Entity Model

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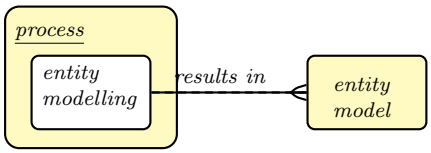
June 5, 2013

1 JCplainFig command

```
\JCplainFig{pictureFilename}{floatDirective}{Caption}
```

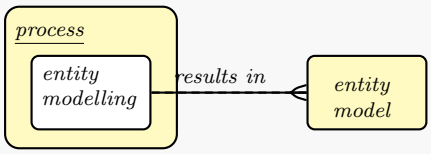
Figure 1: Picture one from folder of chapter one



2 JCboxedFig command

```
\JCboxedFig{pictureFilename}{floatDirective}{Caption}
```

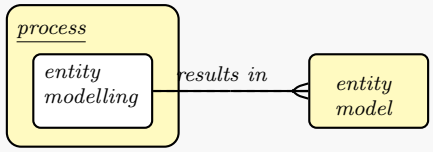
Figure 2: Picture one from folder of chapter one



3 JCbulletedFig environment

```
\begin{\JCbulletedFig}{pictureFilename}{floatDirective}{Caption}
\item{text}
\item{text}
etc.
\end{\JCbulletedFig}
```

Figure 3: Picture one from folder of chapter one with bullets



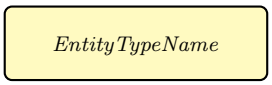
(i) item 1
(ii) item 2

4 Notation

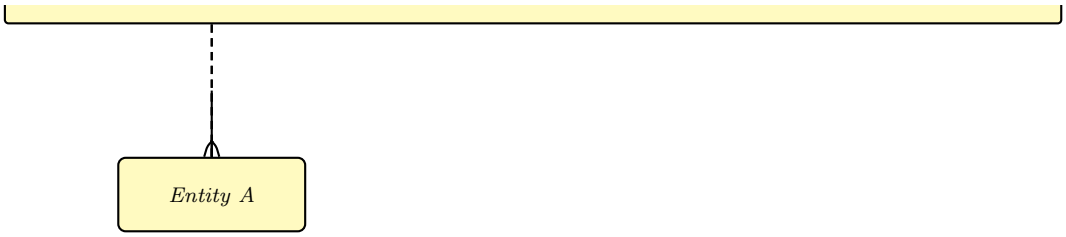
4.1 JCsimple

A macro for the simplest entity type - one with no subtypes just a name:

```
\JCsimple{bottom left x pos}{bottom left y pos}{width}{height}{entitytypename}{EntityTypeName}
```



4.2 entity model



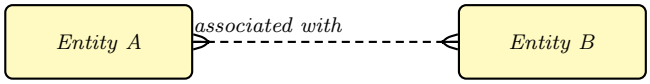
4.3 JCrel

Join two entiity types by a reference relationship:

```
\JCrel{entitytypename1<label>}{entitytypename2<label>}{cardinality indication}{rolename of relatio
```

For example

```
\JCsimple{1.5}{0}{2.5}{1}{a}{Entity A}
\JCsimple{7.5}{0}{2.5}{1}{b}{Entity B}
\JCrel{aR}{bL}{AmanyBmany}{associated with}
```



