

# Javadoc of project Keltsi

Antti Htinen, Arno Aalto, Merja Jalava, Tuomo Kajava, Petri Lindgren

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# Class Hierarchy

## Classes

- `java.lang.Object`
  - `com.hp.hpl.mesa.rdf.jena.common.ModelCom`
    - `com.hp.hpl.mesa.rdf.jena.mem.ModelMem`
      - `com.hp.hpl.jena.daml.common.DAMLModelImpl`
        - `fi.helsinki.cs.keltsi.jenardf.KeltsiDAML` (in 1.1.6, page 15)
- `fi.helsinki.cs.keltsi.jenardf.Keltsi` (in 1.1.4, page 8)
- `fi.helsinki.cs.keltsi.jenardf.KeltsiResource` (in 1.1.7, page 25)
  - `fi.helsinki.cs.keltsi.jenardf.Advertisement` (in 1.1.1, page 4)
  - `fi.helsinki.cs.keltsi.jenardf.Contact` (in 1.1.2, page 5)
  - `fi.helsinki.cs.keltsi.jenardf.ImageFile` (in 1.1.3, page 7)
  - `fi.helsinki.cs.keltsi.jenardf.KeltsiClass` (in 1.1.5, page 11)
  - `fi.helsinki.cs.keltsi.jenardf.Service` (in 1.1.9, page 28)
- `fi.helsinki.cs.keltsi.jenardf.Ontology` (in 1.1.8, page 27)
- `fi.helsinki.cs.keltsi.tags.Html` (in 3.1.3, page 38)
- `fi.helsinki.cs.keltsi.tags.Link` (in 3.1.5, page 44)
- `fi.helsinki.cs.keltsi.util.ResultIterator` (in 5.1.1, page 58)
- `javax.servlet.jsp.tagext.TagSupport`
  - `fi.helsinki.cs.keltsi.tags.DisplayAdvertisement` (in 3.1.1, page 35)
  - `fi.helsinki.cs.keltsi.tags.DisplayServiceClass` (in 3.1.2, page 37)
  - `fi.helsinki.cs.keltsi.tags.Init` (in 3.1.4, page 42)
  - `fi.helsinki.cs.keltsi.tags.OntologySearch` (in 3.1.6, page 46)
  - `fi.helsinki.cs.keltsi.tags.OtherServices` (in 3.1.7, page 48)
  - `fi.helsinki.cs.keltsi.tags.Search` (in 3.1.8, page 49)
  - `fi.helsinki.cs.keltsi.tags.SemanticLinks` (in 3.1.9, page 51)
  - `fi.helsinki.cs.keltsi.tags.ServiceClassInit` (in 3.1.10, page 53)
- `junit.framework.Assert`
  - `junit.framework.TestCase`
    - `fi.helsinki.cs.keltsi.jenardf.test.TestAdvertisement` (in 2.1.1, page 32)
    - `fi.helsinki.cs.keltsi.tags.test.TestDisplayAdvertisement` (in 4.1.1, page 55)

# Chapter 1

## Package fi.helsinki.cs.keltsi.jenardf

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---

## 1.1 Classes

### 1.1.1 Class Advertisement

---

#### Declaration

```
public class Advertisement
extends fi.helsinki.cs.keltsi.jenardf.KeltsiResource (in 1.1.7, page 25)
```

#### Method summary

```
getImageFile()
getLabel()
getServices()
```

#### Methods

---

- *getImageFile*  
public ImageFile getImageFile( )
- *getLabel*  
public java.lang.String getLabel( )
- *getServices*  
public java.util.Iterator getServices( )

Members inherited from class fi.helsinki.cs.keltsi.jenardf.KeltsiResource (in 1.1.7, page 25)

---

- public int compareTo( java.lang.Object other )
- public boolean equals( java.lang.Object object )
- public String getLabel( )
- protected KeltsiDAML getModel( )
- public String getNameSpace( )
- public DAMLCommon getResource( )
- public String getSingleLiteralValue( com.hp.hpl.mesa.rdf.jena.model.Property property )
- public KeltsiClass getType( )
- public String getURI( )
- public int hashCode( )
- protected resource
- public String toString( )

### 1.1.2 Class Contact

---

#### Declaration

```
public class Contact
extends fi.helsinki.cs.keltsi.jenardf.KeltsiResource (in 1.1.7, page 25)
```

#### Method summary

```
getAddress()
getEmail()
getFax()
getLabel()
getOpeningHours()
getTelephone()
getUrl()
hasLabel()
```

#### Methods

---

- *getAddress*  
public java.lang.String getAddress( )
- *getEmail*  
public java.lang.String getEmail( )
- *getFax*  
public java.lang.String getFax( )
- *getLabel*  
public java.lang.String getLabel( )
- *getOpeningHours*  
public java.lang.String getOpeningHours( )
- *getTelephone*  
public java.lang.String getTelephone( )
- *getUrl*  
public java.lang.String getUrl( )
- *hasLabel*  
public boolean hasLabel( )

Members inherited from class fi.helsinki.cs.keltsi.jenardf.KeltsiResource (in 1.1.7, page 25)

---

- public int compareTo( java.lang.Object other )
- public boolean equals( java.lang.Object object )
- public String getLabel( )
- protected KeltsiDAML getModel( )
- public String getNameSpace( )
- public DAMLCommon getResource( )

- `public String getSingleLiteralValue( com.hp.hpl.mesa.rdf.jena.model.Property property )`
- `public KeltsiClass getType( )`
- `public String getURI( )`
- `public int hashCode( )`
- `protected resource`
- `public String toString( )`

### 1.1.3 Class ImageFile

---

#### Declaration

```
public class ImageFile
extends fi.helsinki.cs.keltsi.jenardf.KeltsiResource (in 1.1.7, page 25)
```

#### Method summary

**path()**

#### Methods

---

- *path*  
public java.lang.String path( )

Members inherited from class fi.helsinki.cs.keltsi.jenardf.KeltsiResource (in 1.1.7, page 25)

---

- public int compareTo( java.lang.Object other )
- public boolean equals( java.lang.Object object )
- public String getLabel( )
- protected KeltsiDAML getModel( )
- public String getNameSpace( )
- public DAMLCommon getResource( )
- public String getSingleLiteralValue( com.hp.hpl.mesa.rdf.jena.model.Property property )
- public KeltsiClass getType( )
- public String getURI( )
- public int hashCode( )
- protected resource
- public String toString( )



### 1.1.4 Class Keltsi

---

Defines the vocabulary for the Keltsi-project. Static instances of resources and properies are provided. Adds statements to the model to implement the transitivity and reflexiveness of RDFS.subPropertyOf and the implications on RDF.type. The latter is done just to speed things. The former is done to be able to express queries in RDQL.

#### Declaration

```
public class Keltsi
  extends java.lang.Object
```

#### Field summary

**additionalServices**  
**address**  
**Advertisement**  
**contact**  
**Contact**  
**description**  
**email**  
**fax**  
**imageFile**  
**ImageFile**  
**instanceCount**  
**label**  
**literalProperty**  
**missingAd**  
**openingHours**  
**path**  
**Product**  
**productClassProperty**  
**ProductRoot**  
**provides**  
**recommends**  
**Service**  
**serviceClassProperty**  
**serviceProperty**  
**ServiceRoot**  
**services**  
**subClassOf**  
**subPropertyOf**  
**synonym**  
**telephone**  
**type**  
**uri**  
**url**

#### Constructor summary

**Keltsi()**

## Method summary

`getURI()` returns the URI for this schema  
`initialize(KeltsiDAML)`

## Fields

---

- protected static final java.lang.String **uri**
- public static KeltsiClass **ServiceRoot**
- public static KeltsiClass **ProductRoot**
- public static com.hp.hpl.jena.daml.DAMLCClass **Service**
- public static com.hp.hpl.jena.daml.DAMLCClass **Product**
- public static com.hp.hpl.jena.daml.DAMLCClass **Advertisement**
- public static com.hp.hpl.jena.daml.DAMLCClass **Contact**
- public static com.hp.hpl.jena.daml.DAMLCClass **ImageFile**
- public static com.hp.hpl.jena.daml.DAMLInstance **missingAd**
- public static com.hp.hpl.jena.daml.DAMLProperty **synonym**
- public static com.hp.hpl.jena.daml.DAMLProperty **contact**
- public static com.hp.hpl.jena.daml.DAMLProperty **recommends**
- public static com.hp.hpl.jena.daml.DAMLProperty **additionalServices**
- public static com.hp.hpl.jena.daml.DAMLProperty **provides**
- public static com.hp.hpl.jena.daml.DAMLProperty **productClassProperty**
- public static com.hp.hpl.jena.daml.DAMLProperty **serviceClassProperty**
- public static com.hp.hpl.jena.daml.DAMLProperty **serviceProperty**
- public static com.hp.hpl.jena.daml.DAMLProperty **literalProperty**
- public static com.hp.hpl.jena.daml.DAMLProperty **address**
- public static com.hp.hpl.jena.daml.DAMLProperty **telephone**
- public static com.hp.hpl.jena.daml.DAMLProperty **email**
- public static com.hp.hpl.jena.daml.DAMLProperty **fax**
- public static com.hp.hpl.jena.daml.DAMLProperty **url**
- public static com.hp.hpl.jena.daml.DAMLProperty **imageFile**
- public static com.hp.hpl.jena.daml.DAMLProperty **openingHours**
- public static com.hp.hpl.jena.daml.DAMLProperty **path**

- public static com.hp.hpl.jena.daml.DAMLProperty **services**
- public static com.hp.hpl.jena.daml.DAMLProperty **label**
- public static com.hp.hpl.jena.daml.DAMLProperty **description**
- public static com.hp.hpl.jena.daml.DAMLProperty **subClassOf**
- public static com.hp.hpl.jena.daml.DAMLProperty **subPropertyOf**
- public static com.hp.hpl.jena.daml.DAMLProperty **type**
- public static com.hp.hpl.jena.daml.DAMLProperty **instanceCount**

## Constructors

---

- *Keltsi*  
public **Keltsi**( )

## Methods

---

- *getURI*  
public static java.lang.String **getURI**( )
    - **Description**  
returns the URI for this schema
    - **Returns** – the URI for this schema
- 
- *initialize*  
public static void **initialize**( **KeltsiDAML model** )

### 1.1.5 Class KeltsiClass

---

Class representing RDFS.Class -objects There are three distinct subclasses, (1) a KeltsiClass of Services (2) a KeltsiClass of Products (3) a KeltsiClass of an additional ontology. Since they behave identically, subclassing has been removed. Methods to make the distinction are provided.

