
Meta Resource Management System

Static Model

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This document contains the class diagrams and class descriptions that resulted from the static analysis.

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1. Data and Meta Data Management Classes

The following diagram depicts the data and meta data structures of the MRMS.

Figure 1. Data and Meta Data Classes

Description	A <i>ResourceType</i> specifies (by composition) the <i>Attributes</i> that a <i>Resource</i> of this type has.
Attributes	<i>name</i> : the name of the <i>ResourceType</i>

1.3. AttributeType

Description	Abstract base class for attribute types that a <i>ResourceType</i> aggregates.
Attributes	<i>name</i> : the name of the <i>AttributeType</i> <i>onlyPredefinedValuesAllowed</i> : if true, the user may only select the predefined values for an <i>Attribute</i> that has this type; if false, he may enter another value as well <i>mandatory</i> : if true, the user must enter a value for <i>Attributes</i> of this type <i>frozen</i> : if true, the user may not change the value of <i>Attributes</i> of this type

1.4. NumberAttributeType

Description	Concrete <i>AttributeType</i> for <i>NumericalAttributes</i> .
Attributes	<i>predefinedValues[]</i> : an array specifying predefined values for <i>Attributes</i> of this type <i>minValue</i> : the minimum value <i>Attributes</i> of this type may have <i>maxValue</i> : the maximum value <i>Attributes</i> of this type may have

1.5. TextAttributeType

Description	Concrete <i>AttributeType</i> for <i>TextAttributes</i> .
Attributes	<i>predefinedValues[]</i> : an array specifying predefined values for <i>Attributes</i> of this type <i>minSize</i> : the minimum number of characters <i>Attributes</i> of this type may have <i>maxSize</i> : the maximum number of characters <i>Attributes</i> of this type may have

1.6. Attribute

Description	Abstract base class for attributes that a <i>Resource</i> aggregates.
Attributes	---

1.7. NumberAttribute

Description	Concrete <i>Attribute</i> for a numerical property characterisation of a <i>Resource</i> .
Attributes	<i>value</i> : numerical property characterisation of a <i>Resource</i>

1.8. TextAttribute

Description	Concrete <i>Attribute</i> for a textual property characterisation of a <i>Resource</i> .
Attributes	<i>value</i> : textual property characterisation of a <i>Resource</i>

1.9. Link

Description	A <i>Link</i> references the two <i>Resources</i> that are linked together by it. Its consistency is checked by the <i>LinkRule</i> .
Attributes	---

1.10. LinkRule

Description	A <i>LinkRule</i> defines the characteristics of a consistent <i>Link</i> . It references two <i>ResourceTypes</i> whose instances (<i>Resources</i>) may be linked together and aggregates two <i>CardinalitySpecs</i> that define the allowed cardinalities for links between the two <i>ResourceTypes</i> .
Attributes	<i>name</i> : name of the <i>LinkRule</i> .