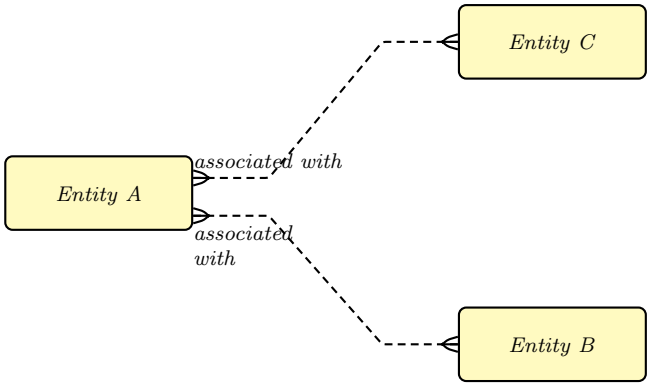
4.4 JCrel

Change the points of attachment of reference relationships

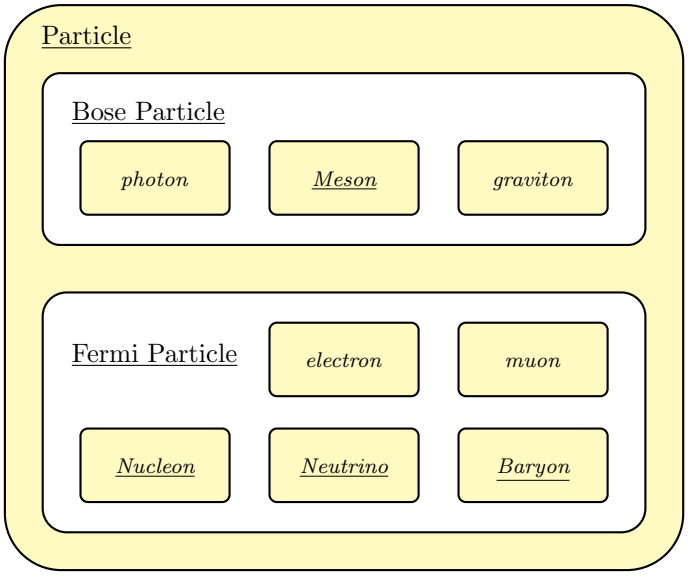
```
\JCrel{entitytypename1<label>}{entitytypename2<label>}{cardinality indication}{rolename of relatio
```

For example

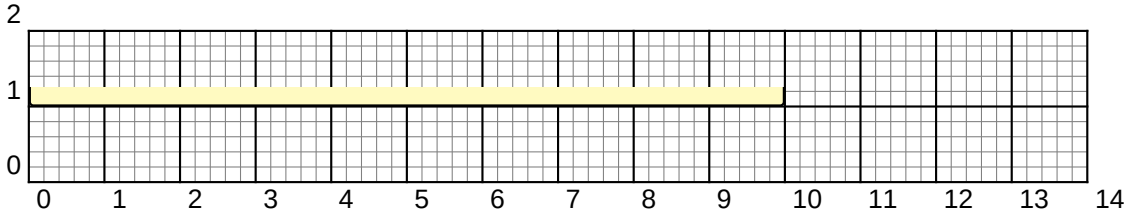
```
\JCsimple{1.5}{2}{2.5}{1}{a}{Entity A}
\JCsimple{7.5}{0}{2.5}{1}{b}{Entity B}
\JCsimple{7.5}{4}{2.5}{1}{c}{Entity C}
\JCrel{aRb}{bL}{AmanyBmany}{\parbox{2cm}{associated with}}
\JCrel{aRg}{cL}{AmanyBmany}{associated with}
```



4.5 Entity Type Nesting



4.6 The absolute

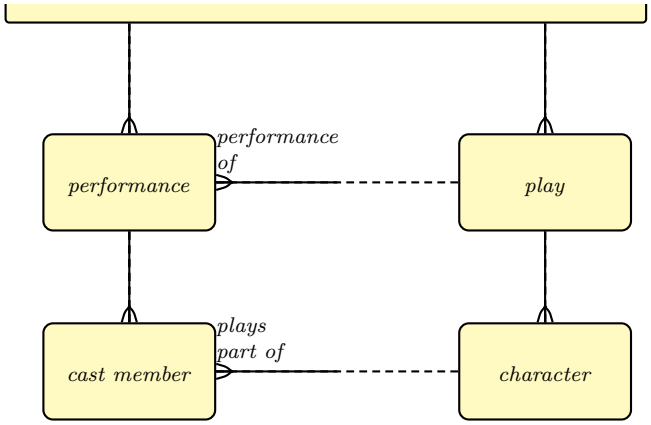


5 Scope of relationships

Most models have constraints on and between relationships and though they are significant they not expressed in the model. Constraints on the scope of a relationship are one kind of such constraint and they are the most important for reasons that we explain. The concept of the scope of a relationship is a missing concept in entity modelling.

