

UML Components

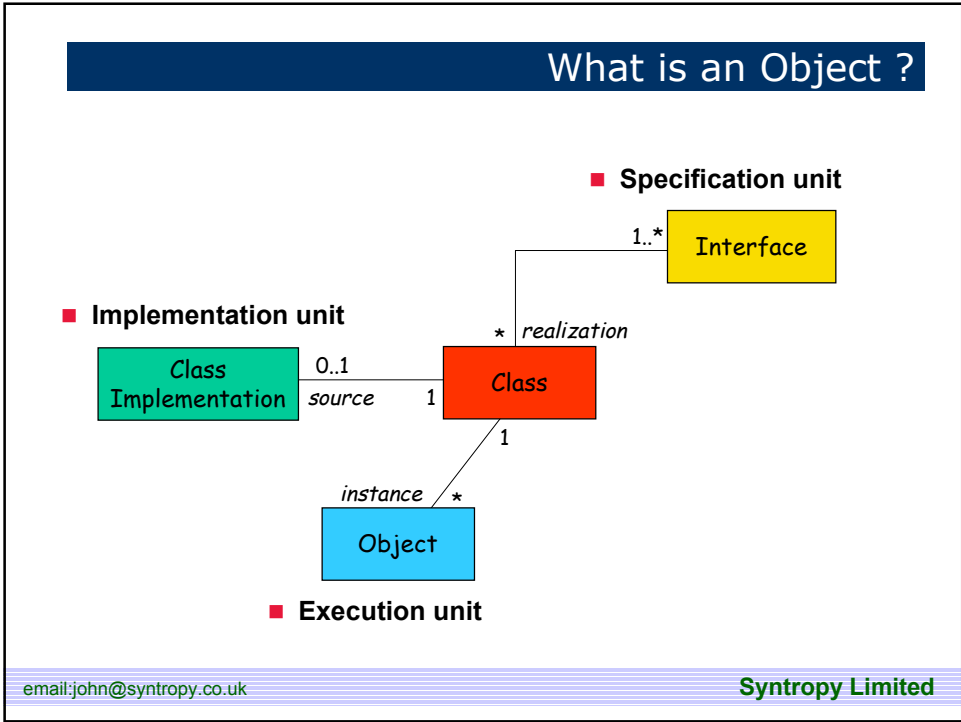
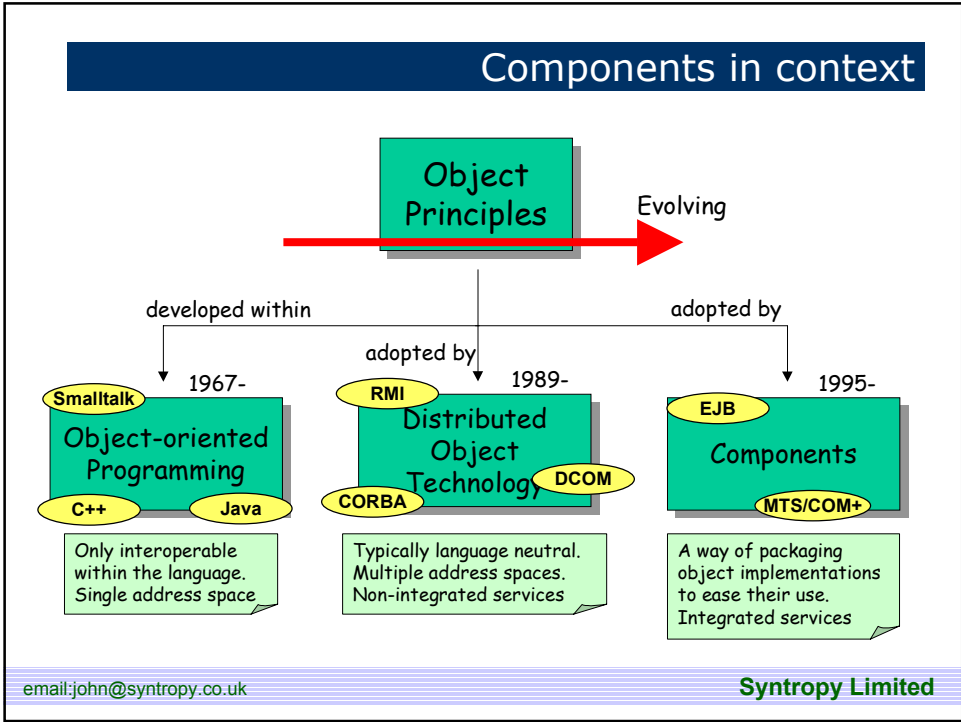
John Daniels
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Agenda