#### Declaration

```
public class KeltsiClass
  extends fi.helsinki.cs.keltsi.jenardf.KeltsiResource (in 1.1.7, page 25)
```

#### Method summary

**getDefinedSubPropertiesOf(DAMLProperty)** Provide an iterator over all the possible properties that are immediate subproperties of property.

**getInstanceCount(boolean)**

**getInstances(boolean)** Get an iterator over instances of this class.

**getSubClasses(boolean)** Iterator over the subclasses of this class.

**getSubClassesSorted()**

**getSuper()** Get the direct superclass of this class.

**getSuperClasses(boolean)** Iterator over the superclasses of this class.

**getTop()** Get the topmost superclass of this class before rdfs:Resource or daml:Thing or whatever.

**hasSubClass(KeltsiClass)** Is the supplied class a subclass of this class?

**hasSuperClass(KeltsiClass)** Is the supplied class a superclass of this class?

**isProductClass()** Does this class have Products as instances?

**isServiceClass()** Does this class have Services as instances?

**isTop()** Is this class right below Thing or Resource or whatever?

**toString()**

#### Methods

---

- *getDefinedSubPropertiesOf*

```
public java.util.Iterator getDefinedSubPropertiesOf(
  com.hp.hp1.jena.daml.DAMLProperty property )
```

  - **Description**  
Provide an iterator over all the possible properties that are immediate subproperties of property.
  - **Parameters**  
\* **property** – The superproperty whose subproperties can only be returned
- *getInstanceCount*

```
public int getInstanceCount( boolean close )
```
- *getInstances*

```
public java.util.Iterator getInstances( boolean close )
```

  - **Description**  
Get an iterator over instances of this class. If close is false, only the direct instances will be included. If close is true, instances will be gathered from the transitive closure of the inverse of rdfs:subPropertyOf and this class.

- **Parameters**
  - \* `close` – Supply transitive closure if true.
- **Returns** – An iterator over instances.

---

- *getSubClasses*

```
public java.util.Iterator getSubClasses( boolean close )
```

- **Description**

Iterator over the subclasses of this class. The iterator holds either only the direct subclasses (`close` is false) or the transitive closure of the inverse of the property `subClassOf`.
- **Parameters**
  - \* `close` – Supply transitive closure if true.
- **Returns** – Iterator over subclasses of this class.

---

- *getSubClassesSorted*

```
public java.util.Iterator getSubClassesSorted( )
```

- *getSuper*

```
public KeltsiClass getSuper( )
```

- **Description**

Get the direct superclass of this class. Assuming there is only one, as is the case in the current data.
- **Returns** – The direct superclass of this class.

---

- *getSuperClasses*

```
public java.util.Iterator getSuperClasses( boolean close )
```

- **Description**

Iterator over the superclasses of this class. The iterator holds either only the direct superclasses (`close` is false) or the transitive closure of the property `subClassOf`.
- **Parameters**
  - \* `close` – Supply transitive closure if true.
- **Returns** – Iterator over superclasses of this class.

---

- *getTop*

```
public KeltsiClass getTop( )
```

- **Description**

Get the topmost superclass of this class before `rdfs:Resource` or `daml:Thing` or whatever.
- **Returns** – The topmost superclass of this class.

---

- *hasSubClass*

```
public boolean hasSubClass( KeltsiClass cls )
```

- **Description**

Is the supplied class a subclass of this class?
- **Parameters**
  - \* `cls` – The candidate to be a subclass.

- **Returns** – Boolean indicating whether the class is a subclass of this class.

---

- *hasSuperClass*

```
public boolean hasSuperClass( KeltsiClass cls )
```

- **Description**

Is the supplied class a superclass of this class?

- **Parameters**

\* `cls` – The candidate to be a superclass.

- **Returns** – Boolean indicating whether the class is a superclass of this class.

---

- *isProductClass*

```
public boolean isProductClass( )
```

- **Description**

Does this class have Products as instances? In other words, is this class a subclass of ProductRoot. At the moment there are no Products as instances, but that need not to be the case. If a class is neither a ServiceClass nor a ProductClass it is an auxiliary OntologyClass (Location etc).

- **Returns** – True if this class has Products as instances.

---

- *isServiceClass*

```
public boolean isServiceClass( )
```

- **Description**

Does this class have Services as instances? In other words, is this class a subclass of ServiceRoot. If a class is neither a ServiceClass nor a ProductClass it is an auxiliary OntologyClass (Location etc).

- **Returns** – True if this class has Services as instances.

---

- *isTop*

```
public boolean isTop( )
```

- **Description**

Is this class right below Thing or Resource or whatever?

- **Returns** – True if this class is topmost in its ontology.

---

- *toString*

```
public java.lang.String toString( )
```

- **Description copied from KeltsiResource (in 1.1.7, page 25)**

Override Object.toString()

**Members inherited from class fi.helsinki.cs.keltsi.jenardf.KeltsiResource (in 1.1.7, page 25)**

---

- public int compareTo( java.lang.Object other )
- public boolean equals( java.lang.Object object )
- public String getLabel( )
- protected KeltsiDAML getModel( )
- public String getNameSpace( )
- public DAMLCommon getResource( )

- `public String getSingleLiteralValue( com.hp.hpl.mesa.rdf.jena.model.Property property )`
- `public KeltsiClass getType( )`
- `public String getURI( )`
- `public int hashCode( )`
- `protected resource`
- `public String toString( )`

### 1.1.6 Class KeltsiDAML

---

The model extends DAMLModelImpl for now. Better solution could be to throw all DAML-stuff away and use basic ModelMem or ModelRDB. DAMLModel seems to be very slow in some aspects.

#### Declaration

```
public class KeltsiDAML
  extends com.hp.hpl.jena.daml.common.DAMLModelImpl
```

#### Field summary

**error**  
**keltsiNS**  
**modelName**  
**OBJECT**  
**PREDICATE**  
**RDFNS**  
**RDFSNS**  
**SUBJECT**

#### Constructor summary

**KeltsiDAML()**

#### Method summary

**addFile(String)**  
**executeQuery(String)** execute RDQL-query  
**getBaseURL()**  
**getInverseProperty(String)**  
**getKeltsiResource(DAMLCommon)**  
**getKeltsiResource(String)**  
**getOntologies()**  
**getSynonymClassURI(String)**  
**getSynonymClassURI(String, KeltsiClass)**  
**getVerbs(String)**  
**init()**  
**inverseName(String)**  
**loadModel(String)** load model from file  
**main(String[])**  
**mapQuery(HashMap, boolean)**  
**mapQueryList(HashMap, boolean)**  
**mapQuerySize(HashMap, boolean)**  
**searchClassLabels(String, KeltsiClass)**  
**select(Resource, Property, RDFNode)** Query with a selector  
**setBaseURL(String)**  
**triple(Object, Object, Object)** Construct query-triple  
**xQuery(String)**  
**xQuerySet(String, HashSet)** Execute RDQL-query beginning "SELECT ?



## Fields

---

- public static final java.lang.String **keltsiNS**
- public static final java.lang.String **RDFSNS**
- public static final java.lang.String **RDFNS**
- public static final int **SUBJECT**
- public static final int **PREDICATE**
- public static final int **OBJECT**
- public java.lang.String **error**
- public java.lang.String **modelName**

## Constructors

---

- *KeltsiDAML*  
public **KeltsiDAML**( )

## Methods

---

- *addFile*  
public void **addFile**( java.lang.String fileName )
- *executeQuery*  
public com.hp.hpl.jena.rdf.query.QueryResults **executeQuery**(  
java.lang.String queryString )  
  
– **Description**  
execute RDQL-query
- *getBaseURL*  
public java.lang.String **getBaseURL**( )
- *getInverseProperty*  
public com.hp.hpl.jena.daml.DAMLProperty **getInverseProperty**(  
java.lang.String propertyURI )
- *getKeltsiResource*  
public KeltsiResource **getKeltsiResource**( com.hp.hpl.jena.daml.DAMLCommon  
jenaResource )
- *getKeltsiResource*  
public KeltsiResource **getKeltsiResource**( java.lang.String uri )
- *getOntologies*  
public java.util.Iterator **getOntologies**( )

- *getSynonymClassURI*  
public java.lang.String getSynonymClassURI( java.lang.String synonym )
- *getSynonymClassURI*  
public java.lang.String getSynonymClassURI( java.lang.String synonym, KeltsiClass root )
- *getVerbs*  
public java.lang.String[] getVerbs( java.lang.String ontologyURI )
- *init*  
public void init( )
- *inverseName*  
public java.lang.String inverseName( java.lang.String localName )
- *loadModel*  
public void loadModel( java.lang.String modelName )
  - **Description**  
load model from file
- *main*  
public static void main( java.lang.String[] args ) throws com.hp.hpl.mesa.rdf.jena.model.RDFException
- *mapQuery*  
public java.util.Iterator mapQuery( java.util.HashMap map, boolean close )
- *mapQueryList*  
public java.util.LinkedList mapQueryList( java.util.HashMap map, boolean close )
- *mapQuerySize*  
public int mapQuerySize( java.util.HashMap map, boolean close )
- *searchClassLabels*  
public java.lang.String searchClassLabels( java.lang.String synonym, KeltsiClass root )
- *select*  
public fi.helsinki.cs.keltsi.util.ResultIterator select( com.hp.hpl.mesa.rdf.jena.model.Resource subject, com.hp.hpl.mesa.rdf.jena.model.Property predicate, com.hp.hpl.mesa.rdf.jena.model.RDFNode object )
  - **Description**  
Query with a selector
- *setBaseURL*  
public void setBaseURL( java.lang.String baseURL )
- *triple*  
public java.lang.String triple( java.lang.Object subject, java.lang.Object predicate, java.lang.Object object )

## – Description

Construct query-triple

---

• *xQuery*

```
public java.util.Iterator xQuery( java.lang.String queryString )
```

---

• *xQuerySet*

```
public void xQuerySet( java.lang.String queryString, java.util.HashSet set )
```

## – Description

Execute RDQL-query beginning "SELECT ?x WHERE" and add results to set. Makes possible to create union of several queryresults.