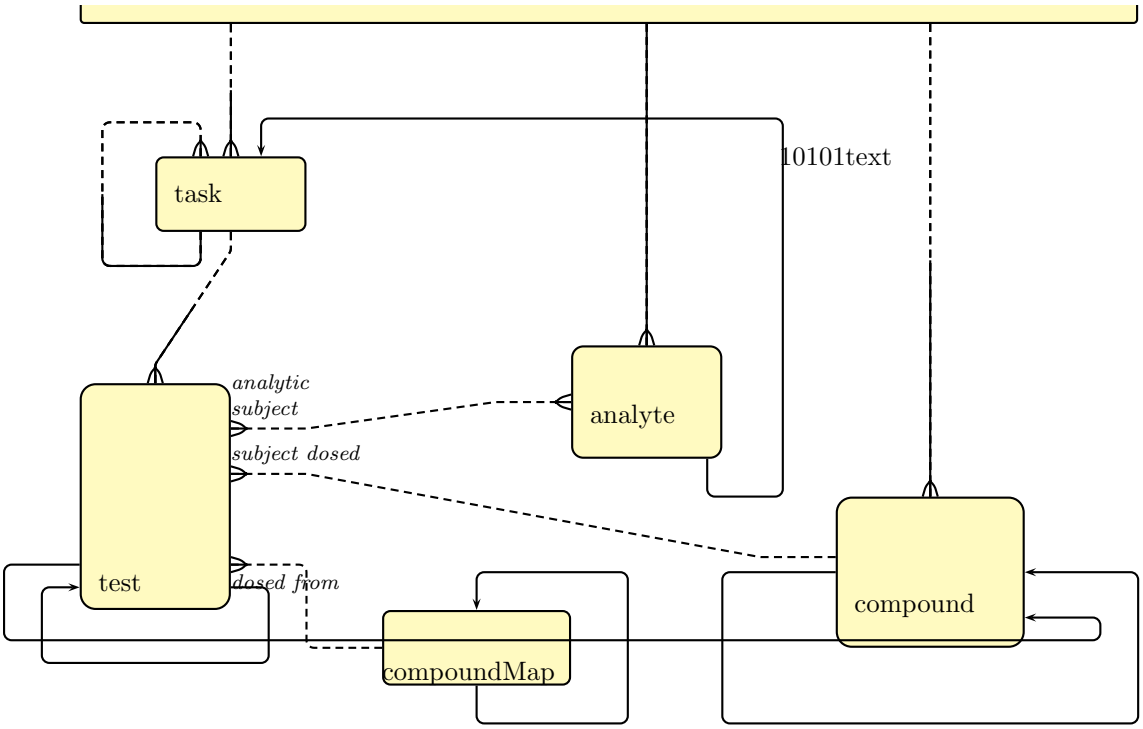
5.1 Scope Squares

Example:

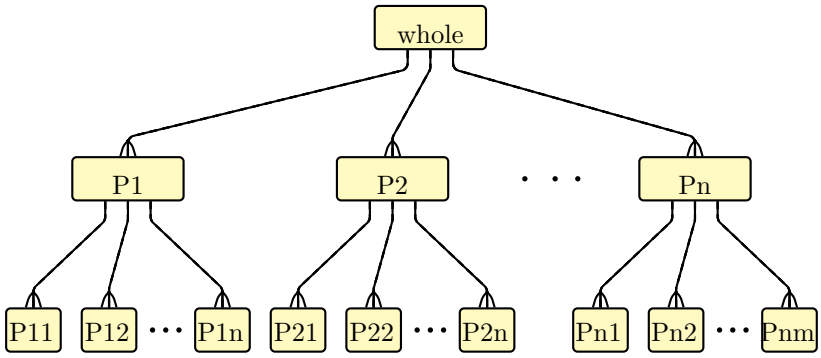


6 example

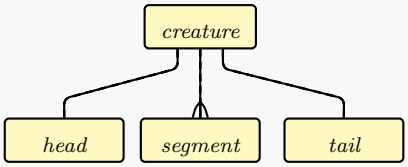
Opening text...



6.1 Spare



In some story book (I ask you to believe), every creature has a head, one or more segments and a tail:



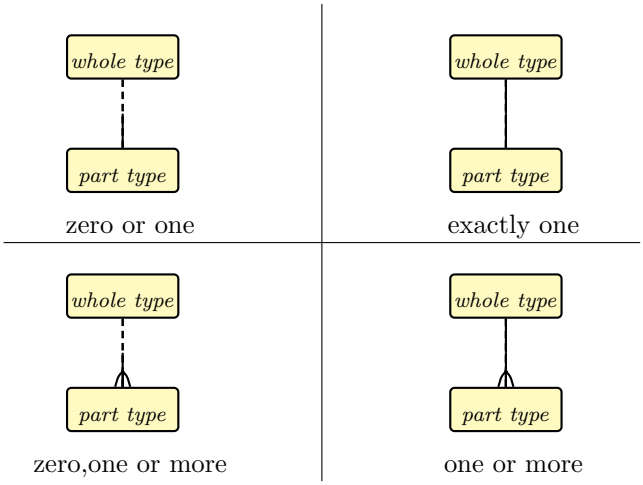
6.2 Note on Notation

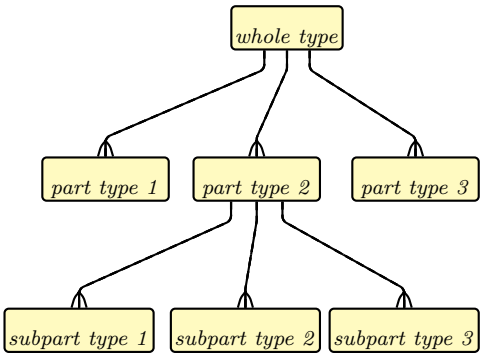
The notations that are being used are those of Richard Barker and SSADM - except that that notation does not distinguish composition relationships from any others. The idea of distinguishing composition relationships and the term itself comes from PCTE. The idea of top-down modelling

of composition relationships in entity relationships diagrams is inspired by older notations - very much as captured in the phrases 'top-down' and 'bottom-up'.

6.3 Cardinality of the Composition Relationship

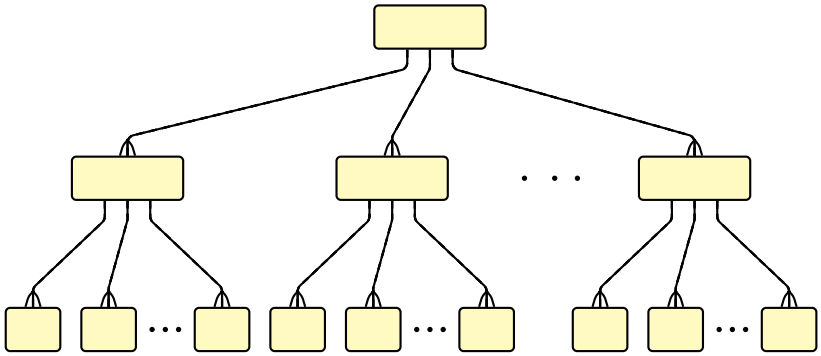
If there can be no more than one of a particular type of part in any given whole then the relationship is shown without the crows foot; if in some cases there may be no parts of a particular type then the relationship line is shown dashed. This gives four possibilities for the cardinality of the composition relationship:





6.4 Hierarchy

If there are multiple types of part each composed of multiple types of subpart we get a three level tree structure of types and relationships like this:

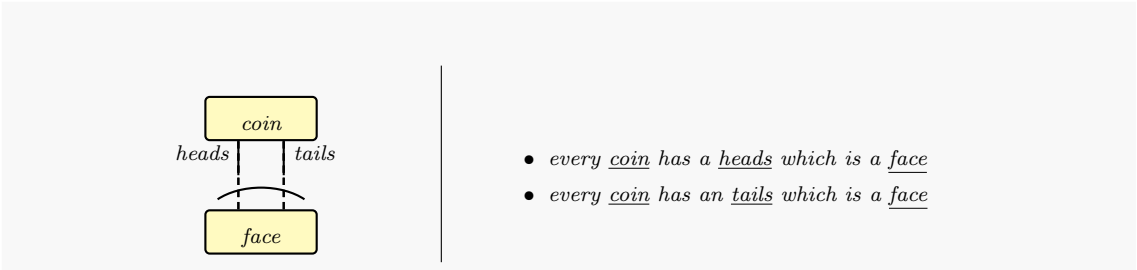


The nodes of such a tree are entity types and the branches composition relationships.

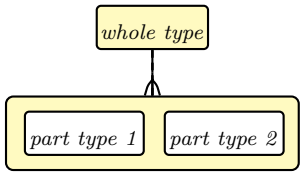
6.5 Relativisation or Localisation

Comma categories!

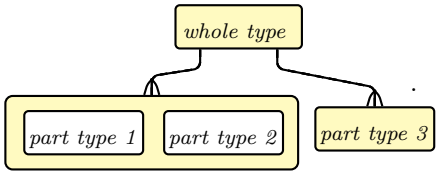
6.6 Spare



Two or more of the part types might have a common abstraction, as for example here: (d)



or here: (e)



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