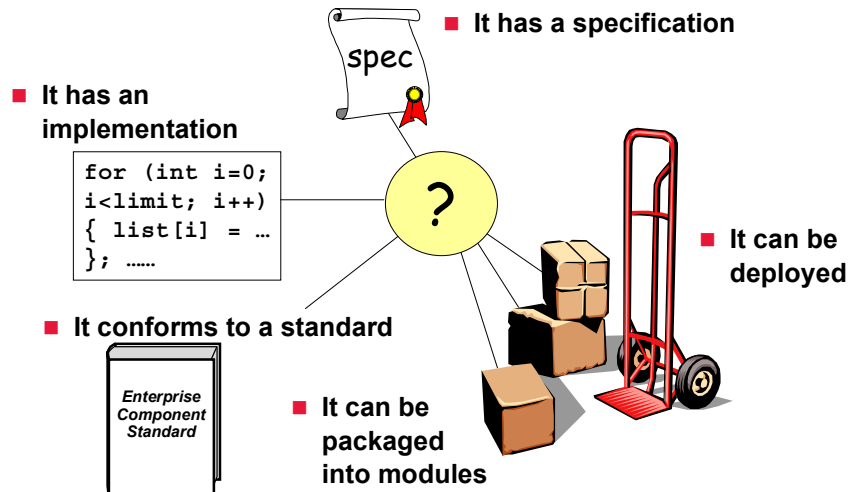
- Component principles
- System architecture with components
- The Requirements workflow
- The Specification workflow
- Modelling components with UML

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Aspects of a component



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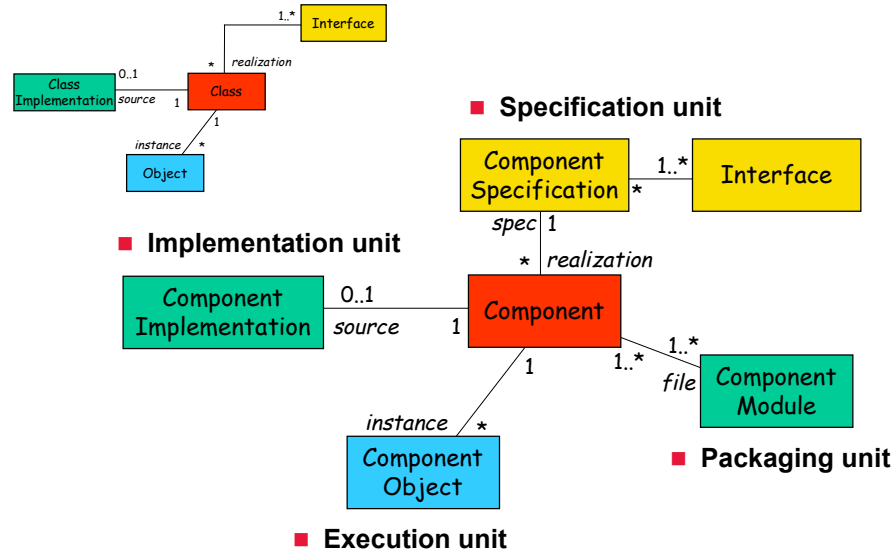
Component standard features

- **Component Model:**
 - defined set of services that support the software
 - set of rules that must be obeyed in order to take advantage of the services
- Simple programming model, no need to design/know about the infrastructure
- Services include:
 - remote access, transactions, persistent storage, security
 - typically use services by configuring not programming

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What is a Component ?



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Interfaces vs Component Specs

Interface

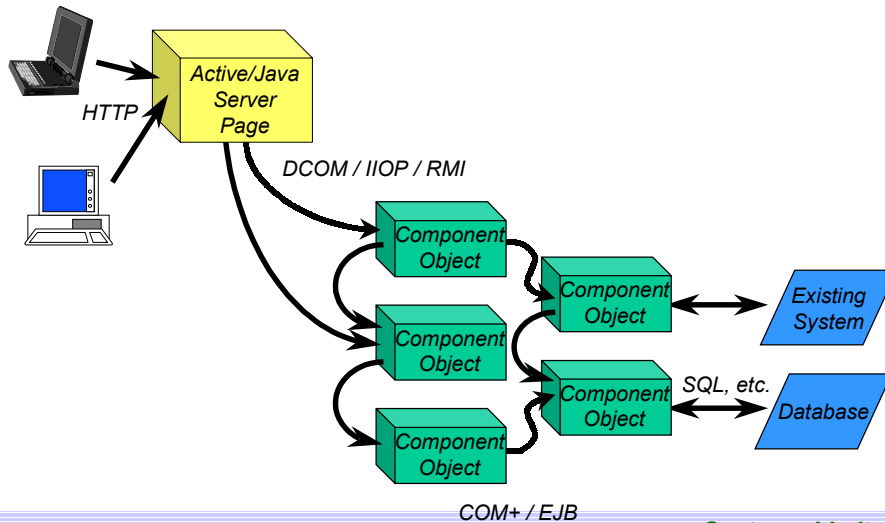
Component Specification

- | | |
|--|--|
| <ul style="list-style-type: none"> • Represents the usage contract • Provides a list of operations • Defines an underlying logical information model specific to the interface • Specifies how operations affect or rely on the information model • Describes local effects only | <ul style="list-style-type: none"> • Represents the realization contract • Provides a list of supported interfaces • Defines the run-time unit • Defines the relationships between the information models of different interfaces • Specifies how operations should be implemented in terms of usage of other interfaces |
|--|--|

