

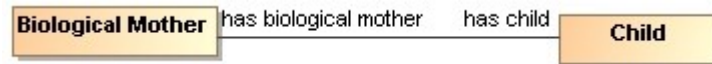
Object properties

Object properties have the following property characteristics: Inverse, Symmetric, Asymmetric, Reflexive, Irreflexive, Functional, Inverse Functional, and Transitive. An example accompanies each characteristic. The modeling tool supports exporting each characteristic; the respective OWL ontology will accompany each example.

Inverse Object Property

Sometimes you can invert directions of properties between classes. As shown in the example below, the property *hasBiologicalMother* can be seen as the inverse property of *hasChild*. Furthermore, you can see the Biological Mother and Child are connected by *hasChild*, and Child and Biological Mother are connected by *hasBiologicalMother*.

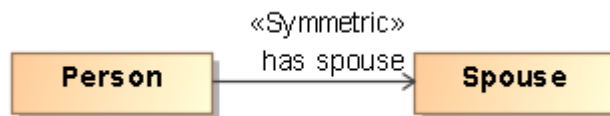
The OWL ontology is described here: [Class with inverse property](#)



Symmetric Object Property

At other times, you may want to connect classes which have the same properties. This can be done with a symmetric object property. The example below shows a Person having a Spouse. This is symmetric because that same Spouse would also have a spouse which is a Person.

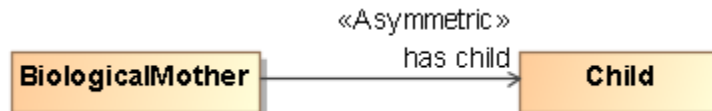
The OWL ontology is described here: [Class with symmetric object property](#)



Asymmetric Object Property

Conversely, you may want to characterize properties that are asymmetric. For instance, a biological mother has a child but a child would not have a child and characterize them as a biological mother. Hence, this is property of *hasChild* is asymmetric between a biological mother and her child.

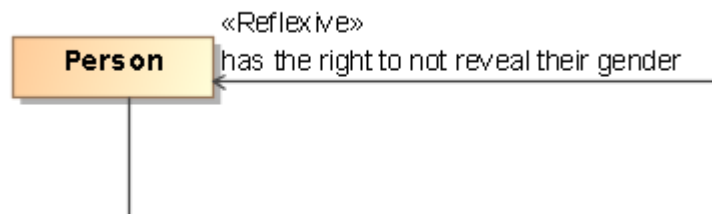
The OWL ontology is described here: [Class with Asymmetric Object Property](#)



Reflexive Object Property

This object property is used to depict properties that are reflexive to the class. For example, a Person has the right to not reveal their gender on an arbitrary application. This property relates only to that Person.

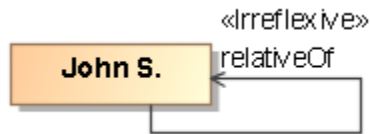
The OWL ontology is described here: [Class with Reflexive Object Property](#)



Irreflexive Object Property

On the other hand, some properties are irreflexive, meaning you cannot relate this property to the class itself. For example. John S. is not a relative of himself. Hence, the property *relativeOf* is irreflexive to John S.

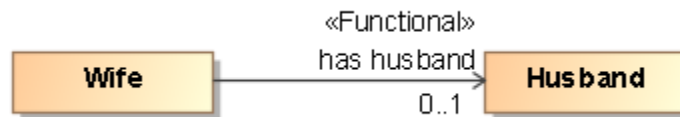
The OWL ontology is described here: [Class with Irreflexive Object Property](#)



Functional Object Property

A functional object property has a multiplicity 0..1 attached to it. The example below is about a husband and a wife, and the functional property *hasHusband* shows that the wife can have at most one husband.

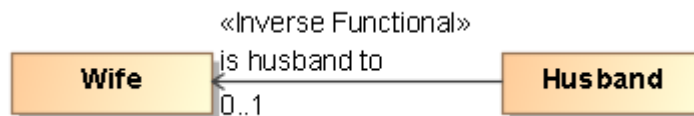
The OWL ontology is described here: [Class with Functional Object Property](#)



Inverse Functional Object Property

Like the functional object property, the inverse functional object property also has a multiplicity 0..1 attached to it. However, the inverse functional object property, according to the example below, shows that the husband can be a husband to at most one individual, a wife.

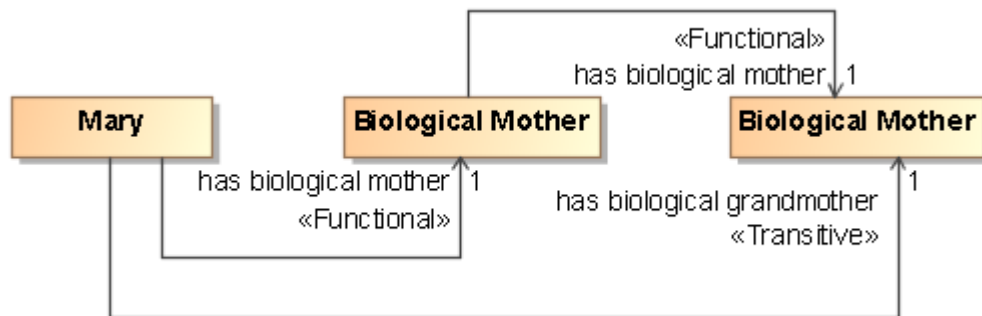
The OWL ontology is described here: [Class with Inverse Functional Object Property](#)



Transitive Object Property

The transitive object property connects two classes when one of the linked class has a connection with another class. The example below shows the transitive object property between Mary and her grandmother.

The OWL ontology is described here: [Class with Transitive Object Property](#)



Related Pages

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