Architectural Views

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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  - concepts, service, logical, physical resource, architecture foundation

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- The Open Group Architecture Framework (TOGAF) [Forum, 2022]
- ISO/IEC/IEEE 42010:2011 [iso, 2022]

Diagrams & Notation

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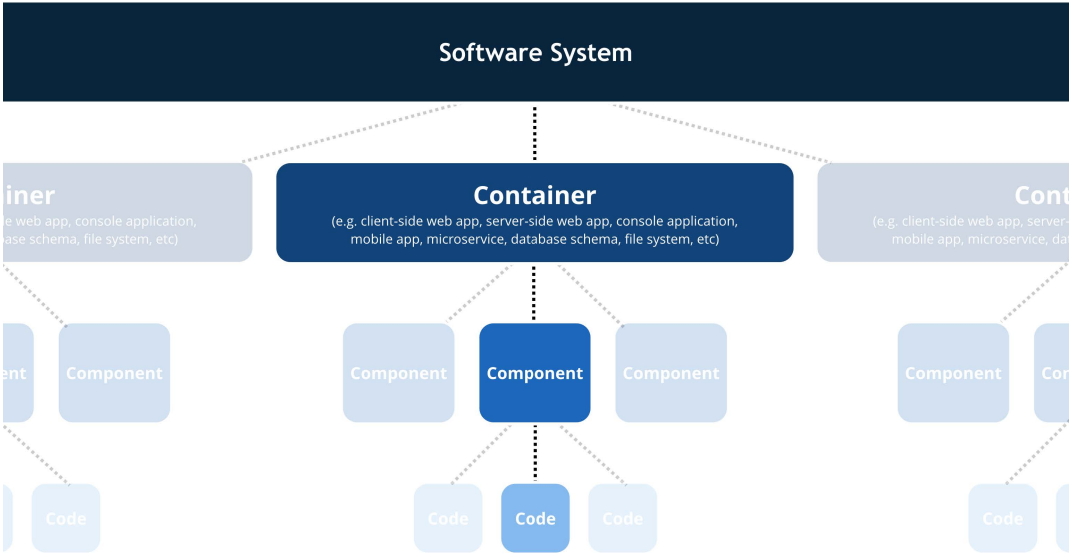
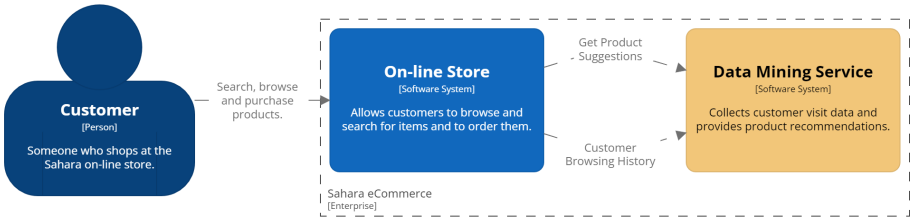
- C4 – informal, simple structure *[Brown, 2023]*
- UML – formal, well-defined language *[uml, 2017]*
- You probably don't want to know about alternatives