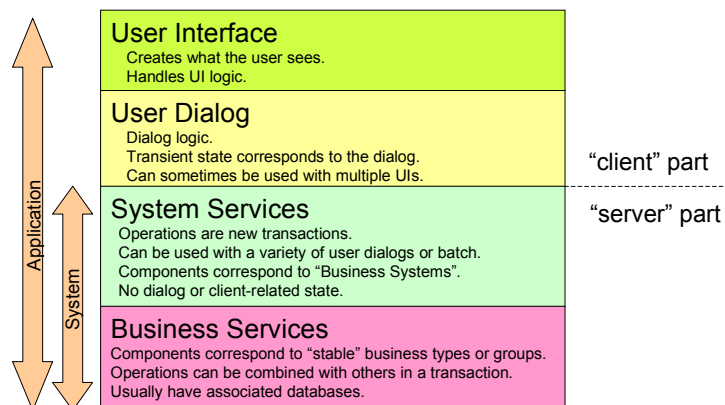
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Blueprint for the systems being considered

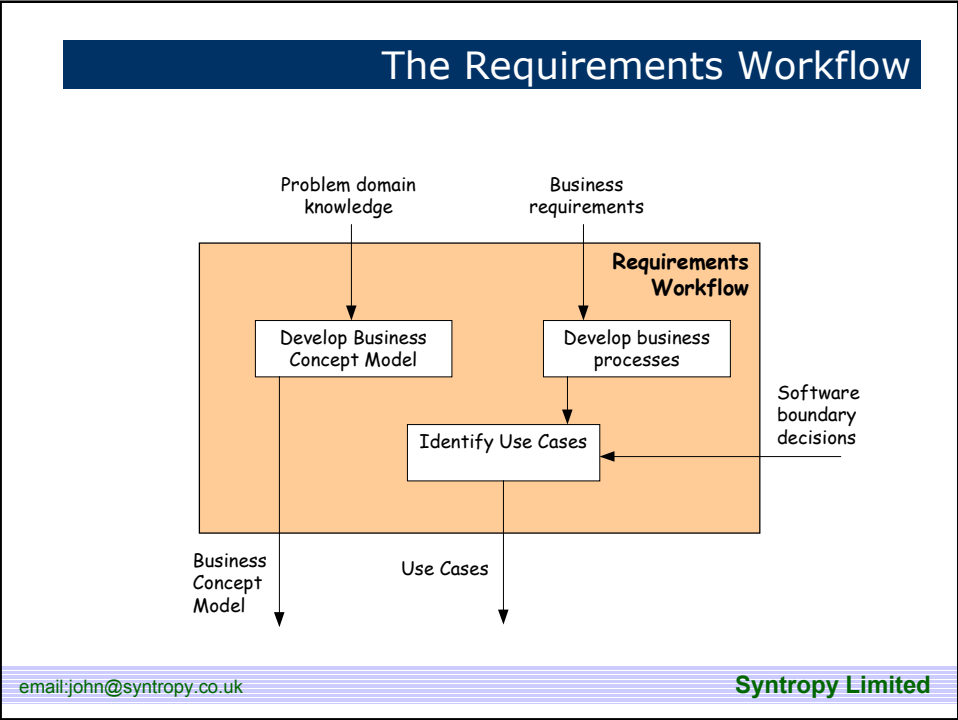
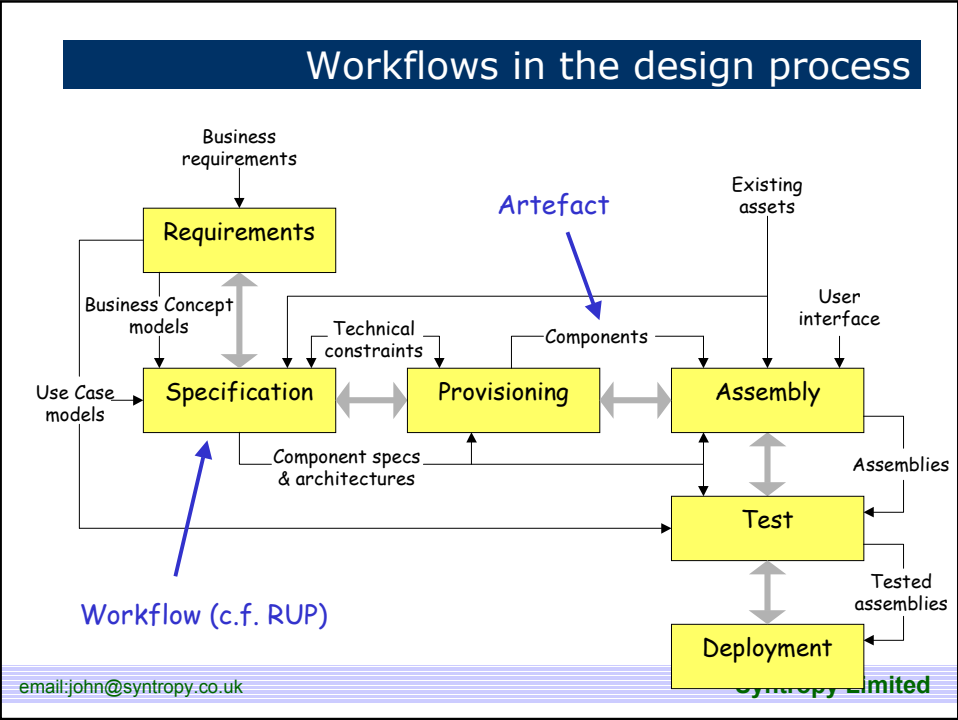