---

**Members inherited from class com.hp.hpl.jena.daml.common.DAMLModelImpl**


---

- public Model add( com.hp.hpl.mesa.rdf.jena.model.Model )
- protected boolean containsResource( java.lang.String )
- public DAMLClass createDAMLClass( java.lang.String )
- public DAMLDatatype createDAMLDatatype( java.lang.String )
- public DAMLDatatypeProperty createDAMLDatatypeProperty( java.lang.String )
- public DAMLInstance createDAMLInstance( com.hp.hpl.jena.daml.DAMLClass, java.lang.String )
- public DAMLList createDAMLList( java.lang.String )
- public DAMLObjectProperty createDAMLObjectProperty( java.lang.String )
- public DAMLOntology createDAMLOntology( java.lang.String )
- public DAMLProperty createDAMLProperty( java.lang.String )
- public DAMLRestriction createDAMLRestriction( java.lang.String )
- public DAMLCommon createDAMLValue( java.lang.String, com.hp.hpl.mesa.rdf.jena.model.Resource, com.hp.hpl.jena.vocabulary.DAMLVocabulary )
- protected static DAML\_CLASS\_TABLE
- public DAMLCommon getDAMLValue( java.lang.String )
- public DAMLCommon getDAMLValue( java.lang.String, com.hp.hpl.jena.daml.DAMLClass, com.hp.hpl.jena.vocabulary.DAMLVocabulary )
- public XMLDatatypeRegistry getDatatypeRegistry( )
- protected ArrayList getIndex( java.lang.Object )
- public DAMLLoader getLoader( )
- public boolean getLoadSuccessful( )
- public boolean getUseEquivalence( )
- protected void initStore( )
- public Iterator listDAMLClasses( )
- public Iterator listDAMLInstances( )
- public Iterator listDAMLProperties( )
- protected m\_indexes
- protected m\_nameIndex
- protected m\_namespaceIndex
- protected m\_useEquivalence
- protected m\_xmlDatatypeRegistry
- public Model read( java.io.Reader, java.lang.String )
- public Model read( java.io.Reader, java.lang.String, java.lang.String )
- public Model read( java.lang.String )
- public Model read( java.lang.String, java.lang.String )
- public Model read( java.lang.String, java.lang.String, java.lang.String )
- public void setUseEquivalence( boolean )

---

**Members inherited from class `com.hp.hpl.mesa.rdf.jena.mem.ModelMem`**


---

- `public Model difference( com.hp.hpl.mesa.rdf.jena.model.Model )` throws `com.hp.hpl.mesa.rdf.jena.model.RDFException`
- `public Model intersection( com.hp.hpl.mesa.rdf.jena.model.Model )` throws `com.hp.hpl.mesa.rdf.jena.model.RDFException`
- `public Model query( com.hp.hpl.mesa.rdf.jena.model.Selector )` throws `com.hp.hpl.mesa.rdf.jena.model.RDFException`
- `public boolean supportsSetOperations( )`
- `public boolean supportsTransactions( )`
- `public Model union( com.hp.hpl.mesa.rdf.jena.model.Model )` throws `com.hp.hpl.mesa.rdf.jena.model.RDFException`

---

**Members inherited from class `com.hp.hpl.mesa.rdf.jena.common.ModelCom`**


---

- `public Model abort( )` throws `com.hp.hpl.mesa.rdf.jena.model.RDFException`
- `public Model add( com.hp.hpl.mesa.rdf.jena.model.Model )` throws `com.hp.hpl.mesa.rdf.jena.model.RDFException`
- `public Model add( com.hp.hpl.mesa.rdf.jena.model.Resource, com.hp.hpl.mesa.rdf.jena.model.Property, boolean )` throws `com.hp.hpl.mesa.rdf.jena.model.RDFException`
- `public Model add( com.hp.hpl.mesa.rdf.jena.model.Resource, com.hp.hpl.mesa.rdf.jena.model.Property, char )` throws `com.hp.hpl.mesa.rdf.jena.model.RDFException`
- `public Model add( com.hp.hpl.mesa.rdf.jena.model.Resource, com.hp.hpl.mesa.rdf.jena.model.Property, double )` throws `com.hp.hpl.mesa.rdf.jena.model.RDFException`
- `public Model add( com.hp.hpl.mesa.rdf.jena.model.Resource, com.hp.hpl.mesa.rdf.jena.model.Property, float )` throws `com.hp.hpl.mesa.rdf.jena.model.RDFException`
- `public Model add( com.hp.hpl.mesa.rdf.jena.model.Resource, com.hp.hpl.mesa.rdf.jena.model.Property, long )` throws `com.hp.hpl.mesa.rdf.jena.model.RDFException`
- `public Model add( com.hp.hpl.mesa.rdf.jena.model.Resource, com.hp.hpl.mesa.rdf.jena.model.Property, java.lang.Object )` throws `com.hp.hpl.mesa.rdf.jena.model.RDFException`
- `public Model add( com.hp.hpl.mesa.rdf.jena.model.Resource, com.hp.hpl.mesa.rdf.jena.model.Property, com.hp.hpl.mesa.rdf.jena.model.RDFNode )` throws `com.hp.hpl.mesa.rdf.jena.model.RDFException`
- `public Model add( com.hp.hpl.mesa.rdf.jena.model.Resource, com.hp.hpl.mesa.rdf.jena.model.Property, java.lang.String )` throws `com.hp.hpl.mesa.rdf.jena.model.RDFException`
- `public Model add( com.hp.hpl.mesa.rdf.jena.model.Resource, com.hp.hpl.mesa.rdf.jena.model.Property, java.lang.String, boolean )` throws `com.hp.hpl.mesa.rdf.jena.model.RDFException`
- `public Model add( com.hp.hpl.mesa.rdf.jena.model.Resource, com.hp.hpl.mesa.rdf.jena.model.Property, java.lang.String, java.lang.String )` throws `com.hp.hpl.mesa.rdf.jena.model.RDFException`
- `public Model add( com.hp.hpl.mesa.rdf.jena.model.Resource, com.hp.hpl.mesa.rdf.jena.model.Property, java.lang.String, java.lang.String, boolean )` throws `com.hp.hpl.mesa.rdf.jena.model.RDFException`
- `public Model add( com.hp.hpl.mesa.rdf.jena.model.Statement )` throws `com.hp.hpl.mesa.rdf.jena.model.RDFException`
- `public Model add( com.hp.hpl.mesa.rdf.jena.model.StmtIterator )` throws `com.hp.hpl.mesa.rdf.jena.model.RDFException`
- `public Model begin( )` throws `com.hp.hpl.mesa.rdf.jena.model.RDFException`
- `public void close( )`
- `public Model commit( )` throws `com.hp.hpl.mesa.rdf.jena.model.RDFException`

- public boolean **containerContains**( com.hp.hpl.mesa.rdf.jena.model.Container, com.hp.hpl.mesa.rdf.jena.model.RDFNode ) throws com.hp.hpl.mesa.rdf.jena.model.RDFException
- public int **containerIndexOf**( com.hp.hpl.mesa.rdf.jena.model.Container, com.hp.hpl.mesa.rdf.jena.model.RDFNode ) throws com.hp.hpl.mesa.rdf.jena.model.RDFException
- public int **containerSize**( com.hp.hpl.mesa.rdf.jena.model.Container ) throws com.hp.hpl.mesa.rdf.jena.model.RDFException
- public boolean **contains**( com.hp.hpl.mesa.rdf.jena.model.Resource, com.hp.hpl.mesa.rdf.jena.model.Property ) throws com.hp.hpl.mesa.rdf.jena.model.RDFException
- public boolean **contains**( com.hp.hpl.mesa.rdf.jena.model.Resource, com.hp.hpl.mesa.rdf.jena.model.Property, boolean ) throws com.hp.hpl.mesa.rdf.jena.model.RDFException
- public boolean **contains**( com.hp.hpl.mesa.rdf.jena.model.Resource, com.hp.hpl.mesa.rdf.jena.model.Property, char ) throws com.hp.hpl.mesa.rdf.jena.model.RDFException
- public boolean **contains**( com.hp.hpl.mesa.rdf.jena.model.Resource, com.hp.hpl.mesa.rdf.jena.model.Property, double ) throws com.hp.hpl.mesa.rdf.jena.model.RDFException
- public boolean **contains**( com.hp.hpl.mesa.rdf.jena.model.Resource, com.hp.hpl.mesa.rdf.jena.model.Property, float ) throws com.hp.hpl.mesa.rdf.jena.model.RDFException
- public boolean **contains**( com.hp.hpl.mesa.rdf.jena.model.Resource, com.hp.hpl.mesa.rdf.jena.model.Property, long ) throws com.hp.hpl.mesa.rdf.jena.model.RDFException
- public boolean **contains**( com.hp.hpl.mesa.rdf.jena.model.Resource, com.hp.hpl.mesa.rdf.jena.model.Property, java.lang.Object ) throws com.hp.hpl.mesa.rdf.jena.model.RDFException
- public boolean **contains**( com.hp.hpl.mesa.rdf.jena.model.Resource, com.hp.hpl.mesa.rdf.jena.model.Property, com.hp.hpl.mesa.rdf.jena.model.RDFNode ) throws com.hp.hpl.mesa.rdf.jena.model.RDFException
- public boolean **contains**( com.hp.hpl.mesa.rdf.jena.model.Resource, com.hp.hpl.mesa.rdf.jena.model.Property, java.lang.String ) throws com.hp.hpl.mesa.rdf.jena.model.RDFException
- public boolean **contains**( com.hp.hpl.mesa.rdf.jena.model.Resource, com.hp.hpl.mesa.rdf.jena.model.Property, java.lang.String, java.lang.String ) throws com.hp.hpl.mesa.rdf.jena.model.RDFException
- public boolean **contains**( com.hp.hpl.mesa.rdf.jena.model.Statement ) throws com.hp.hpl.mesa.rdf.jena.model.RDFException
- public boolean **containsAll**( com.hp.hpl.mesa.rdf.jena.model.Model ) throws com.hp.hpl.mesa.rdf.jena.model.RDFException
- public boolean **containsAll**( com.hp.hpl.mesa.rdf.jena.model.StmtIterator ) throws com.hp.hpl.mesa.rdf.jena.model.RDFException
- public boolean **containsAny**( com.hp.hpl.mesa.rdf.jena.model.Model ) throws com.hp.hpl.mesa.rdf.jena.model.RDFException
- public boolean **containsAny**( com.hp.hpl.mesa.rdf.jena.model.StmtIterator ) throws com.hp.hpl.mesa.rdf.jena.model.RDFException
- public Property **convert**( com.hp.hpl.mesa.rdf.jena.model.Property ) throws com.hp.hpl.mesa.rdf.jena.model.RDFException
- public RDFNode **convert**( com.hp.hpl.mesa.rdf.jena.model.RDFNode ) throws com.hp.hpl.mesa.rdf.jena.model.RDFException
- public Resource **convert**( com.hp.hpl.mesa.rdf.jena.model.Resource ) throws com.hp.hpl.mesa.rdf.jena.model.RDFException
- public Alt **createAlt**( ) throws com.hp.hpl.mesa.rdf.jena.model.RDFException
- public Alt **createAlt**( java.lang.String ) throws com.hp.hpl.mesa.rdf.jena.model.RDFException
- public Bag **createBag**( ) throws com.hp.hpl.mesa.rdf.jena.model.RDFException
- public Bag **createBag**( java.lang.String ) throws com.hp.hpl.mesa.rdf.jena.model.RDFException