C4 Model: Levels

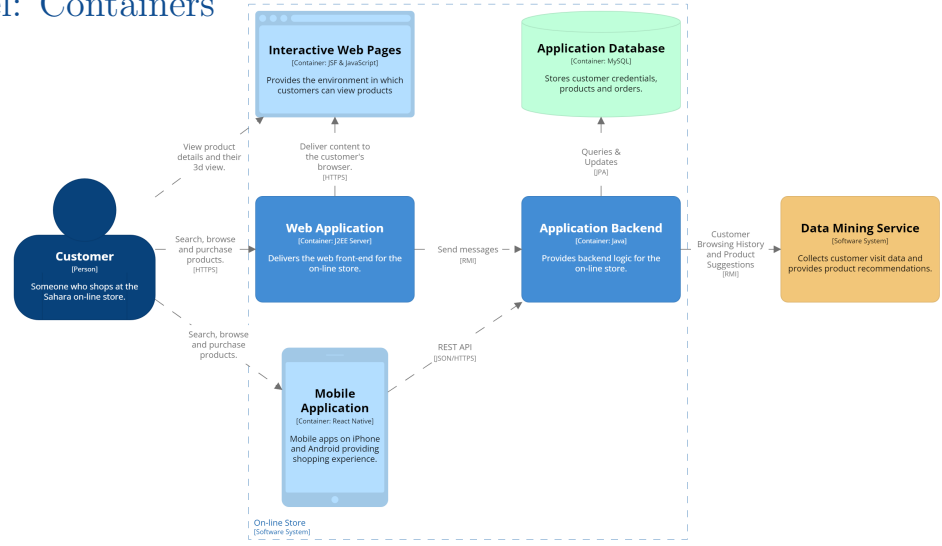


C4 Model: Context



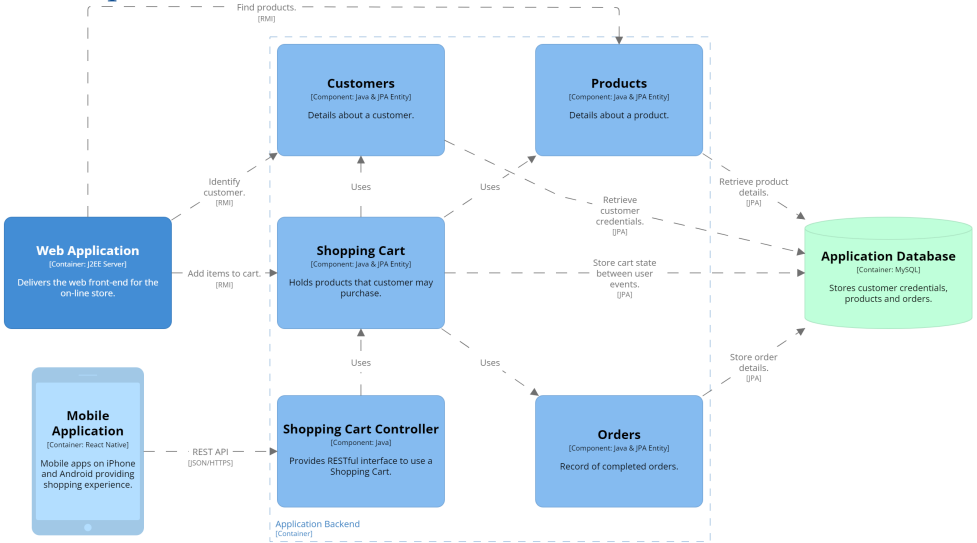
How software system fits into broader *environment*

