Overview

- Associations
  - Debt (SysML1 & SST)
    - Paid (SST February)
    - Unresolved (still paying interest)
- Proposals
- Summary
Association ends are properties for identifying
- ("navigating to") instances of one associated class/block ...
- ... based on ("from") instances of the other.
Association “Ends”

Model (M1)

Shopping Cart 0.. * Selection 0.. *

inCart selected Product

Things Being Modeled (M0)

Object oriented (UML/SysML1)

Mary’s Cart :
- Product 12 : inCart
- Product 13 : inCart

Joe’s Cart :
- Product 14 : inCart

Relational

Select 1 :
inCart selected Product

Mary’s Cart :
Select 2 :
inCart selected Product

Joe’s Cart :
Select 3 :
inCart selected Product

Modelled “in” associated classes/blocks

Modelled from the “middle”
Relational: Properties of Associations

Model (M1)

Object oriented

Relational

Select 1:
Product 12:
inCart
Product 13:
inCart

Select 2:
Info
Product 12:
Product 13:

Select 3:
Info
Product 14:

S1 Info:
S2 Info:
S3 Info:

Mary's Cart:
Selected Product

Joe's Cart:
Selected Product

Shopping Cart
inCart
0..*
selected
Product
0..*
Selection
info : SelectionInfo [1..*]
Relational: Connectors

- Properties typed by associations

Model (M1)

Properties

OnlineCustomer

<table>
<thead>
<tr>
<th>Structure</th>
</tr>
</thead>
<tbody>
<tr>
<td>( oc: \text{ShoppingCart} )</td>
</tr>
<tr>
<td>( os: \text{Selection} )</td>
</tr>
<tr>
<td>( op: \text{Product} )</td>
</tr>
</tbody>
</table>

Properties

\( oc: \text{ShoppingCart} [1] \)
\( os: \text{ProductSelection} [0..*] \)
\( op: \text{Product} [0..*] \)

Things Being Modeled (M0)

Select 1:
- inCart
- selected Product

Select 2:
- inCart
- selected Product

Product 12:

Product 13:

Relational
- Associating classes/blocks that you don’t “own”.
  - Ends are not “in” associated classes/blocks …
  - … but still navigable.
  - UML/SysML1 association-owned ends.
SysML1 Association Participant Properties

- **SysML 1 ParticipantProperty stereotype.**
  - Always multiplicity [1] {readonly}
Two Kinds of Association Properties

- Two kinds of properties, for navigating from:
  - One linked thing to another ("cross" properties).
  - Identify linked things (participant properties).
- Exactly one thing for each, cannot change.