- public Literal **createLiteral**( boolean ) throws  
com.hp.hpl.mesa.rdf.jena.model.RDFException
- public Literal **createLiteral**( char ) throws  
com.hp.hpl.mesa.rdf.jena.model.RDFException
- public Literal **createLiteral**( double ) throws  
com.hp.hpl.mesa.rdf.jena.model.RDFException
- public Literal **createLiteral**( float ) throws  
com.hp.hpl.mesa.rdf.jena.model.RDFException
- public Literal **createLiteral**( long ) throws  
com.hp.hpl.mesa.rdf.jena.model.RDFException
- public Literal **createLiteral**( java.lang.Object ) throws  
com.hp.hpl.mesa.rdf.jena.model.RDFException
- public Literal **createLiteral**( java.lang.String ) throws  
com.hp.hpl.mesa.rdf.jena.model.RDFException
- public Literal **createLiteral**( java.lang.String, java.lang.String ) throws  
com.hp.hpl.mesa.rdf.jena.model.RDFException
- public Literal **createLiteral**( java.lang.String, java.lang.String, boolean )
- public Property **createProperty**( java.lang.String ) throws  
com.hp.hpl.mesa.rdf.jena.model.RDFException
- public Property **createProperty**( java.lang.String, java.lang.String ) throws  
com.hp.hpl.mesa.rdf.jena.model.RDFException
- public Resource **createResource**( ) throws  
com.hp.hpl.mesa.rdf.jena.model.RDFException
- public Resource **createResource**( com.hp.hpl.mesa.rdf.jena.model.Resource ) throws  
com.hp.hpl.mesa.rdf.jena.model.RDFException
- public Resource **createResource**( com.hp.hpl.mesa.rdf.jena.model.ResourceF ) throws  
com.hp.hpl.mesa.rdf.jena.model.RDFException
- public Resource **createResource**( java.lang.String ) throws  
com.hp.hpl.mesa.rdf.jena.model.RDFException
- public Resource **createResource**( java.lang.String,  
com.hp.hpl.mesa.rdf.jena.model.Resource ) throws  
com.hp.hpl.mesa.rdf.jena.model.RDFException
- public Resource **createResource**( java.lang.String,  
com.hp.hpl.mesa.rdf.jena.model.ResourceF ) throws  
com.hp.hpl.mesa.rdf.jena.model.RDFException
- public Seq **createSeq**( ) throws com.hp.hpl.mesa.rdf.jena.model.RDFException
- public Seq **createSeq**( java.lang.String ) throws  
com.hp.hpl.mesa.rdf.jena.model.RDFException
- public Statement **createStatement**( com.hp.hpl.mesa.rdf.jena.model.Resource,  
com.hp.hpl.mesa.rdf.jena.model.Property, boolean ) throws  
com.hp.hpl.mesa.rdf.jena.model.RDFException
- public Statement **createStatement**( com.hp.hpl.mesa.rdf.jena.model.Resource,  
com.hp.hpl.mesa.rdf.jena.model.Property, char ) throws  
com.hp.hpl.mesa.rdf.jena.model.RDFException
- public Statement **createStatement**( com.hp.hpl.mesa.rdf.jena.model.Resource,  
com.hp.hpl.mesa.rdf.jena.model.Property, double ) throws  
com.hp.hpl.mesa.rdf.jena.model.RDFException
- public Statement **createStatement**( com.hp.hpl.mesa.rdf.jena.model.Resource,  
com.hp.hpl.mesa.rdf.jena.model.Property, float ) throws  
com.hp.hpl.mesa.rdf.jena.model.RDFException
- public Statement **createStatement**( com.hp.hpl.mesa.rdf.jena.model.Resource,  
com.hp.hpl.mesa.rdf.jena.model.Property, long ) throws  
com.hp.hpl.mesa.rdf.jena.model.RDFException
- public Statement **createStatement**( com.hp.hpl.mesa.rdf.jena.model.Resource,  
com.hp.hpl.mesa.rdf.jena.model.Property, java.lang.Object ) throws  
com.hp.hpl.mesa.rdf.jena.model.RDFException
- public Statement **createStatement**( com.hp.hpl.mesa.rdf.jena.model.Resource,  
com.hp.hpl.mesa.rdf.jena.model.Property, com.hp.hpl.mesa.rdf.jena.model.RDFNode )  
throws com.hp.hpl.mesa.rdf.jena.model.RDFException
- public Statement **createStatement**( com.hp.hpl.mesa.rdf.jena.model.Resource,  
com.hp.hpl.mesa.rdf.jena.model.Property, java.lang.String ) throws  
com.hp.hpl.mesa.rdf.jena.model.RDFException

- public Statement **createStatement**( com.hp.hpl.mesa.rdf.jena.model.Resource, com.hp.hpl.mesa.rdf.jena.model.Property, java.lang.String, boolean ) throws com.hp.hpl.mesa.rdf.jena.model.RDFException
- public Statement **createStatement**( com.hp.hpl.mesa.rdf.jena.model.Resource, com.hp.hpl.mesa.rdf.jena.model.Property, java.lang.String, java.lang.String ) throws com.hp.hpl.mesa.rdf.jena.model.RDFException
- public Statement **createStatement**( com.hp.hpl.mesa.rdf.jena.model.Resource, com.hp.hpl.mesa.rdf.jena.model.Property, java.lang.String, java.lang.String, boolean ) throws com.hp.hpl.mesa.rdf.jena.model.RDFException
- public abstract Model **difference**( com.hp.hpl.mesa.rdf.jena.model.Model ) throws com.hp.hpl.mesa.rdf.jena.model.RDFException
- public boolean **equals**( java.lang.Object )
- public Alt **getAlt**( com.hp.hpl.mesa.rdf.jena.model.Resource ) throws com.hp.hpl.mesa.rdf.jena.model.RDFException
- public Alt **getAlt**( java.lang.String ) throws com.hp.hpl.mesa.rdf.jena.model.RDFException
- public Bag **getBag**( com.hp.hpl.mesa.rdf.jena.model.Resource ) throws com.hp.hpl.mesa.rdf.jena.model.RDFException
- public Bag **getBag**( java.lang.String ) throws com.hp.hpl.mesa.rdf.jena.model.RDFException
- public Statement **getProperty**( com.hp.hpl.mesa.rdf.jena.model.Resource, com.hp.hpl.mesa.rdf.jena.model.Property ) throws com.hp.hpl.mesa.rdf.jena.model.RDFException
- public Property **getProperty**( java.lang.String ) throws com.hp.hpl.mesa.rdf.jena.model.RDFException
- public Property **getProperty**( java.lang.String, java.lang.String ) throws com.hp.hpl.mesa.rdf.jena.model.RDFException
- public RDFReader **getReader**( ) throws com.hp.hpl.mesa.rdf.jena.model.RDFException
- public RDFReader **getReader**( java.lang.String ) throws com.hp.hpl.mesa.rdf.jena.model.RDFException
- public Resource **getResource**( java.lang.String ) throws com.hp.hpl.mesa.rdf.jena.model.RDFException
- public Resource **getResource**( java.lang.String, com.hp.hpl.mesa.rdf.jena.model.ResourceF ) throws com.hp.hpl.mesa.rdf.jena.model.RDFException
- public Seq **getSeq**( com.hp.hpl.mesa.rdf.jena.model.Resource ) throws com.hp.hpl.mesa.rdf.jena.model.RDFException
- public Seq **getSeq**( java.lang.String ) throws com.hp.hpl.mesa.rdf.jena.model.RDFException
- public RDFWriter **getWriter**( ) throws com.hp.hpl.mesa.rdf.jena.model.RDFException
- public RDFWriter **getWriter**( java.lang.String ) throws com.hp.hpl.mesa.rdf.jena.model.RDFException
- public boolean **independent**( )
- public abstract Model **intersection**( com.hp.hpl.mesa.rdf.jena.model.Model ) throws com.hp.hpl.mesa.rdf.jena.model.RDFException
- public boolean **isReified**( com.hp.hpl.mesa.rdf.jena.model.Statement ) throws com.hp.hpl.mesa.rdf.jena.model.RDFException
- public NodeIterator **listContainerMembers**( com.hp.hpl.mesa.rdf.jena.model.Container, NodeIteratorFactory ) throws com.hp.hpl.mesa.rdf.jena.model.RDFException
- public NsIterator **listNameSpaces**( ) throws com.hp.hpl.mesa.rdf.jena.model.RDFException
- public NodeIterator **listObjects**( ) throws com.hp.hpl.mesa.rdf.jena.model.RDFException
- public NodeIterator **listObjectsOfProperty**( com.hp.hpl.mesa.rdf.jena.model.Property ) throws com.hp.hpl.mesa.rdf.jena.model.RDFException
- public NodeIterator **listObjectsOfProperty**( com.hp.hpl.mesa.rdf.jena.model.Resource, com.hp.hpl.mesa.rdf.jena.model.Property ) throws com.hp.hpl.mesa.rdf.jena.model.RDFException
- public StmtIterator **listReifiedStatements**( ) throws com.hp.hpl.mesa.rdf.jena.model.RDFException

