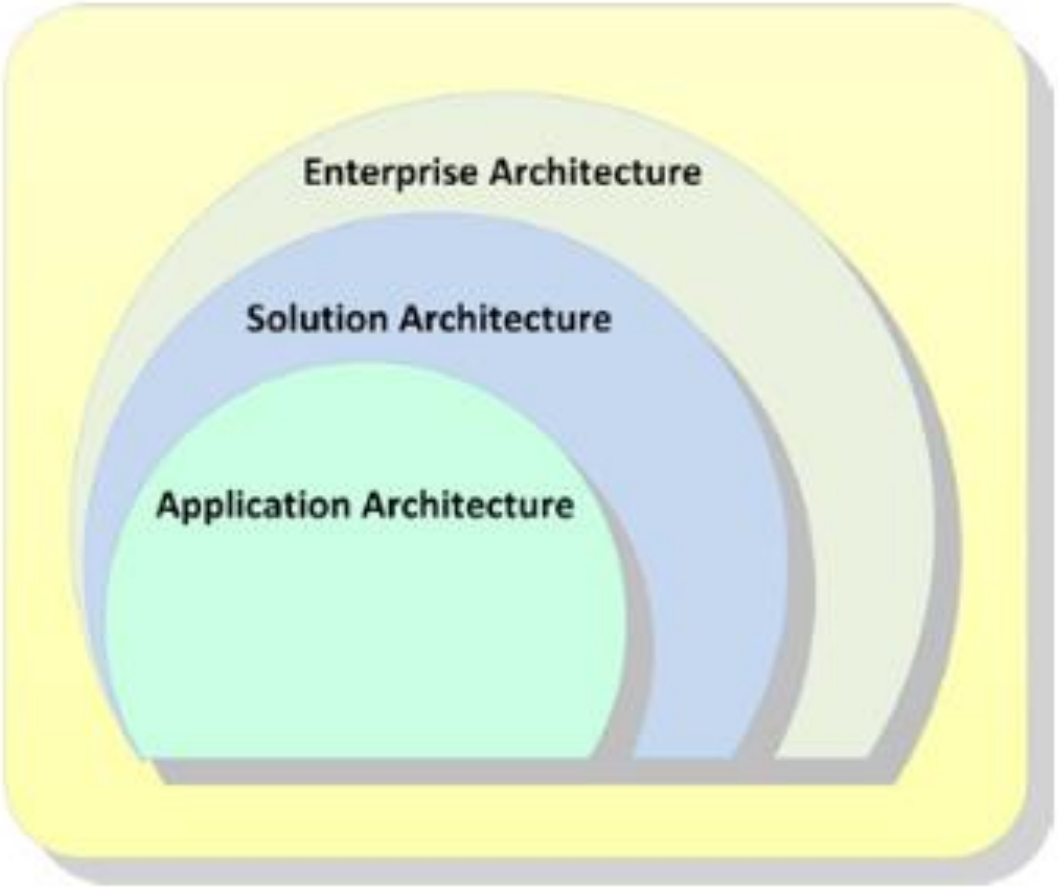
❖ Collaboration leading hierarchy software architects



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❖ Types of Domain software architecture

➢Data architect – software architect role

- ✓ Data analysis ; answer the question – ***What type of data do we own?***
- ✓ Data discovery ; answer the question **– *Where is our data located?***
- ✓ Data repurposing ; answer the question- ***For what purpose can we reutilise our data?***

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❖ Types of Domain software architecture

➢Data architect – software architect role

- ✓ Data access ; answer the question – ***how should data be accessed in the most secure manner?***
- ✓ Data storage ; answer the question **– *How should data be deposited in various data storage facilities?***
- ✓ Data utilization ; answer the question- ***How should institutional data be utilized?***

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❖ Types of Domain software architecture

➢Data architect – software architect role(3)

- ✓ Data collection, aggregation and integration ; answer the question ***How should data be discovered, retrieved, and gathered form various data sources?***

- ✓ Data recovery and availability ; answer the question ***– How should an organisation ensure timely recovery from data server outages?***

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❖ Types of Domain software architecture

➢Data architect – software architect role(4)

Data architect responsibilities

Data strategy, data analysis, data modelling, data governance, data management, data migration, business intelligence, data security, data integration, capacity planning , data acquisition, nonfunctional requirements, data archiving and redundancy,

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❖ Types of Domain software architecture

➢ Cloud architect – software architect role

- ✓ At the forefront of organisational modernization efforts that brings change that is manifested in the physical migration of enterprise applications and systems to the cloud.

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❖ Types of Domain software architecture

➢Cloud architect – responsibilities(1)

- ✓ Cloud solutions
- ✓ *Cultural change*
- ✓ *Cloud architecture*
- ✓ *Cloud migration strategy*
- ✓ *Cloud adoption strategy*
- ✓ *Cloud operating model*
- ✓ *Cloud governance framework*
- ✓ *Cloud cost management*

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❖ Types of Domain software architecture

➢Cloud architect – responsibilities(2)

- ✓ Cloud service evaluation and selection
- ✓ *Cloud capacity planning*
- ✓ *Testing*
- ✓ *Cloud-related on promise services*
- ✓ *Cloud security and compliance*

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❖ Types of Domain software architecture

➢ Business architect – software architect role

- ✓ Business strategies
- ✓ *Business strategy alignment*
- ✓ *Business solution*

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❖ Types of Domain software architecture

➢Security architect

✓ The most important goals of every security implementation in the enterprise

CIA Triad (Confidentiality, integrity, Availability)

❑ Chap1: Introduction to Software Architecture

❖ Types of Domain software architecture

➢Security architect – software architect role

- ✓ Data analysis ; answer the question – ***What type of data do we own?***
- ✓ Data discovery ; answer the question **– *Where is our data located?***
- ✓ Data repurposing ; answer the question- ***For what purpose can we reutilise our data?***

Welcome!

This course is design for you to understand the ways software architectures are represented, both in UML and other visual tools.

QUESTIONS