System layers

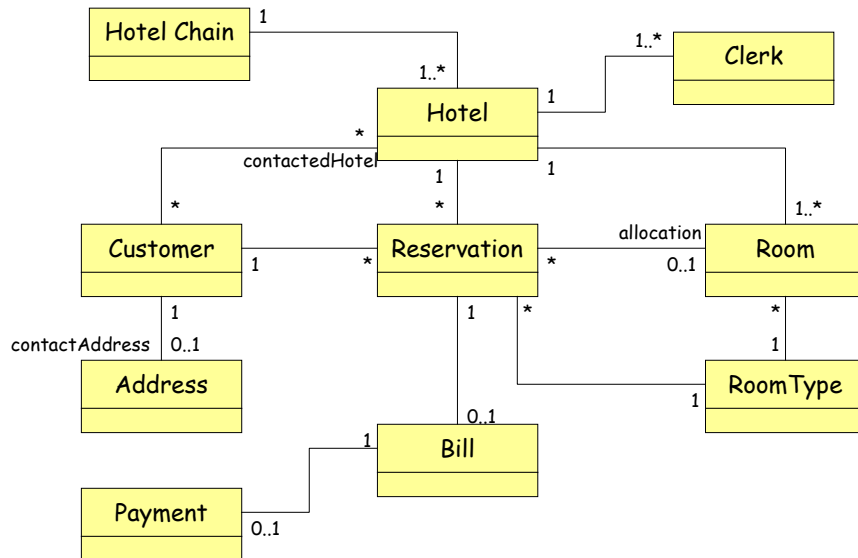


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Business Concept Model

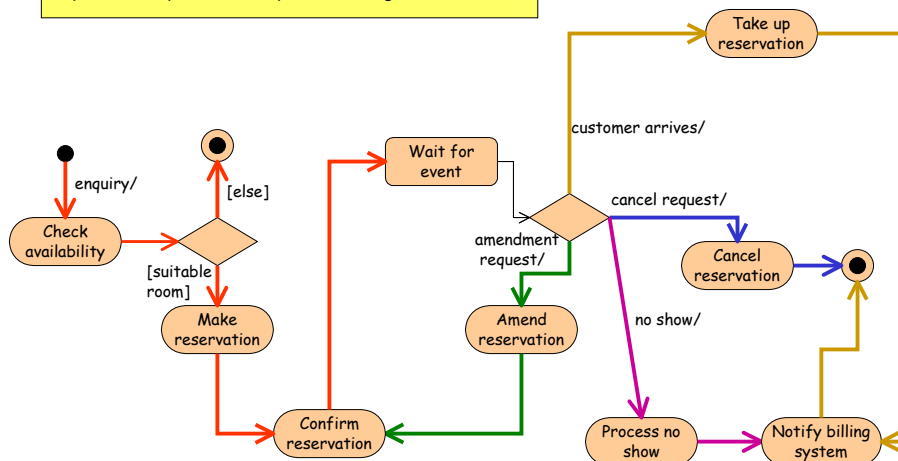


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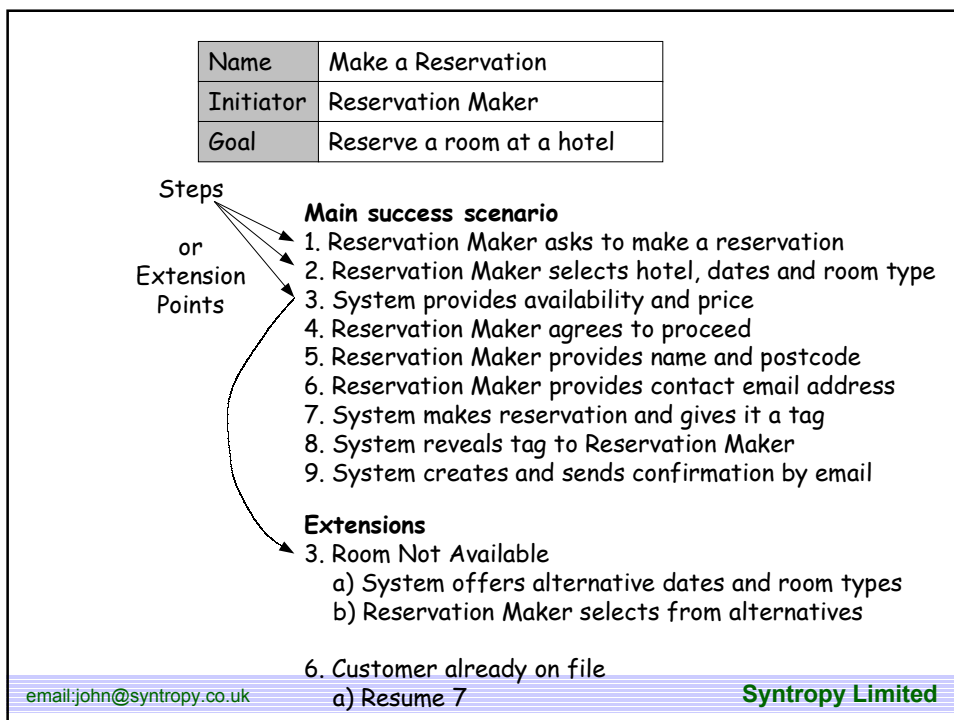
