	Topics
System Modelling Chapter 5.1 - 5.2	<ol> <li>1) Why model a system?</li> <li>2) How can we model the context of a system?</li> <li>3) How can we model the interactions with the system?</li> </ol>
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System modelling	Reasons for modelling
System modelling:	<ul> <li>for Requirements Engineering:</li> </ul>
<text><list-item><list-item><list-item><list-item></list-item></list-item></list-item></list-item></text>	<ul> <li>Model existing system to discuss its strengths &amp; weaknesses.</li> <li>Model new system to help show big picture of the system.</li> <li>for Design: <ul> <li>Good for seeing the big picture of a system</li> </ul> </li> <li>for Documentation: <ul> <li>Describe product to user.</li> <li>Ex: "How does this PVR menu work?!?"</li> </ul> </li> </ul>

System perspectives	UML diagram types
<ul> <li>Each model shows</li> <li>External perspective: <ul> <li>model the</li> <li>(context) where system is used.</li> </ul> </li> <li>Interaction perspective: <ul> <li>model the interactions between a system and its environment, or between the</li> </ul> </li> <li>Structural perspective: <ul> <li>model</li> <li>of a system or structure of its data.</li> </ul> </li> <li>Behavioural perspective: <ul> <li>model the dynamic behaviour of the system and how it</li> </ul> </li> </ul>	<ul> <li>shows the interactions between a system and its environment.</li> <li>shows interactions between:         <ul> <li>actors and the system or</li> <li>system components.</li> </ul> </li> <li>shows the classes in the system and the associations between these classes.</li> <li>shows how the system reacts to events.</li> </ul>
Context models (Section 5.1)	<ul> <li>Context models</li> <li>Context models:         <ul> <li>Show other systems which use or are used by the new system.</li> <li>Does <i>not</i> show the nature of the relationships: "who uses whom?"</li> </ul> </li> <li>Position of the system boundary has a         <ul> <li>on system requirements.</li> <li>political judgement</li> </ul> </li> <li>Ex: Power transformer box.</li> </ul>

	Interaction modelling
Interaction models (Section 5.2)	<ul> <li>Modelling <u>user</u> interaction <ul> <li>helps to identify user requirements.</li> </ul> </li> <li>Modelling <u>system-to-system</u> interaction <ul> <li>highlights possible</li> </ul> </li> <li>Modelling <u>component</u> interaction <ul> <li>helps us understand if system structure can deliver the required system performance and dependability.</li> </ul> </li> <li>Model these interactions using</li> </ul>
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Use case modelling	Order Out Pizza Use Case Diagram
<ul> <li>Each use case represents</li> <li>Use case shows a very high-level view <ul> <li>Actors (stick-figures): people or other systems.</li> <li>Actions (ellipses): the interaction.</li> </ul> </li> <li>Can complete the model with a of the interaction.</li> </ul>	Place Order View Order Bake Order Deliver Order Deliver Order Clerk Clerk Clerk Clerk Clerk Clerk Clerk Clerk Clerk
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Deliver Order

- 1. Chef opens order on screen.
  - 2. Chef bakes the order.
  - 3. Chef marks in system that order is ready to deliver.

- shows the sequence of interactions for a use case.



Sequence diagram details

- Rectangles on dotted "time lines" are the...
- Arrows are the "communication": network packets, method invocations, etc... - Arrows are labelled with what is going on.
- The "Alt" box shows different alternatives which may occur (like a switch statement).
- OK to leave out any details which are not relevant to the level of model you are building.

15-02-18

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