- public StmtIterator **listStatements**( ) throws com.hp.hpl.mesa.rdf.jena.model.RDFException
- public StmtIterator **listStatements**( com.hp.hpl.mesa.rdf.jena.model.Selector ) throws com.hp.hpl.mesa.rdf.jena.model.RDFException
- protected StmtIterator **listStatements**( com.hp.hpl.mesa.rdf.jena.model.Selector, java.util.Iterator ) throws com.hp.hpl.mesa.rdf.jena.model.RDFException
- public ResIterator **listSubjects**( ) throws com.hp.hpl.mesa.rdf.jena.model.RDFException
- public ResIterator **listSubjectsWithProperty**( com.hp.hpl.mesa.rdf.jena.model.Property ) throws com.hp.hpl.mesa.rdf.jena.model.RDFException
- public ResIterator **listSubjectsWithProperty**( com.hp.hpl.mesa.rdf.jena.model.Property, boolean ) throws com.hp.hpl.mesa.rdf.jena.model.RDFException
- public ResIterator **listSubjectsWithProperty**( com.hp.hpl.mesa.rdf.jena.model.Property, char ) throws com.hp.hpl.mesa.rdf.jena.model.RDFException
- public ResIterator **listSubjectsWithProperty**( com.hp.hpl.mesa.rdf.jena.model.Property, double ) throws com.hp.hpl.mesa.rdf.jena.model.RDFException
- public ResIterator **listSubjectsWithProperty**( com.hp.hpl.mesa.rdf.jena.model.Property, float ) throws com.hp.hpl.mesa.rdf.jena.model.RDFException
- public ResIterator **listSubjectsWithProperty**( com.hp.hpl.mesa.rdf.jena.model.Property, long ) throws com.hp.hpl.mesa.rdf.jena.model.RDFException
- public ResIterator **listSubjectsWithProperty**( com.hp.hpl.mesa.rdf.jena.model.Property, java.lang.Object ) throws com.hp.hpl.mesa.rdf.jena.model.RDFException
- public ResIterator **listSubjectsWithProperty**( com.hp.hpl.mesa.rdf.jena.model.Property, com.hp.hpl.mesa.rdf.jena.model.RDFNode ) throws com.hp.hpl.mesa.rdf.jena.model.RDFException
- public ResIterator **listSubjectsWithProperty**( com.hp.hpl.mesa.rdf.jena.model.Property, java.lang.String ) throws com.hp.hpl.mesa.rdf.jena.model.RDFException
- public ResIterator **listSubjectsWithProperty**( com.hp.hpl.mesa.rdf.jena.model.Property, java.lang.String, java.lang.String ) throws com.hp.hpl.mesa.rdf.jena.model.RDFException
- public abstract Model **query**( com.hp.hpl.mesa.rdf.jena.model.Selector ) throws com.hp.hpl.mesa.rdf.jena.model.RDFException
- public Model **read**( java.io.Reader, java.lang.String ) throws com.hp.hpl.mesa.rdf.jena.model.RDFException
- public Model **read**( java.io.Reader, java.lang.String, java.lang.String ) throws com.hp.hpl.mesa.rdf.jena.model.RDFException
- public Model **read**( java.lang.String ) throws com.hp.hpl.mesa.rdf.jena.model.RDFException
- public Model **read**( java.lang.String, java.lang.String ) throws com.hp.hpl.mesa.rdf.jena.model.RDFException
- protected **readerFactory**
- public Model **remove**( com.hp.hpl.mesa.rdf.jena.model.Model ) throws com.hp.hpl.mesa.rdf.jena.model.RDFException
- public Model **remove**( com.hp.hpl.mesa.rdf.jena.model.Statement ) throws com.hp.hpl.mesa.rdf.jena.model.RDFException
- public Model **remove**( com.hp.hpl.mesa.rdf.jena.model.StmtIterator ) throws com.hp.hpl.mesa.rdf.jena.model.RDFException
- public String **setReaderClassName**( java.lang.String, java.lang.String )
- public String **setWriterClassName**( java.lang.String, java.lang.String )
- public long **size**( ) throws com.hp.hpl.mesa.rdf.jena.model.RDFException
- protected **store**
- public abstract boolean **supportsSetOperations**( )
- public abstract boolean **supportsTransactions**( )
- public abstract Model **union**( com.hp.hpl.mesa.rdf.jena.model.Model ) throws com.hp.hpl.mesa.rdf.jena.model.RDFException



- `public Model write( java.io.Writer ) throws com.hp.hpl.mesa.rdf.jena.model.RDFException`
- `public Model write( java.io.Writer, java.lang.String ) throws com.hp.hpl.mesa.rdf.jena.model.RDFException`
- `public Model write( java.io.Writer, java.lang.String, java.lang.String ) throws com.hp.hpl.mesa.rdf.jena.model.RDFException`
- `protected writerFactory`

### 1.1.7 Class `KeltsiResource`

---

#### Declaration

```
public abstract class KeltsiResource
extends java.lang.Object
implements java.lang.Comparable
```

#### All known subclasses

Advertisement (in 1.1.1, page 4), Contact (in 1.1.2, page 5), ImageFile (in 1.1.3, page 7), KeltsiClass (in 1.1.5, page 11), Service (in 1.1.9, page 28)

#### Field summary

`resource`

#### Method summary

`compareTo(Object)` Method to implement Comparable.  
`equals(Object)` Is the object equal to this one.  
`getLabel()`  
`getModel()`  
`getNameSpace()`  
`getResource()`  
`getSingleLiteralValue(Property)` Return stringvalue of property.  
`getType()`  
`getURI()`  
`hashCode()` Override Object.hashCode() and use Resource.hashCode()  
`toString()` Override Object.toString()

#### Fields

---

- protected com.hp.hpl.jena.daml.DAMLCommon `resource`

#### Methods

---

- *compareTo*  
public int `compareTo( java.lang.Object other )`  
  - **Description**  
Method to implement Comparable.
- *equals*  
public boolean `equals( java.lang.Object object )`  
  - **Description**  
Is the object equal to this one. The decision is dropped to the jena-layer, which makes it by comparing the URIs of the Resources.

---

– **Parameters**

\* **object** – The object to compare this one to.

– **Returns** – True if the object equals this one.

---

• *getLabel*

`public java.lang.String getLabel( )`

• *getModel*

`protected KeltsiDAML getModel( )`

• *getNameSpace*

`public java.lang.String getNameSpace( )`

• *getResource*

`public com.hp.hpl.jena.daml.DAMLCommon getResource( )`

• *getSingleLiteralValue*

`public java.lang.String getSingleLiteralValue(  
com.hp.hpl.mesa.rdf.jena.model.Property property )`

– **Description**

Return stringvalue of property. The range of the property is expected to be rdf:Literal.

---

• *getType*

`public KeltsiClass getType( )`

• *getURI*

`public java.lang.String getURI( )`

• *hashCode*

`public int hashCode( )`

– **Description**

Override Object.hashCode() and use Resource.hashCode()

---

• *toString*

`public java.lang.String toString( )`

– **Description**

Override Object.toString()

### 1.1.8 Class Ontology

---

#### Declaration

```
public class Ontology
extends java.lang.Object
```

#### Constructor summary

**Ontology(KeltsiClass, String[], String, KeltsiClass)**

#### Method summary

**defaultVerb()**  
**getDomainTop()**  
**getLabel()**  
**getNameSpace()**  
**getRangeTop()**  
**getVerbs()**

#### Constructors

---

- *Ontology*  
public **Ontology**( KeltsiClass rangetop, java.lang.String[] verbs,  
java.lang.String label, KeltsiClass domaintop )

#### Methods

---

- *defaultVerb*  
public java.lang.String defaultVerb( )
- *getDomainTop*  
public KeltsiClass getDomainTop( )
- *getLabel*  
public java.lang.String getLabel( )
- *getNameSpace*  
public java.lang.String getNameSpace( )
- *getRangeTop*  
public KeltsiClass getRangeTop( )
- *getVerbs*  
public java.lang.String[] getVerbs( )

### 1.1.9 Class Service

---

Class to encapsulate a Service. Provides access to it's properties including advertisement and contacts.

#### Declaration

```
public class Service
  extends fi.helsinki.cs.keltsi.jenardf.KeltsiResource (in 1.1.7, page 25)
```

#### Method summary

**getAdvertisement()** Get the advertisement.  
**getClassValues(DAMLPProperty)** Creates an iterator holding KeltsiClass-values of the supplied property, (, , ?  
**getContacts()** Get an iterator for contacts of this Service.  
**getDescription()** A short description of the Service.  
**getLabel()** The label of the Service.  
**getLiteralValues(DAMLPProperty)** Creates an iterator holding Literal values of the supplied property, (, , ?  
**getServiceClass()** Get the class (rdf:type) of the Service.  
**getServiceInverseValues(DAMLPProperty)** Creates an iterator holding the Service-values of the supplied properties inverse, (?  
**getServiceValues(DAMLPProperty)** Creates an iterator holding values of the supplied property, (, , ?  
**toString()**

#### Methods

---

- *getAdvertisement*  

```
public Advertisement getAdvertisement( )
```

  - **Description**  
Get the advertisement. There should be exactly one. In case none is found, the missingAd is used.
  - **Returns** – The advertisement of this Service.

---
- *getClassValues*  

```
public java.util.Iterator getClassValues( com.hp.hpl.jena.daml.DAMLPProperty property )
```

  - **Description**  
Creates an iterator holding KeltsiClass-values of the supplied property, (, , ?class). Fails (and returns an empty or partial list) if a non-KeltsiClass value is encountered.
  - **Parameters**  
    - \* **property** – The property whose values are to be iterated.
  - **Returns** – Iterator of property values of type KeltsiClass.

---
- *getContacts*  

```
public java.util.Iterator getContacts( )
```

---

– **Description**

Get an iterator for contacts of this Service. There should be one or more.

– **Returns** – An iterator over the contacts of this service.

---

• *getDescription*

```
public java.lang.String getDescription( )
```

– **Description**

A short description of the Service. Perhaps better would be to use rdfs:comment, but that is not available for instances in Protege. TODO: Language versions.

– **Returns** – The description of the Service.

---

• *getLabel*

```
public java.lang.String getLabel( )
```

– **Description**

The label of the Service. First tries to retrieve Keltsi.label, then the advertisements label. Best practice would be rdfs:label but due to Protege this was not possible. TODO: Language versions.