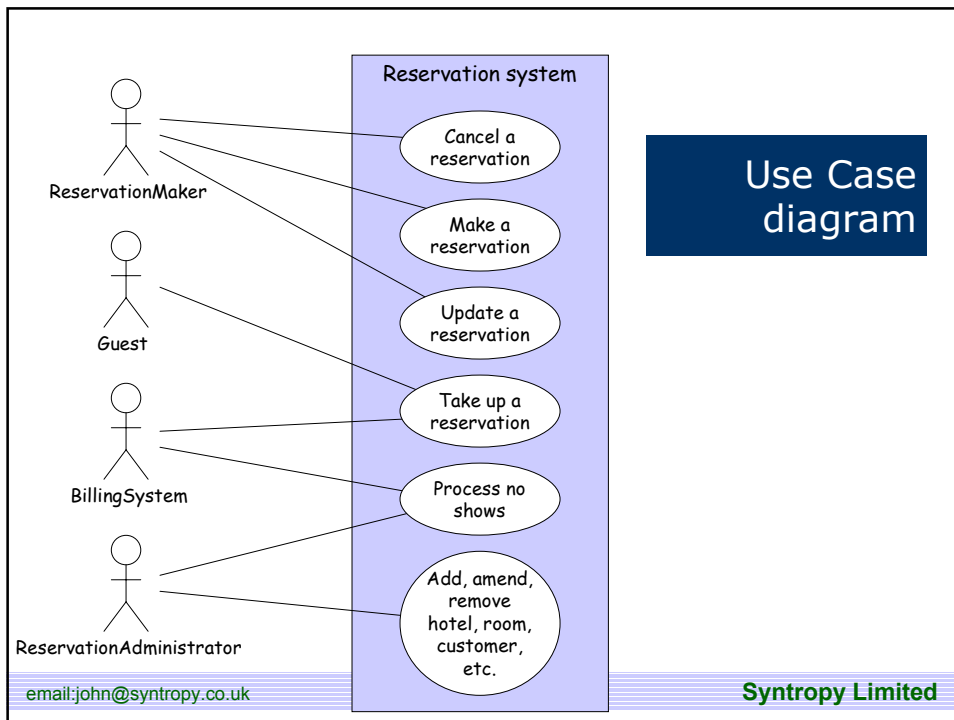
Identify Use Cases

A use case describes the interaction that follows from a single business event. Where an event triggers a number of process steps, all the steps form a single use case.

