

## **Basic OWL**

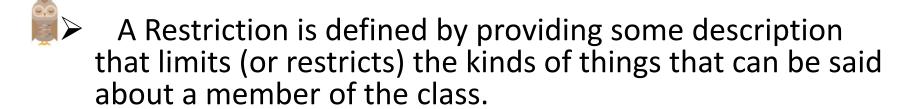
Semantic Web for the Working Ontologist Chapter 11

## Concepts in Ch.11

- owl:Restriction
- owl:hasValue
- owl:someValuesFrom
- owl:allValuesFrom
- owl:onProperty

## owl:Restriction

AAA (anyone can say anything about any topic)
The class of all things in owl (owl:Thing) is unrestricted.



A restriction is a special kind of class; membership in it must satisfy the restriction

owl:Restriction is an rdfs:subClassOf owl:Class



#### Kinds of restrictions:

#### owl:allValuesFrom

all values of the property P come from class C

#### owl:someValuesFrom

at least one value of property P comes from class C

#### owl:hasValue

Restriction has single value for a property

A restriction class in OWL is defined by the keyword owl:onProperty (a link from a restriction to the property it restricts)



The Breakfast Club -- an A & M Films/Channel production; produced by Ned Tanen and John Hughes; written and directed by John Hughes.

How can we define members of a group without explicitly naming each member as belonging to the group?

[a owl:Restriction;

owl:onProperty: InDetention;

owl:allValuesFrom :studentShermerHighSchool]

## owl:someValuesFrom

:BreakfastClub rdfs:subClassOf :studentShermerHS

:athletesShermerHS rdfs:subClassOf :studentShermerHS

:BreakfastClub

[a owl:Restriction

owl:onProperty:inDetention

owl:someValuesFrom:athletesShermerHS]



## owl:hasValue

[a owl:Restriction

owl:onProperty:InDetention

owl:hasValue:Princess]



## owl:allValuesFrom

m:BreakfastClub

rdfs:label "Breakfast Club";

[a owl:Restriction

owl:onProperty:inDetention

owl:allValuesFrom:studentShermerHS]



## There is a subtle difference between some Values From and all Values From.

Since some Values From is defined as a restriction class such that there is at least one member of a class with a particular property, then it implies that there must be such a member.

On the other hand, allValuesFrom technically means "if there are any members, then they all must have this property." This latter does not imply that there are any members.

Chapter 11, pg. 228

# Members of Breakfast Club are also Saturday detainees

```
b:BreakfastClub
     a owl:Class;
     rdfs:label "Breakfast Club";
     owl:equivalentClass
           [a owl:Restriction;
           owl:hasValue b:saturdayDetainees
           owl:onProperty:memberOf]
```