– **Returns** – The label of the service as a String.

---

• *getLiteralValues*

```
public java.util.Iterator getLiteralValues( com.hp.hpl.jena.daml.DAMLProperty
property )
```

– **Description**

Creates an iterator holding Literal values of the supplied property, ( , , ?literal). Fails (and returns an empty or partial list) if a non-Literal value is encountered. Literals are transformed to Strings. This is not good practice, if the xml:lang attribute is of use.

– **Parameters**

\* **property** – The property whose values are to be iterated.

– **Returns** – Iterator of property values of type Literal, represented as Strings in the list.

---

• *getServiceClass*

```
public KeltsiClass getServiceClass( )
```

– **Description**

Get the class (rdf:type) of the Service.

– **Returns** – The KeltsiClass object that corresponds to the Service's type.

---

• *getServiceInverseValues*

```
public java.util.Iterator getServiceInverseValues(
com.hp.hpl.jena.daml.DAMLProperty property )
```

– **Description**

Creates an iterator holding the Service-values of the supplied properties inverse, (?service, , ). Fails (and returns an empty or partial list) if a non-Service value is encountered.

– **Parameters**

\* **property** – The property whose inverses values are to be iterated.

– **Returns** – Iterator over inverse properties values of type Service.

- 
- *getServiceValues*  

```
public java.util.Iterator getServiceValues(
    com.hp.hpl.jena.daml.DAMLProperty property )
```

    - **Description**  
 Creates an iterator holding values of the supplied property, ( , , ?service). Fails (and returns an empty or partial list) if a non-Service value is encountered.
    - **Parameters**  
 \* `property` – The property whose values are to be iterated.
    - **Returns** – Iterator of property values of type Service.
- 
- *toString*  

```
public java.lang.String toString( )
```

    - **Description copied from KeltsiResource (in 1.1.7, page 25)**  
 Override Object.toString()

**Members inherited from class fi.helsinki.cs.keltsi.jenardf.KeltsiResource (in 1.1.7, page 25)**

---

- `public int compareTo( java.lang.Object other )`
- `public boolean equals( java.lang.Object object )`
- `public String getLabel( )`
- `protected KeltsiDAML getModel( )`
- `public String getNameSpace( )`
- `public DAMLCommon getResource( )`
- `public String getSingleLiteralValue( com.hp.hpl.mesa.rdf.jena.model.Property property )`
- `public KeltsiClass getType( )`
- `public String getURI( )`
- `public int hashCode( )`
- `protected resource`
- `public String toString( )`

## Chapter 2

### Package

# fi.helsinki.cs.keltsi.jenardf.test

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---



## 2.1 Classes

### 2.1.1 Class TestAdvertisement

---

Class to test Advertisement.

#### Declaration

```
public class TestAdvertisement
  extends junit.framework.TestCase
```

#### Constructor summary

**TestAdvertisement(String)**

#### Method summary

**main(String[])** main  
**setUp()**  
**suite()** Build a test suite.  
**testConstructor()** Test constructor  
**testContact()**  
**testImageFileURL()** Test constructor  
**testProviderOfService()** Test constructor

#### Constructors

---

- *TestAdvertisement*  
**public TestAdvertisement( java.lang.String theName )**

#### Methods

---

- *main*  
**public static void main( java.lang.String[] theArgs )**
  - **Description**  
main
  - **Parameters**  
 \* **String[]** – arguments (not used)

---
- *setUp*  
**protected void setUp( )** throws java.lang.Exception
- *suite*  
**public static junit.framework.Test suite( )**
  - **Description**  
Build a test suite.

---
- *testConstructor*  
**public void testConstructor( )** throws java.lang.Exception

## – Description

Test constructor

• *testContact***public void testContact( )** throws java.lang.Exception• *testImageFileURL***public void testImageFileURL( )** throws java.lang.Exception

## – Description

Test constructor

• *testProviderOfService***public void testProviderOfService( )** throws java.lang.Exception

## – Description

Test constructor

## Members inherited from class junit.framework.TestCase

- 
- **public int countTestCases( )**
  - **protected TestResult createResult( )**
  - **public String getName( )**
  - **public String name( )**
  - **public TestResult run( )**
  - **public void run( TestResult )**
  - **public void runBare( )** throws java.lang.Throwable
  - **protected void runTest( )** throws java.lang.Throwable
  - **public void setName( java.lang.String )**
  - **protected void setUp( )** throws java.lang.Exception
  - **protected void tearDown( )** throws java.lang.Exception
  - **public String toString( )**

## Members inherited from class junit.framework.Assert

- 
- **public static void assert( boolean )**
  - **public static void assert( java.lang.String, boolean )**
  - **public static void assertEquals( boolean, boolean )**
  - **public static void assertEquals( byte, byte )**
  - **public static void assertEquals( char, char )**
  - **public static void assertEquals( double, double, double )**
  - **public static void assertEquals( float, float, float )**
  - **public static void assertEquals( int, int )**
  - **public static void assertEquals( long, long )**
  - **public static void assertEquals( java.lang.Object, java.lang.Object )**
  - **public static void assertEquals( short, short )**
  - **public static void assertEquals( java.lang.String, boolean, boolean )**
  - **public static void assertEquals( java.lang.String, byte, byte )**
  - **public static void assertEquals( java.lang.String, char, char )**
  - **public static void assertEquals( java.lang.String, double, double, double )**
  - **public static void assertEquals( java.lang.String, float, float, float )**
  - **public static void assertEquals( java.lang.String, int, int )**
  - **public static void assertEquals( java.lang.String, long, long )**
  - **public static void assertEquals( java.lang.String, java.lang.Object, java.lang.Object )**
  - **public static void assertEquals( java.lang.String, short, short )**
  - **public static void assertNotNull( java.lang.Object )**
  - **public static void assertNotNull( java.lang.String, java.lang.Object )**
  - **public static void assertNull( java.lang.Object )**
  - **public static void assertNull( java.lang.String, java.lang.Object )**
  - **public static void assertSame( java.lang.Object, java.lang.Object )**
  - **public static void assertSame( java.lang.String, java.lang.Object, java.lang.Object )**
  - **public static void assertTrue( boolean )**
  - **public static void assertTrue( java.lang.String, boolean )**
  - **public static void fail( )**
  - **public static void fail( java.lang.String )**

## Chapter 3

# Package `fi.helsinki.cs.keltsi.tags`

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---

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---

## 3.1 Classes

### 3.1.1 Class DisplayAdvertisement

---

Display details of a service Author Tuomo Kajava

#### Declaration

```
public class DisplayAdvertisement
  extends javax.servlet.jsp.tagext.TagSupport
```

#### Constructor summary

**DisplayAdvertisement()**

#### Method summary

**doStartTag()**

#### Serializable Fields

---

- private java.lang.String **serviceUri**
- private fi.helsinki.cs.keltsi.jenardf.KeltsiDAML **model**
- private Html **html**
- private Link **link**

#### Constructors

---

- *DisplayAdvertisement*  
**public DisplayAdvertisement( )**

#### Methods

---

- *doStartTag*  
**public int doStartTag( )** throws javax.servlet.jsp.JspException

#### Members inherited from class javax.servlet.jsp.tagext.TagSupport

---

- **public int doAfterBody( )** throws javax.servlet.jsp.JspException
- **public int doEndTag( )** throws javax.servlet.jsp.JspException
- **public int doStartTag( )** throws javax.servlet.jsp.JspException
- **public static final Tag findAncestorWithClass( Tag, java.lang.Class )**
- **public String getId( )**
- **public Tag getParent( )**
- **public Object getValue( java.lang.String )**
- **public Enumeration getValues( )**
- **protected id**
- **protected pageContext**

- `public void release( )`
- `public void removeValue( java.lang.String )`
- `public void setId( java.lang.String )`
- `public void setPageContext( javax.servlet.jsp.PageContext )`
- `public void setParent( Tag )`
- `public void setValue( java.lang.String, java.lang.Object )`

### 3.1.2 Class DisplayServiceClass

---

Display a serviceclass

#### Declaration

```
public class DisplayServiceClass
extends javax.servlet.jsp.tagext.TagSupport
```

#### Constructor summary

**DisplayServiceClass()**

#### Method summary

**doStartTag()**

#### Serializable Fields

---

- private Html **html**
- private fi.helsinki.cs.keltsi.jenardf.KeltsiClass **serviceClass**
- private Link **link**
- private java.lang.String **synonym**

#### Constructors

---

- *DisplayServiceClass*  
public **DisplayServiceClass()**

#### Methods

---

- *doStartTag*  
public int **doStartTag()** throws javax.servlet.jsp.JspException

#### Members inherited from class javax.servlet.jsp.tagext.TagSupport

---

- public int **doAfterBody()** throws javax.servlet.jsp.JspException
- public int **doEndTag()** throws javax.servlet.jsp.JspException
- public int **doStartTag()** throws javax.servlet.jsp.JspException
- public static final Tag **findAncestorWithClass**( Tag, java.lang.Class )
- public String **getId()**
- public Tag **getParent()**
- public Object **getValue**( java.lang.String )
- public Enumeration **getValues()**
- protected id
- protected pageContext
- public void **release()**
- public void **removeValue**( java.lang.String )
- public void **setId**( java.lang.String )
- public void **setPageContext**( javax.servlet.jsp.PageContext )
- public void **setParent**( Tag )
- public void **setValue**( java.lang.String, java.lang.Object )

### 3.1.3 Class Html

---

Class to write html to JspWriter

#### Declaration

```
public class Html
extends java.lang.Object
```

#### Field summary

**out**  
**serviceIcon**  
**subClassIcon**  
**superClassIcon**  
**thisClassIcon**

#### Constructor summary

**Html(JspWriter)**

#### Method summary

**bar(String)**  
**bar(String, String)**  
**br()**  
**div(String, String)**  
**element(String, String, String, String)**  
**errorMsg(Exception)**  
**errorMsg(Exception, String)**  
**errorMsg(String)**  
**hr()**  
**img(String)**  
**img(String, int, int, String)**  
**optionList(Iterator, Link, String)**  
**pair(String, String)**  
**pair(String, String, String)**  
**pairlink(String, String, String, String)**  
**serviceLink(Service, Link)**  
**span(String, String)**  
**subClassLink(KeltsiClass, Link, String)**  
**superClassLink(KeltsiClass, Link, String)**  
**superClassLink(KeltsiClass, Link, String, boolean)**  
**td(String)**  
**td(String, String)**  
**td(String, String, String)**  
**thisClass(KeltsiClass)**  
**tr(String)**  
**tr(String, String)**  
**tr(String, String, String)**  
**trimLabel(String)**