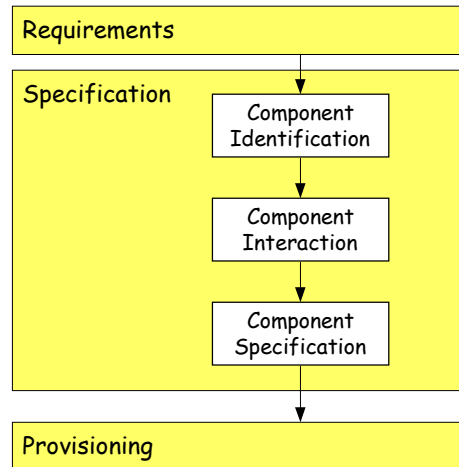


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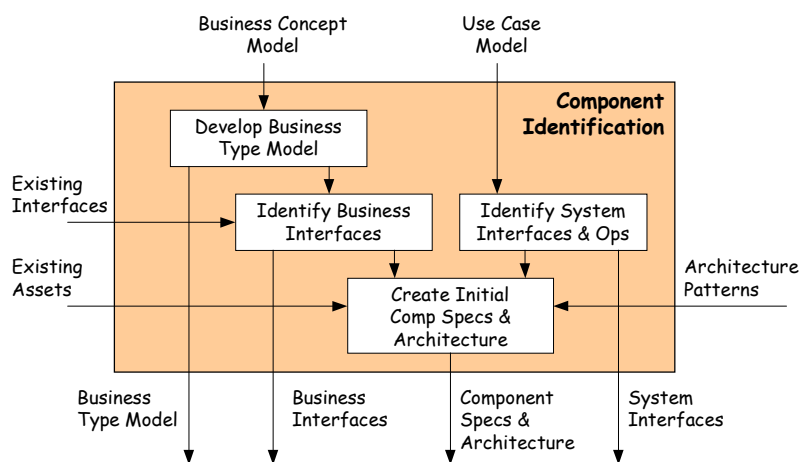
The Specification Workflow



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Component Identification

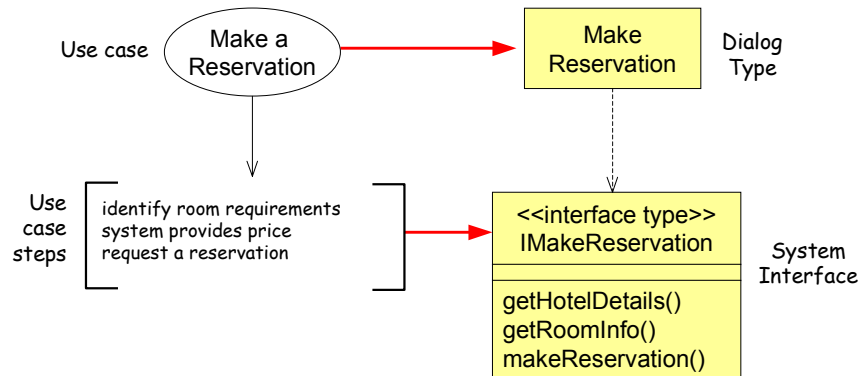


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Identify System Interfaces and Operations

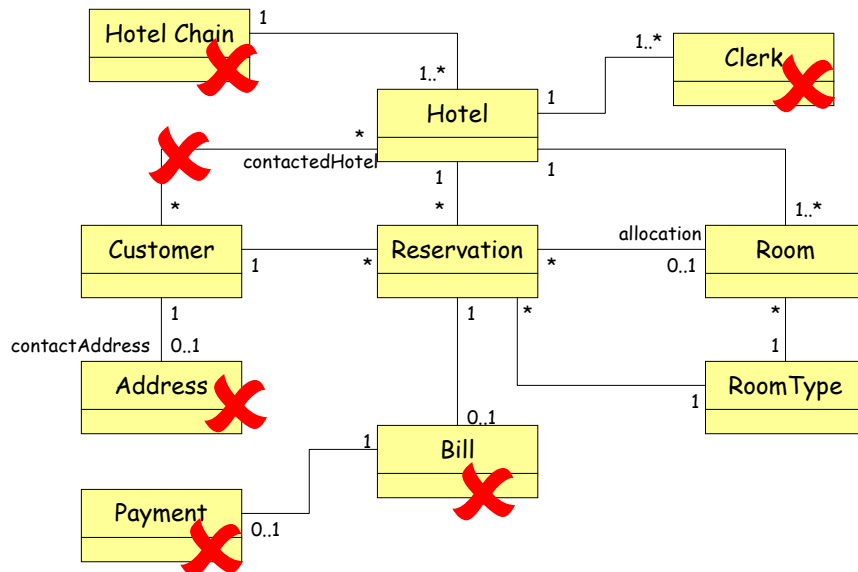
System interfaces act as facades - they are the point of contact for the UI and other external agents. They are supported by components in the system services layer.



