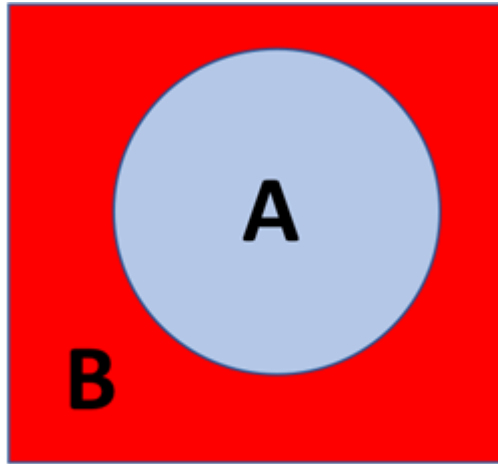# Complement Of

You can define a concept which is specifically the *complement of* a set of other concepts. Cameo Concept Modeler (CCM) supports defining complement sets, exporting complements to an ontology as appropriate corresponding OWL constructs, and importing such OWL constructs into CCM. To learn how to work with the feature, please read Working with Complement Of.

The set B, denoted by the red area, represents the complement of the set A, which is denoted in the gray area, as shown below.

Complement sets

Stating that B is the complement of A means that any individual that is a member of B is not a member of A. Furthermore, any individual in the set A is not in the set B.

CCM provides the use of a property with a *{complement of}* stereotype to specify that one concept is the complement of another concept. (Using a generalization would be incorrect, as there is no specification/generalization relationship between a concept and its complement.) Such complement concepts will be allowed to be used as the type of a restricted property, a member of a union, or a member of an intersection. The concepts in a complement relationship can be named or unnamed. If you are using a property with a specific stereotype to define the complement relationship, that property can be owned by an association. This allows for the complement relationship to be owned in a concept model that owns neither of the concepts that are part of the relationship.

```
<owl:Class rdf:about="Complements:ClassA"/>

<owl:Class rdf:about="Complements:ClassB">
    <owl:complementOf>
        <owl:Class rdf:about="Complements:ClassA"/>
    </owl:complementOf>
</owl:Class>
```

OWL Description

Importing and Exporting 'Complement Of'

CCM supports importing and exporting OWL complementOf stereotypes. When importing such a stereotype, CCM will create a complement relationship as described above. For instance, given the OWL description in the second representation above, CCM will create a complementOf relationship between two concepts A and B:

CCM will also export concepts A and B to an OWL complementOf construct, as shown in the second representation above. As a complementOf assertion can be defined in a namespace different from the namespace(s) of its domain and range, CCM will maintain that separation of the corresponding concepts and relationship in order to be able to correctly export the relationship back to OWL. As noted above, this will be possible as per the use of the {complement of} constraint on a property in CCM.