`write(String)`

## Fields

---

- public static final java.lang.String **serviceIcon**
- public static final java.lang.String **thisClassIcon**
- public static final java.lang.String **subClassIcon**
- public static final java.lang.String **superClassIcon**
- protected javax.servlet.jsp.JspWriter **out**

## Constructors

---

- *Html*  
public **Html**( javax.servlet.jsp.JspWriter out )

## Methods

---

- *bar*  
public static java.lang.String bar( java.lang.String text )
- *bar*  
public static java.lang.String bar( java.lang.String text, java.lang.String control )
- *br*  
public static java.lang.String br( )
- *div*  
public static java.lang.String div( java.lang.String text, java.lang.String cssClass )
- *element*  
public static java.lang.String element( java.lang.String tag, java.lang.String value, java.lang.String cssClass, java.lang.String args )
- *errorMsg*  
public void errorMsg( java.lang.Exception ex )
- *errorMsg*  
public void errorMsg( java.lang.Exception ex, java.lang.String msg )
- *errorMsg*  
public void errorMsg( java.lang.String msg )
- *hr*  
public static java.lang.String hr( )
- *img*  
public static java.lang.String img( java.lang.String url )



- *img*  

```
public static java.lang.String img( java.lang.String url, int width, int
height, java.lang.String align )
```

---
- *optionList*  

```
public static java.lang.String optionList( java.util.Iterator classes, Link
link, java.lang.String name )
```

---
- *pair*  

```
public static java.lang.String pair( java.lang.String name, java.lang.String
value )
```

---
- *pair*  

```
public static java.lang.String pair( java.lang.String name, java.lang.String
value, java.lang.String cssClass )
```

---
- *pairlink*  

```
public static java.lang.String pairlink( java.lang.String name,
java.lang.String value, java.lang.String cssClass, java.lang.String protocol
)
```

---
- *serviceLink*  

```
public static java.lang.String serviceLink(
fi.helsinki.cs.keltsi.jenardf.Service service, Link link )
```

---
- *span*  

```
public static java.lang.String span( java.lang.String text, java.lang.String
cssClass )
```

---
- *subClassLink*  

```
public static java.lang.String subClassLink(
fi.helsinki.cs.keltsi.jenardf.KeltsiClass kClass, Link link, java.lang.String
name )
```

---
- *superClassLink*  

```
public static java.lang.String superClassLink(
fi.helsinki.cs.keltsi.jenardf.KeltsiClass kClass, Link link, java.lang.String
name )
```

---
- *superClassLink*  

```
public static java.lang.String superClassLink(
fi.helsinki.cs.keltsi.jenardf.KeltsiClass kClass, Link link, java.lang.String
name, boolean trim )
```

---
- *td*  

```
public static java.lang.String td( java.lang.String text )
```

---
- *td*  

```
public static java.lang.String td( java.lang.String text, java.lang.String
cssClass )
```

---
- *td*  

```
public static java.lang.String td( java.lang.String text, java.lang.String
cssClass, java.lang.String args )
```

---

- *thisClass*  

```
public static java.lang.String thisClass(  
    fi.helsinki.cs.keltsi.jenardf.KeltsiClass kClass )
```
- *tr*  

```
public static java.lang.String tr( java.lang.String text )
```
- *tr*  

```
public static java.lang.String tr( java.lang.String text, java.lang.String  
    cssClass )
```
- *tr*  

```
public static java.lang.String tr( java.lang.String text, java.lang.String  
    cssClass, java.lang.String args )
```
- *trimLabel*  

```
public static java.lang.String trimLabel( java.lang.String labelString )
```
- *write*  

```
public void write( java.lang.String string )
```

### 3.1.4 Class Init

---

Initialize model (and perhaps some other things in application scope).

#### Declaration

```
public class Init
  extends javax.servlet.jsp.tagext.TagSupport
```

#### Constructor summary

**Init()**

#### Method summary

**doEndTag()**

**doStartTag()**

**setBaseURL(String)** TO be able to set the baseURL from a jsp.

**setReload(String)** To be able to reload model from a jsp.

#### Serializable Fields

---

- private boolean **noModel**
- private boolean **reload**
- private java.lang.String **baseURL**

#### Constructors

---

- *Init*  
public **Init**( )

#### Methods

---

- *doEndTag*  
public int doEndTag( ) throws javax.servlet.jsp.JspException
- *doStartTag*  
public int doStartTag( ) throws javax.servlet.jsp.JspException
- *setBaseURL*  
public void **setBaseURL**( java.lang.String **baseURL** )  
– **Description**  
TO be able to set the baseURL from a jsp. Some default value maybe set elsewhere (now in KeltsiDAML).
- *setReload*  
public void **setReload**( java.lang.String **reload** )  
– **Description**  
To be able to reload model from a jsp.

**Members inherited from class javax.servlet.jsp.tagext.TagSupport**

---

- public int **doAfterBody**( ) throws javax.servlet.jsp.JspException
- public int **doEndTag**( ) throws javax.servlet.jsp.JspException
- public int **doStartTag**( ) throws javax.servlet.jsp.JspException
- public static final Tag **findAncestorWithClass**( Tag, java.lang.Class )
- public String **getId**( )
- public Tag **getParent**( )
- public Object **getValue**( java.lang.String )
- public Enumeration **getValues**( )
- protected **id**
- protected **pageContext**
- public void **release**( )
- public void **removeValue**( java.lang.String )
- public void **setId**( java.lang.String )
- public void **setPageContext**( javax.servlet.jsp.PageContext )
- public void **setParent**( Tag )
- public void **setValue**( java.lang.String, java.lang.Object )

### 3.1.5 Class Link

---

Class for holding and manipulating the name-value-pairs of the query and to construct html a-elements.

#### Declaration

```
public class Link
extends java.lang.Object
```

#### Constructor summary

`Link(HttpServletRequest)`

#### Method summary

`addParam(String, String)`  
`addParamStr(String, String, String)`  
`aHref(String, String, String, String, String, String)`  
`aHref(String, String, String, String, String, String, String)`  
`getMap()`  
`getPage()`  
`getParam(String)`  
`getSubmit()`  
`isSubmit()`  
`removeParam(String)`  
`url(String, String, String)`

#### Constructors

---

- *Link*  
`public Link( javax.servlet.http.HttpServletRequest request )`

#### Methods

---

- *addParam*  
`public void addParam( java.lang.String name, java.lang.String value )`
- *addParamStr*  
`public java.lang.String addParamStr( java.lang.String paramStr, java.lang.String name, java.lang.String value )`
- *aHref*  
`public java.lang.String aHref( java.lang.String target, java.lang.String page, java.lang.String name, java.lang.String value, java.lang.String label, java.lang.String title )`
- *aHref*  
`public java.lang.String aHref( java.lang.String target, java.lang.String page, java.lang.String name, java.lang.String value, java.lang.String label, java.lang.String title, java.lang.String value2 )`

- *getMap*  
public java.util.HashMap getMap( )
- *getPage*  
public java.lang.String getPage( )
- *getParam*  
public java.lang.String getParam( java.lang.String name )
- *getSubmit*  
public java.lang.String getSubmit( )
- *isSubmit*  
public boolean isSubmit( )
- *removeParam*  
public void removeParam( java.lang.String name )
- *url*  
public java.lang.String url( java.lang.String page, java.lang.String name,  
java.lang.String value )

### 3.1.6 *Class* **OntologySearch**

---

Control to browse an ontology.

#### **Declaration**

```
public class OntologySearch
extends javax.servlet.jsp.tagext.TagSupport
```

#### **Field summary**

**html**  
**link**  
**model**  
**ontoClass**  
**serviceClass**  
**verb**  
**verbs**

#### **Constructor summary**

**OntologySearch()**

#### **Method summary**

**doStartTag()**

#### **Serializable Fields**

---

- protected Link **link**
- protected fi.helsinki.cs.keltsi.jenardf.KeltsiClass **ontoClass**
- protected Html **html**
- protected java.lang.String **verbs**
- protected java.lang.String **verb**
- protected fi.helsinki.cs.keltsi.jenardf.KeltsiDAML **model**
- protected fi.helsinki.cs.keltsi.jenardf.KeltsiClass **serviceClass**
- javax.servlet.http.HttpServletRequest **request**

#### **Fields**

---

- protected Link **link**
- protected fi.helsinki.cs.keltsi.jenardf.KeltsiClass **ontoClass**
- protected Html **html**

- protected java.lang.String **verbs**
- protected java.lang.String **verb**
- protected fi.helsinki.cs.keltsi.jenardf.KeltsiDAML **model**
- protected fi.helsinki.cs.keltsi.jenardf.KeltsiClass **serviceClass**

## Constructors

---

- *OntologySearch*  
public **OntologySearch**( )

## Methods

---

- *doStartTag*  
public int **doStartTag**( ) throws javax.servlet.jsp.JspException

## Members inherited from class javax.servlet.jsp.tagext.TagSupport

---

- public int **doAfterBody**( ) throws javax.servlet.jsp.JspException
- public int **doEndTag**( ) throws javax.servlet.jsp.JspException
- public int **doStartTag**( ) throws javax.servlet.jsp.JspException
- public static final Tag **findAncestorWithClass**( Tag, java.lang.Class )
- public String **getId**( )
- public Tag **getParent**( )
- public Object **getValue**( java.lang.String )
- public Enumeration **getValues**( )
- protected **id**
- protected **pageContext**
- public void **release**( )
- public void **removeValue**( java.lang.String )
- public void **setId**( java.lang.String )
- public void **setPageContext**( javax.servlet.jsp.PageContext )
- public void **setParent**( Tag )
- public void **setValue**( java.lang.String, java.lang.Object )



### 3.1.7 Class OtherServices

---

#### Declaration

```
public class OtherServices
extends javax.servlet.jsp.tagext.TagSupport
```

#### Constructor summary

**OtherServices()**

#### Method summary

**doStartTag()**

#### Serializable Fields

---

- private fi.helsinki.cs.keltsi.jenardf.Service **service**
- private Link **link**
- private fi.helsinki.cs.keltsi.jenardf.KeltsiDAML **model**
- private Html **html**
- private fi.helsinki.cs.keltsi.jenardf.Advertisement **adv**