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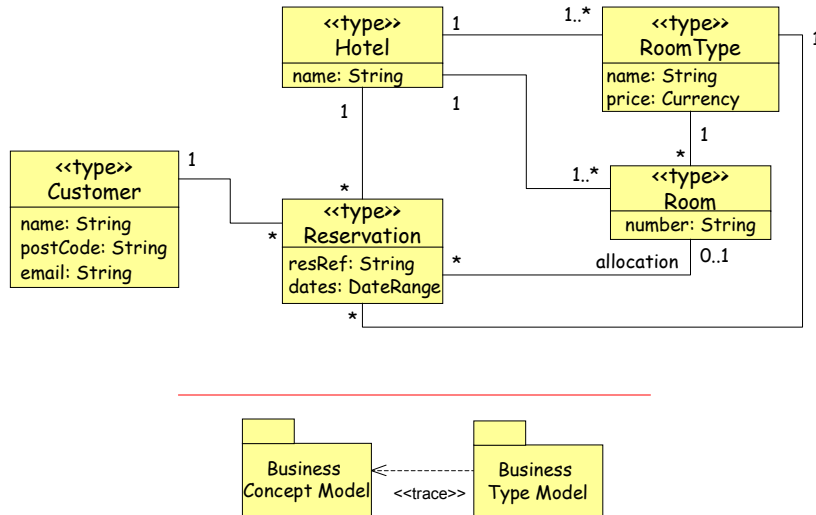
Develop the Business Type Model



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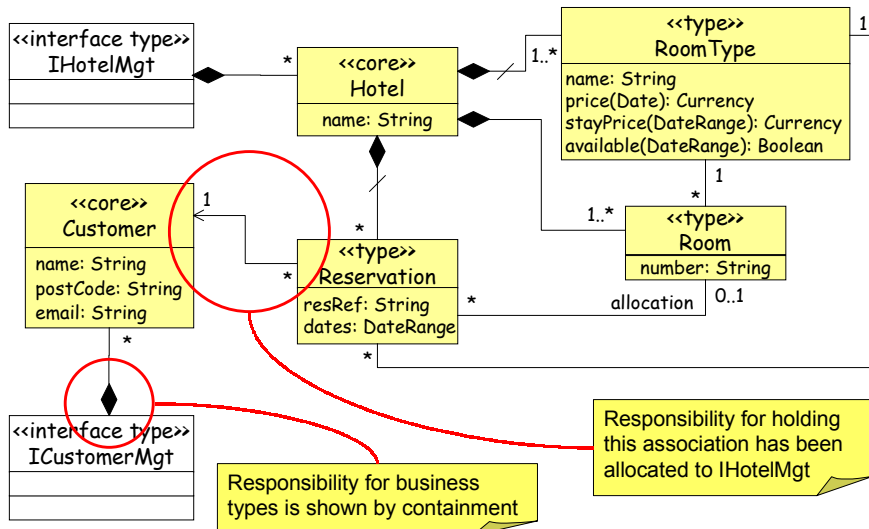
Initial Business Type Diagram



