Software Architecture

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## Interesting Software is Complex

Many aspects to the design of its architecture.

### Architectural Design

Managing technical complexity.

#### Question

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Answer

# Architectural Views

- Only consider one aspect at a time.

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- The Open Group Architecture Framework (TOGAF)
  [Forum, 2018]
- ISO/IEC/IEEE 42010:2011 [iso, 2011]

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Structure – Containers, Components, Code

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- Structure Containers, Components, Code
  - *Levels* of detail
- Behaviour Dynamic
  - How elements *interact* to deliver features
- Infrastructure Deployment
  - How system is *deployed* on computing platforms.

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## Process – *Dynamic* behaviour

• concurrency & distribution, fault tolerance, process control,

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      - availability, reliability, scalability, throughput, ...
- Scenario *Demonstrate* functionality delivered by architecture
  - use case details
    - *drive* functional design of architecture
    - validate design of architecture
    - *illustrate* purpose of architecture

## Diagrams & Notation

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- C4 informal, simple structure [Brown, 2023]
- UML formal, well-defined language [uml, 2017]
- You probably don't want to know about alternatives

Reading...

"Architectural Views" Notes [Thomas and Webb, 2023]

<sup>&</sup>lt;sup>1</sup>Remember, I said you had to read the notes.

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