SubClassOf vs EquivalentTo

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Prerequisites

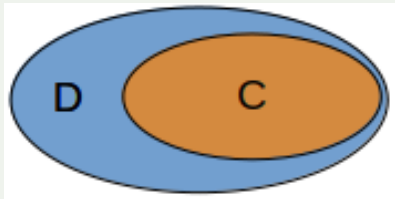
Before doing this tutorial you need to have the following knowledge:

1. Building blocks of OWL and Description Logics

The semantics of SubClassOf

Syntax

OWL	DL	Semantics

`Class: C`
`SubClassOf: D`
`Class: D`
	$C \sqsubseteq D$	

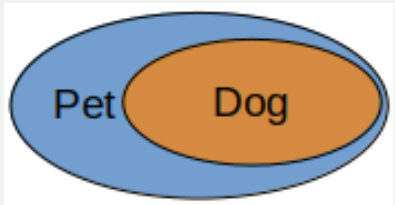
Semantics

The set C is a subset of the set D. This means every individual of C is necessarily an individual of D, but not every individual of D is necessarily an individual of C.

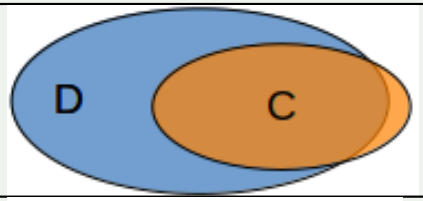
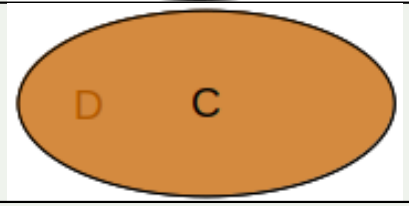
The semantics of SubClassOf

Example

OWL	DL	Semantics

`Class: Dog`
`SubClassOf: Pet`
`Class: Pet`
	$Dog \sqsubseteq Pet$	

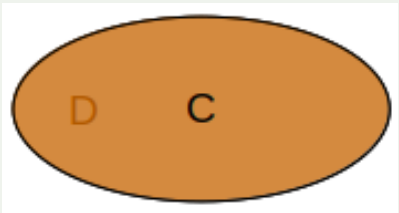
Guidance - When not to use

When not use	Venn diagram
When there is an individual of C that is not an individual of D.	
When every individual of D is also an individual of C, then prefer using `EquivalentTo`.	

The semantics of `EquivalentTo`

Syntax

OWL	DL	Semantics

`Class: C`
`EquivalentTo: D`
`Class: D`
which can be seen as shorthand for:
`Class: C`
`SubClassOf: D`
`Class: D`
`SubClassOf: C`
	$C \equiv D$
	which can be seen as shorthand for
	$C \sqsubseteq D$
	$D \sqsubseteq C$
		

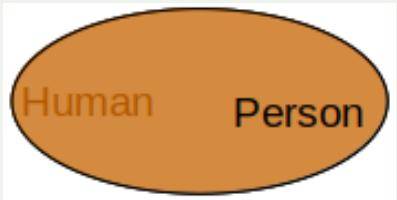
Semantics

Every individual of C is an individual of D, **and** every individual of D is an individual of C.

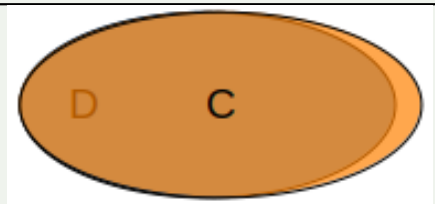
The semantics of `EquivalentTo`

Example

OWL	DL	Semantics

`Class: Person`
`EquivalentTo: Human`
`Class: Human`
	$Person \sqsubseteq Human$	

Guidance - When not to use

When not use	Venn diagram
When there is an individual of C that is not in D.	
When there is an individual of D that is not in C.