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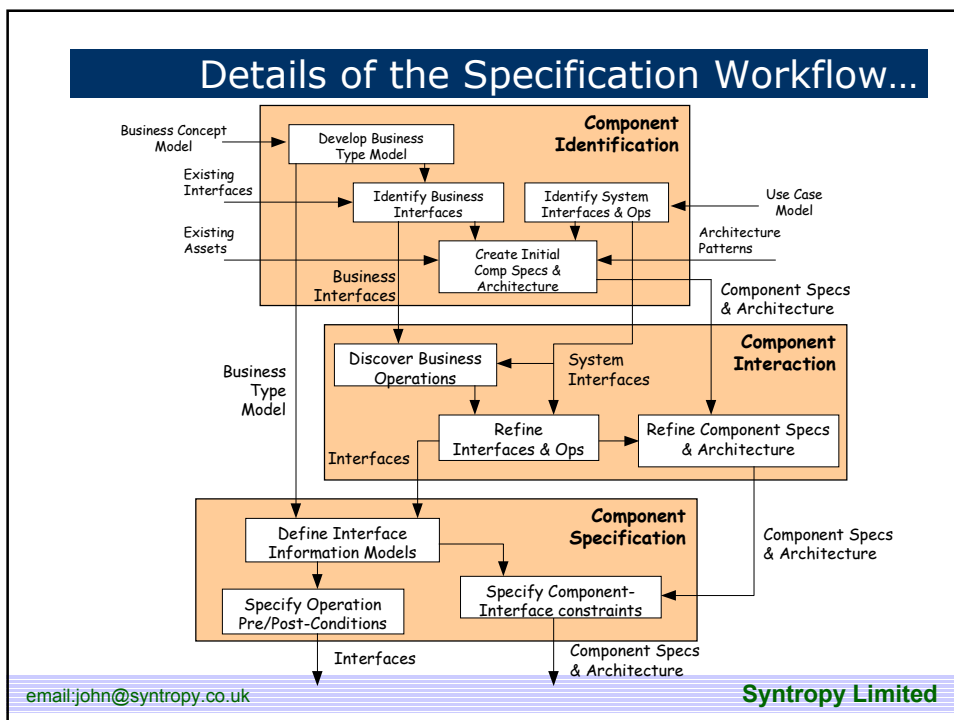
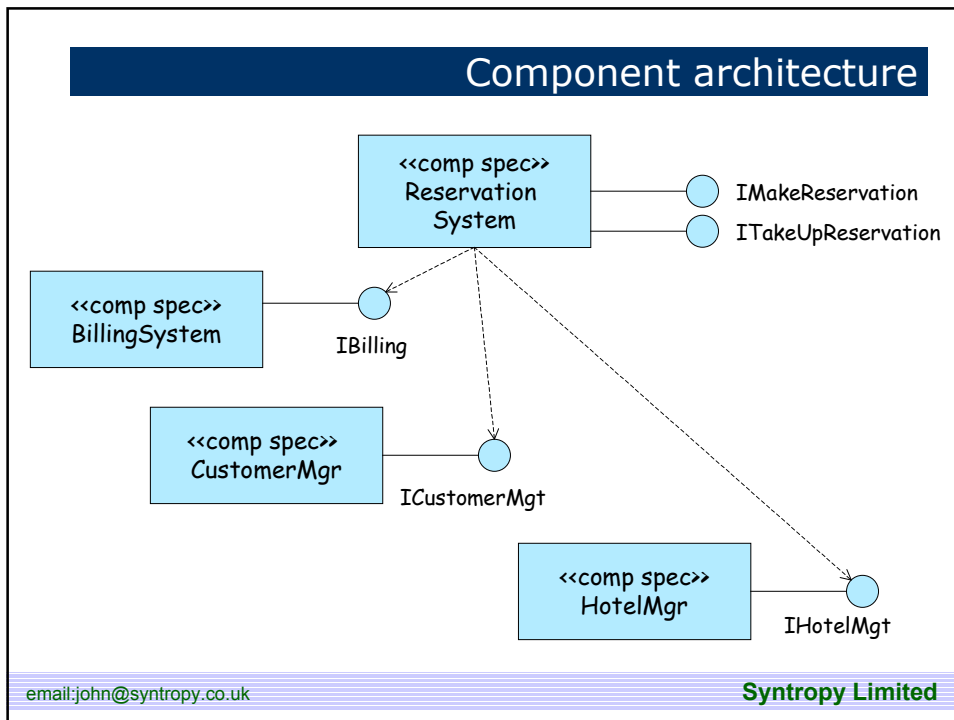
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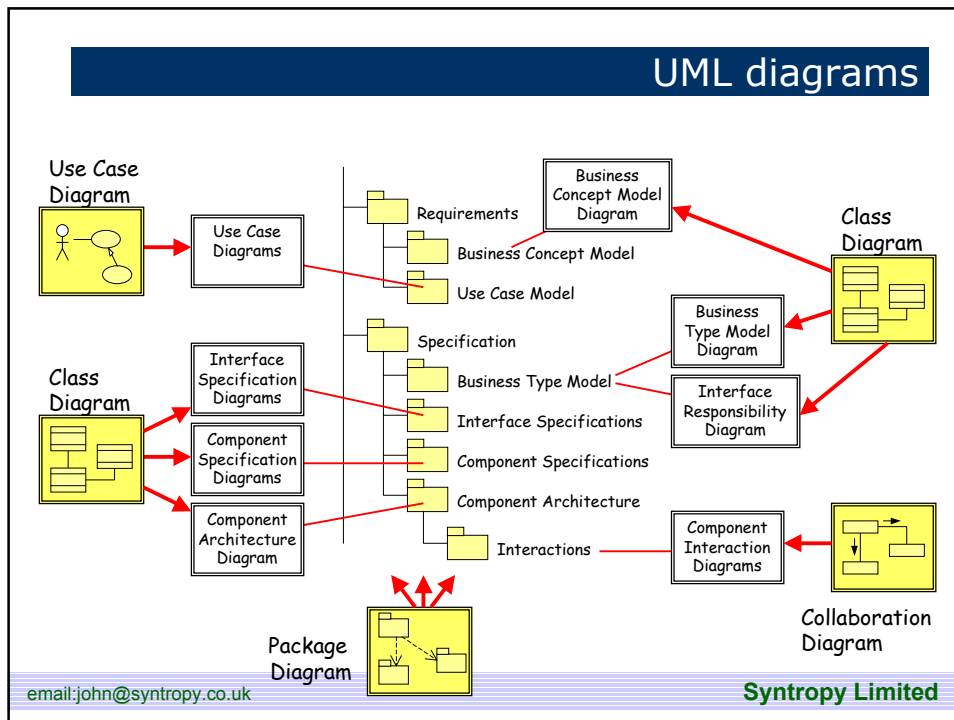
Identify business interfaces



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Want to know more?

- UML Components by John Cheesman and John Daniels, Addison-Wesley
- <http://www.umlcomponents.com>

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