C4 Model: Containers



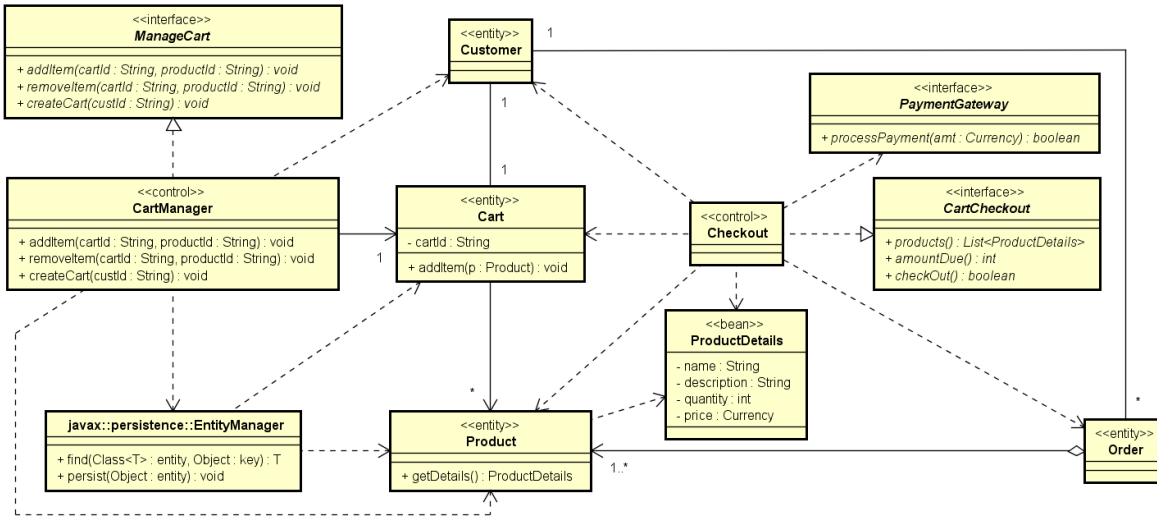
Structure of the software system

C4 Model: Components



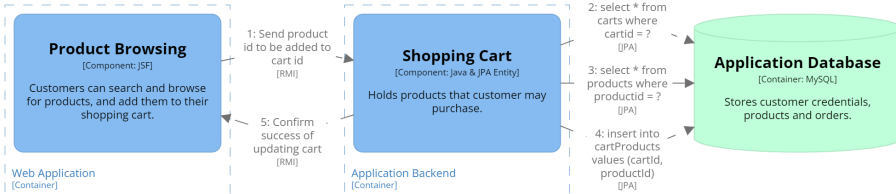
Elements that implement a container

C4 Model: Code



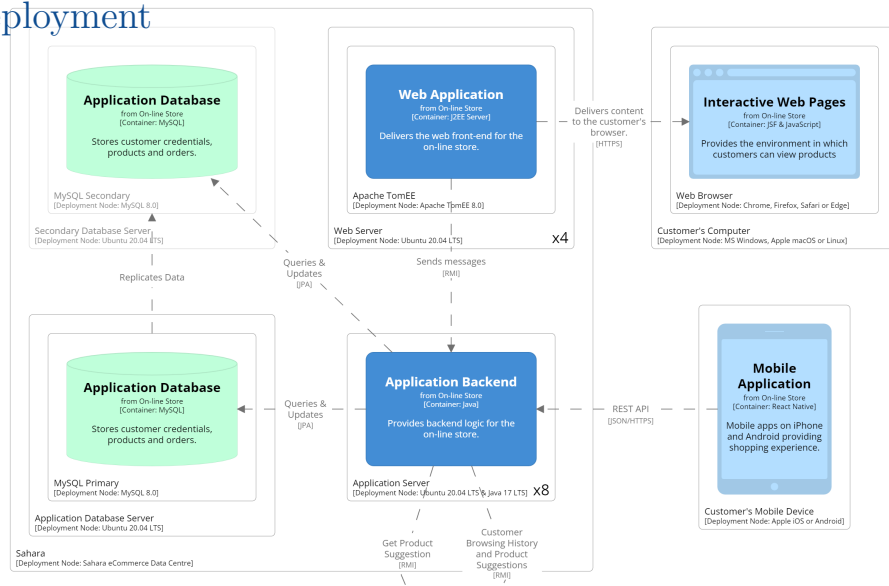
Structure of code implementing a component

C4 Model: Dynamic



How parts of the model *collaborate* to deliver *behaviour*

C4 Model: Deployment



Infrastructure on which system will be deployed

4+1 Views

Logical – *Structure* of how the software is implemented

- components/classes, relationships, interactions

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Scenario – *Demonstrate* functionality delivered by architecture

- use case details
  - *drive* functional design of architecture
  - *validate* design of architecture
  - *illustrate* purpose of architecture

Reading...

"Architectural Views" Notes[1] *[Thomas and Webb, 2023]*

[1] Remember, I said you had to read the notes.

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