#### Constructors

---

- *OtherServices*  
public **OtherServices()**

#### Methods

---

- *doStartTag*  
public int **doStartTag()** throws javax.servlet.jsp.JspException

#### Members inherited from class javax.servlet.jsp.tagext.TagSupport

---

- public int **doAfterBody()** throws javax.servlet.jsp.JspException
- public int **doEndTag()** throws javax.servlet.jsp.JspException
- public int **doStartTag()** throws javax.servlet.jsp.JspException
- public static final Tag **findAncestorWithClass**( Tag, java.lang.Class )
- public String **getId()**
- public Tag **getParent()**
- public Object **getValue**( java.lang.String )
- public Enumeration **getValues()**
- protected **id**
- protected **pageContext**
- public void **release()**
- public void **removeValue**( java.lang.String )
- public void **setId**( java.lang.String )
- public void **setPageContext**( javax.servlet.jsp.PageContext )
- public void **setParent**( Tag )
- public void **setValue**( java.lang.String, java.lang.Object )

### 3.1.8 Class Search

---

Display search-link, count of results or resultlist

#### Declaration

```
public class Search
  extends javax.servlet.jsp.tagext.TagSupport
```

#### Field summary

**html**  
**link**  
**model**  
**page**

#### Constructor summary

**Search()**

#### Method summary

**doStartTag()**  
**init()**  
**resultCount()**  
**resultList()**  
**submitControl()**

#### Serializable Fields

---

- protected Link **link**
- protected java.lang.String **page**
- protected Html **html**
- protected fi.helsinki.cs.keltsi.jenardf.KeltsiDAML **model**

#### Fields

---

- protected Link **link**
- protected java.lang.String **page**
- protected Html **html**
- protected fi.helsinki.cs.keltsi.jenardf.KeltsiDAML **model**

## Constructors

---

- *Search*  
public **Search**( )

## Methods

---

- *doStartTag*  
public int doStartTag( ) throws javax.servlet.jsp.JspException
- *init*  
protected void init( )
- *resultCount*  
protected java.lang.String resultCount( )
- *resultList*  
protected void resultList( )
- *submitControl*  
protected java.lang.String submitControl( )

## Members inherited from class javax.servlet.jsp.tagext.TagSupport

---

- public int doAfterBody( ) throws javax.servlet.jsp.JspException
- public int doEndTag( ) throws javax.servlet.jsp.JspException
- public int doStartTag( ) throws javax.servlet.jsp.JspException
- public static final Tag findAncestorWithClass( Tag, java.lang.Class )
- public String getId( )
- public Tag getParent( )
- public Object getValue( java.lang.String )
- public Enumeration getValues( )
- protected id
- protected pageContext
- public void release( )
- public void removeValue( java.lang.String )
- public void setId( java.lang.String )
- public void setPageContext( javax.servlet.jsp.PageContext )
- public void setParent( Tag )
- public void setValue( java.lang.String, java.lang.Object )

### 3.1.9 Class SemanticLinks

---

#### Declaration

```
public class SemanticLinks
  extends javax.servlet.jsp.tagext.TagSupport
```

#### Constructor summary

**SemanticLinks()**

#### Method summary

**doStartTag()**  
**getKeltsiProperty(String)**

#### Serializable Fields

---

- private fi.helsinki.cs.keltsi.jenardf.KeltsiDAML **model**
- private Link **link**
- private Html **html**
- private fi.helsinki.cs.keltsi.jenardf.Service **service**
- private java.lang.String **serviceClassURI**

#### Constructors

---

- *SemanticLinks*  
public **SemanticLinks()**

#### Methods

---

- *doStartTag*  
public int **doStartTag()** throws javax.servlet.jsp.JspException
- *getKeltsiProperty*  
public com.hp.hp1.jena.daml.DAMLProperty **getKeltsiProperty( java.lang.String uri )**

**Members inherited from class javax.servlet.jsp.tagext.TagSupport**

---

- public int **doAfterBody**( ) throws javax.servlet.jsp.JspException
- public int **doEndTag**( ) throws javax.servlet.jsp.JspException
- public int **doStartTag**( ) throws javax.servlet.jsp.JspException
- public static final Tag **findAncestorWithClass**( Tag, java.lang.Class )
- public String **getId**( )
- public Tag **getParent**( )
- public Object **getValue**( java.lang.String )
- public Enumeration **getValues**( )
- protected **id**
- protected **pageContext**
- public void **release**( )
- public void **removeValue**( java.lang.String )
- public void **setId**( java.lang.String )
- public void **setPageContext**( javax.servlet.jsp.PageContext )
- public void **setParent**( Tag )
- public void **setValue**( java.lang.String, java.lang.Object )

### 3.1.10 Class ServiceClassInit

---

Initialize ServiceClass to be used with classes such as DisplayServiceClass

#### Declaration

```
public class ServiceClassInit
extends javax.servlet.jsp.tagext.TagSupport
```

#### Constructor summary

**ServiceClassInit()**

#### Method summary

**doStartTag()**

#### Constructors

---

- *ServiceClassInit*  
public **ServiceClassInit**( )

#### Methods

---

- *doStartTag*  
public int **doStartTag**( ) throws javax.servlet.jsp.JspException

#### Members inherited from class javax.servlet.jsp.tagext.TagSupport

---

- public int **doAfterBody**( ) throws javax.servlet.jsp.JspException
- public int **doEndTag**( ) throws javax.servlet.jsp.JspException
- public int **doStartTag**( ) throws javax.servlet.jsp.JspException
- public static final Tag **findAncestorWithClass**( Tag, java.lang.Class )
- public String **getId**( )
- public Tag **getParent**( )
- public Object **getValue**( java.lang.String )
- public Enumeration **getValues**( )
- protected **id**
- protected **pageContext**
- public void **release**( )
- public void **removeValue**( java.lang.String )
- public void **setId**( java.lang.String )
- public void **setPageContext**( javax.servlet.jsp.PageContext )
- public void **setParent**( Tag )
- public void **setValue**( java.lang.String, java.lang.Object )

## Chapter 4

# Package `fi.helsinki.cs.keltsi.tags.test`

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---

### Classes

<code>TestDisplayAdvertisement</code> .....	55
---	----

*An example of testing servlets using httpunit and JUnit.*

---

## 4.1 Classes

### 4.1.1 Class TestDisplayAdvertisement

An example of testing servlets using httpunit and JUnit.

#### Declaration

```
public class TestDisplayAdvertisement
  extends junit.framework.TestCase
```

#### Constructor summary

**TestDisplayAdvertisement(String)**

#### Method summary

**main(String[])**

**suite()**

**testMainPage()** Verifies that the welcome page has exactly one form, with the single parameter, "name"

#### Constructors

- *TestDisplayAdvertisement*  
public **TestDisplayAdvertisement**( java.lang.String name )

#### Methods

- *main*  
public static void **main**( java.lang.String[] args )
- *suite*  
public static junit.framework.Test **suite**( )
- *testMainPage*  
public void **testMainPage**( ) throws java.lang.Exception
  - **Description**  
Verifies that the welcome page has exactly one form, with the single parameter, "name"

#### Members inherited from class junit.framework.TestCase

- public int **countTestCases**( )
- protected **TestResult** **createResult**( )
- public **String** **getName**( )
- public **String** **name**( )
- public **TestResult** **run**( )
- public void **run**( **TestResult** )
- public void **runBare**( ) throws java.lang.Throwable
- protected void **runTest**( ) throws java.lang.Throwable
- public void **setName**( java.lang.String )
- protected void **setUp**( ) throws java.lang.Exception
- protected void **tearDown**( ) throws java.lang.Exception
- public **String** **toString**( )



**Members inherited from class junit.framework.Assert**

---

- public static void **assert**( boolean )
- public static void **assert**( java.lang.String, boolean )
- public static void **assertEquals**( boolean, boolean )
- public static void **assertEquals**( byte, byte )
- public static void **assertEquals**( char, char )
- public static void **assertEquals**( double, double, double )
- public static void **assertEquals**( float, float, float )
- public static void **assertEquals**( int, int )
- public static void **assertEquals**( long, long )
- public static void **assertEquals**( java.lang.Object, java.lang.Object )
- public static void **assertEquals**( short, short )
- public static void **assertEquals**( java.lang.String, boolean, boolean )
- public static void **assertEquals**( java.lang.String, byte, byte )
- public static void **assertEquals**( java.lang.String, char, char )
- public static void **assertEquals**( java.lang.String, double, double, double )
- public static void **assertEquals**( java.lang.String, float, float, float )
- public static void **assertEquals**( java.lang.String, int, int )
- public static void **assertEquals**( java.lang.String, long, long )
- public static void **assertEquals**( java.lang.String, java.lang.Object, java.lang.Object )
- public static void **assertEquals**( java.lang.String, short, short )
- public static void **assertNotNull**( java.lang.Object )
- public static void **assertNotNull**( java.lang.String, java.lang.Object )
- public static void **assertNull**( java.lang.Object )
- public static void **assertNull**( java.lang.String, java.lang.Object )
- public static void **assertSame**( java.lang.Object, java.lang.Object )
- public static void **assertSame**( java.lang.String, java.lang.Object, java.lang.Object )
- public static void **assertTrue**( boolean )
- public static void **assertTrue**( java.lang.String, boolean )
- public static void **fail**( )
- public static void **fail**( java.lang.String )

# Chapter 5

## Package `fi.helsinki.cs.keltsi.util`

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---

**Classes**

**ResultIterator** ..... 58

---

## 5.1 Classes

### 5.1.1 Class ResultIterator

---

#### Declaration

```
public class ResultIterator
  extends java.lang.Object
  implements java.util.Iterator
```

#### Constructor summary

**ResultIterator(StmtIterator, int)**

#### Method summary

**close()**  
**getSelect()**  
**hasNext()**  
**next()**  
**remove()**

#### Constructors

---

- *ResultIterator*  
**public ResultIterator( com.hp.hpl.mesa.rdf.jena.model.StmtIterator sIter, int select )**

#### Methods

---

- *close*  
**public void close( )**
- *getSelect*  
**public int getSelect( )**
- *hasNext*  
**boolean hasNext( )**
- *next*  
**java.lang.Object next( )**
- *remove*  
**void remove( )**