

DAML

1. DAML: DARPA Agent Markup Language
2. <http://www.daml.org>
3. DAML-ONT, DAML-L
4. DAML+OIL
5. OWL

Defining Classes and Properties

```
<Class ID="Animal">  
  <label>Animal</label>  
  <comment> This class of animals is illustrati  
    of a number of ontological idioms. </comment>  
</Class>
```

```
<Class ID="Male">  
  <subClassOf resource="#Animal"/>  
</Class>
```

```
<Class ID="Female">  
  <subClassOf resource="#Animal"/>  
  <disjointFrom resource="#Male"/>  
</Class>
```

Defining Individuals

```
<Class ID="Fred">  
  <label>Fred</label>  
  <comment> Fred is an idiot. </comment>  
</Class>
```

Relating Individuals through Properties

```
<Property ID="parent">  
  <cardinality>2</cardinality>  
  <domain resource="#Animal"/>  
</Property>
```

Defining Attributes of Classes

```
<Class ID="parent">
  <subclassOf resource="#Animal"/>
  <restrictedBy>
    <Restriction>
      <onProperty resource="#parent"/>
      <toClass resource="#Person"/>
    </Restriction>
  </restrictedBy>
</Class>
```

Defining Attributes of Classes (cont)

```
<Person ID="Joe">  
  <label> Joe</label>  
  <comment> Joe is a person.</comment>  
</Person>
```

```
<Class ID="Man">  
  <subClassOf resource="#Person"/>  
  <subClassOf resource="#Male"/>  
</Class>
```

```
<Class ID="Woman">  
  <subClassOf resource="#Person"/>  
  <subClassOf resource="#Female"/>  
</Class>
```

Using Properties

```
<Property ID="father">
  <subProperty resource="#Parent"/>
  <range resource="#Man"/>
  <cardinality>1</cardinality>
</Property>
```

```
<UniqueProperty ID="mother">
  <subProperty resource="#Parent"/>
  <range resource="#Woman"/>
</UniqueProperty>
```

```
<Property ID="mom">
  <equivalentTo resource="#Mother"/>
</Property>
```

Using Properties (cont)

```
<Property ID="child">  
  <inverseOf resource="#Parent"/>  
</Property>
```

```
<TransitiveProperty ID="ancestor">  
</TransitiveProperty>
```

```
<TransitiveProperty ID="descendant"/>
```

```
<Property ID="occupation">  
  <maxCardinality>1</maxcardinality>  
</Property>
```


Using Properties (cont)

```
<Class ID="Car">
  <comment>no car is a person </comment>
</subClassOf>
  <Class>
    <complementOf resource="#Person"/>
  </Class>
</subClassOf>
</Class>
```

Using Properties (cont)

```
<Property ID="child">  
  <inverseOf resource="#Parent"/>  
</Property>
```

```
<TransitiveProperty ID="ancestor">  
</TransitiveProperty>
```

```
<TransitiveProperty ID="descendant"/>
```

```
<Property ID="occupation">  
  <maxCardinality>1</maxcardinality>  
</Property>
```

Using Properties (cont)

```
<Class about="#Person">
  <comment>every person is a
    man or a woman</comment>
</subClassOf>
  <Class>
    <complementOf resource="#Person"/>
  </Class>
</subClassOf>
</Class>
```

Using Properties (cont)

```
<Property ID="child">  
  <inverseOf resource="#Parent"/>  
</Property>
```

```
<TransitiveProperty ID="ancestor">  
</TransitiveProperty>
```

```
<TransitiveProperty ID="descendant"/>
```

```
<Property ID="occupation">  
  <maxCardinality>1</maxcardinality>  
</Property>
```

Using Properties (cont)

```
<Class ID="Car">
  <comment>no car is a person </comment>
  <subClassOf>
    <Class>
      <complementOf resource="#Person"/>
    </Class>
  </subClassOf>
</Class>
```

Using Properties (cont)

```
<Class about="Person">
  <comment>every person is a man or
    a woman </comment>
  <disjointUnionOf parseType="daml:collection">
    <Class about="#Man"/>
    <Class about="#Woman"/>
  </disjointUnionOf>
</Class>

<Property ID="hasHeight">
  <domain resource="#Person"/>
  <range resource="#Height"/>
</disjointUnionOf>
</Class>

<Class ID="Height">
  <oneof parseType="daml:collection">
    <Height ID="short"/>
    <Height ID="medium"/>
    <Height ID="large"/>
  </oneOf>
</Class>
```

Using Properties (cont)

Usage

```
<rdf:RDF
  xmlns:rdf
    ="http://www.w3.org/
      1999/02/22-rdf-syntax-ns#">
  xmlns:
    ="http://www.daml.org/2000/10/daml-ont#">
  xmlns:daml
    ="http://www.daml.org/2000/10/daml-ont#">
>
```