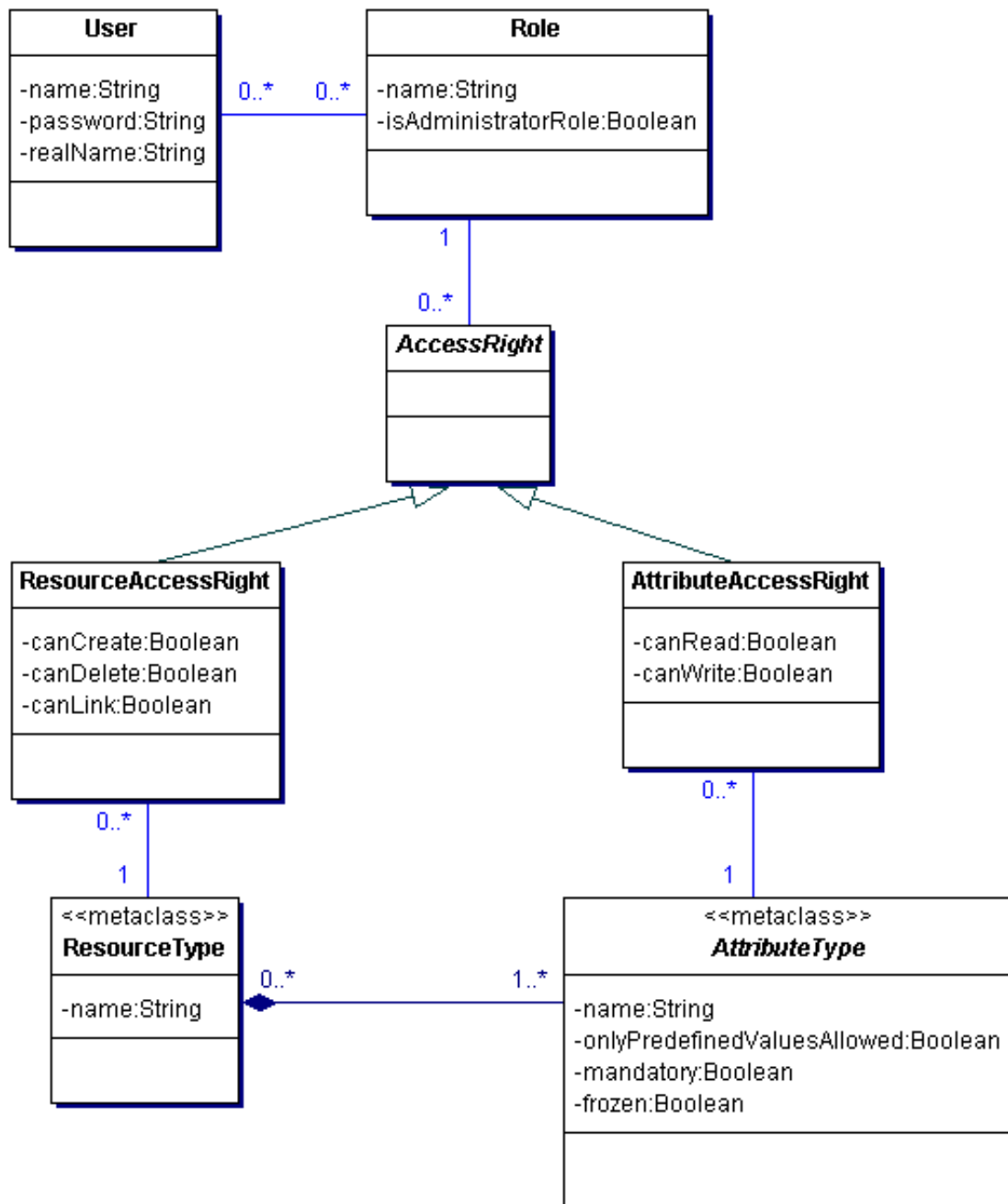
1.11. CardinalitySpec

Description	Specifies the minimum and maximum cardinality for one end t1 of a link rule. Example: Two <i>ResourceTypes</i> t1 and t2 are taking part in a <i>LinkRule</i> . If there is the cardinality specification min=1 and max=4 for t1, this means that one specific <i>Resource</i> of type t2 must have at least 1 and may have up to 4 <i>Links</i> to <i>Resources</i> of type t1. In the specification of the cardinality for <i>ResourceType</i> t1 a <i>NumberAttributeType</i> of the <i>ResourceType</i> t1 may be referenced.
Attributes	<i>minCardinality</i> : value for the minimum cardinality; may be overridden by a reference to a <i>NumberAttributeType</i> <i>maxCardinality</i> : value for the maximum cardinality; may be overridden by a reference to a <i>NumberAttributeType</i>

2. User Management Classes

The following diagram depicts the classes for user management of the MRMS.

Figure 2. User Management Classes



2.1. User

Description	Class for user accounts of the MRMS. Its instances may play <i>Roles</i> in the system.
Attributes	<i>name</i> : username <i>password</i> : password of the user <i>realname</i> : real name of the user

2.2. Role

Description	A <i>Role</i> defines which <i>AccessRights</i> its players (<i>Users</i>) have.
Attributes	<i>name</i> : name of the <i>Role</i> <i>isAdministratorRole</i> : defines if <i>Users</i> of the <i>Role</i> have administration rights

2.3. AccessRight

Description	Abstract base class for access rights. If a <i>Role</i> is associated with an <i>AccessRight</i> we say it owns the <i>AccessRight</i> . <i>Users</i> have the <i>AccessRights</i> which the <i>Roles</i> they play own.
Attributes	---

2.4. ResourceAccessRight

Description	Concrete <i>AccessRight</i> that defines owner's authority of working with <i>Resources</i> that are of a specific <i>ResourceType</i> .
Attributes	<i>canCreate</i> : defines if <i>Resources</i> of the referenced <i>ResourceType</i> may be created <i>canDelete</i> : defines if <i>Resources</i> of the referenced <i>ResourceType</i> may be deleted <i>canLink</i> : defines if <i>Resources</i> of the referenced <i>ResourceType</i> may be linked

2.5. AttributeAccessRight

Description	Concrete <i>AccessRight</i> that defines owner's authority of accessing <i>Attributes</i> of <i>Resources</i> that are of a specific <i>ResourceType</i> .
Attributes	<i>canRead</i> : defines if <i>Attributes</i> of the referenced <i>AttributeType</i> may be read <i>canWrite</i> : defines if <i>Attributes</i> of the referenced <i>AttributeType</i> may be written

3. Extensive Overview

Figure 3. All Classes

