Report tool

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$report is a utility tool enabling a template to get the modeling tool data.

$report.createValueSpecificationText(specification)

Create texts representing the ValueSpecification element.

	Name	Type	Description
Parameter(s)	specification	com.nomagic.uml2.ext.magicdraw.classes.mdkernel.ValueSpecification	A given Value Specification.
Return	-	java.lang.String	A String value for ValueSpecification.

$report.filterDiagram(diagramList, diagramTypes)

Return a collection of diagrams from a list of diagrams filtered by types.

	Name	Type	Description
Parameter(s)	diagramList	java.util.Collection	A collection of diagrams.
	diagramTypes	java.util.Collection	A collection of diagram types used as filters.
Return	-	java.util.Collection	A collection of filtered diagrams.

For example:

Sample of $report.filterDiagram(diagramList, diagramTypes)

```
#foreach($diagram in $report.filterDiagram($Diagram,["Class Diagram","Communication Diagram"]))
$diagram.name : $diagram.diagramType
#end
```

$report.filterElement(elementList, humanTypes)

Return a collection of elements from a list of elements filtered by human types.

	Name	Type	Description
Parameter(s)	elementList	java.util.Collection	A collection of elements.
	humanTypes	java.util.Collection	A collection of human types used as filters.
Return	-	java.util.Collection	A collection of filtered elements.

Note

You can change the human type depending on the language used in the modeling tool. For example, "Class" is the human type of the classes in the English modeling tool while "Classe" is the human type for the classes in French. The specified humanTypes needs to be changed when you change the language used in the modeling tool.

For example:

$report.filterElement(elementList, humanTypes)

```
#foreach($element in $report.filterElement($elements, ["Use Case", "Actor"]))
$element.name : $element.humanType
#end
```

$report.filterElementType(elementList, elementType)

Return a collection of elements from a list of elements filtered by element types.

	Name	Type	Description
Parameter(s)	elementList	java.util.Collection	A collection of elements.
	elementTypes	java.util.Collection	A collection of element types used as filters.
Return	-	java.util.Collection	A collection of filtered elements.

$report.filter(elementList, propertyName, propertyValue)

Return a collection of elements filtered by a specified property name.

	Name	Type	Description
Parameter(s)	elementList	java.util.Collection	A collection of elements.
	propertyName	java.lang.String	A property name.
	propertyValue	java.util.Collection	A collection of property names used as filters.
Return		java.util.Collection	A collection of filtered elements.

For example:

$report.filter(elementList, propertyName, propertyValue)

```
#foreach ($e in $report.filter($elements, "name", ["foo", "bar"]))
   $e.name
#end
```

$report.filterElementByStereotypeName(elementList, appliedStereotypeNameList)

Return a collection of elements from a list of elements filtered by applied stereotype names.

	Name	Type	Description
Parameter(s)	elementList	java.util.Collection	A collection of elements.
	appliedStereotypeNameList	java.util.Collection	A collection of applied stereotype names.
Return	-	java.util.Collection	A collection of filtered elements.

For example:

$report.filterElementByStereotypeName(elementList, appliedStereotypeNameList)

```
#foreach($element in $report.filterElementByStereotypeName($elements, ["Stereotype A", "Stereotype B"]))
   $element.name
#end
```

$report.findElementInCollection(elementList, name)

Find an element from a collection of elements by name.

	Name	Type	Description
Parameter(s)	elementList	java.util.Collection	A collection of elements.
	name	java.lang.String	An element name.
Return	-	com.nomagic.uml2.ext.magicdraw.classes.mdkernel.Element	An element instance. If it cannot find the element, it will return a null value.

For example:

```
#set($myClass = $report.findElementInCollection($Class, "MyClass"))
$myClass.humanType $myClass.name
```

$report.findRelationship(modelPackage)

Search and return a collection of relationship elements inside a package.

	Name	Type	Description
Parameter(s)	modelPackage	com.nomagic.uml2.ext.magicdraw.classes.mdkernel.Package	A package element.
Return	-	java.util.Collection	A collection of relationships in a package.

$report.findRelationship(modelPackage, recursive)

Search and return a collection of relationship elements inside a package.

	Name	Type	Description
Parameter(s)	modelPackage	com.nomagic.uml2.ext.magicdraw.classes.mdkernel.Package	A package element.
	recursive	boolean	If true, performs recursively.
Return	-	java.util.Collection	A collection of relationships in a package.

$report.getAppliedStereotypeByName(element, stereotypeName)

Return a stereotype assigned to an element.

	Name	Type	Description
Parameter(s)	element	com.nomagic.uml2.ext.magicdraw.classes.mdkernel.Element	An element.

	stereotypeName	java.lang.String	A stereotype name.
Return	-	com.nomagic.uml2.ext.magicdraw.mdprofiles.Stereotype	An assigned stereotype with a specified name.

$report.getBaseClassAssociations(classifier)

Obtain a collection of associations of a classifier.

	Name	Type	Description
Parameter(s)	classifier	com.nomagic.uml2.ext.magicdraw.classes.mdkernel.Classifier	A classifier.
Return	-	java.util.Collection	A collection of associations.

$report.getBaseClassInheritableAttributes(classifier)

Get a collection of inheritable attributes of a classifier.

	Name	Type	Description
Parameter(s)	classifier	com.nomagic.uml2.ext.magicdraw.classes.mdkernel.Classifier	A classifier.
Return	-	java.util.Collection	A collection of attributes.

$report.getBaseClassInheritableOperations(classifier)

Obtain a collection of inheritable operations of a classifier.

	Name	Type	Description
Parameter(s)	classifier	com.nomagic.uml2.ext.magicdraw.classes.mdkernel.Classifier	A classifier.
Return	-	java.util.Collection	A collection of operations.

$report.getBaseClassPorts(classifier)

Find a collection of ports of a classifier.

	Name	Type	Description
Parameter(s)	classifier	com.nomagic.uml2.ext.magicdraw.classes.mdkernel.Classifier	A classifier.
Return	-	java.util.Collection	Collection of ports.

$report.getBaseRealizedInterfaces(behavioredClassifier)

Find a collection of realized interfaces of a behaviored classifier.

	Name	Type	Description
Parameter(s)	behavioredClassifier	com.nomagic.uml2.ext.magicdraw.commonbehaviors.mdbasicbehaviors.BehavioredClassifier	A BehavioredClassifier.
Return	-	java.util.Collection	A collection of RealizedInterfaces.

$report.getBaseRelations(classifier)

Find a collection of relations of a classifier.

	Name	Type	Description
Parameter(s)	classifier	com.nomagic.uml2.ext.magicdraw.classes.mdkernel.Classifier	A classifier.
Return	-	java.util.Collection	A collection of relations.

$report.getBaseClassifiers(child)

Return a collection of base elements of a classifier.

	Name	Type	Description
Parameter(s)	child	com.nomagic.uml2.ext.magicdraw.classes.mdkernel.Classifier	A child class.
Return	-	java.util.Collection	A collection of base elements (classifiers).

$report.getClientElement(element)

Return a client of a relationship.

	Name	Type	Description
Parameter(s)	element	com.nomagic.uml2.ext.magicdraw.classes.mdkernel.Element	A relationship model element.
Return	-	com.nomagic.uml2.ext.magicdraw.classes.mdkernel.Element	The relationship's client.

$report.getComment(element)

Return a documentation of a given element.

	Name	Type	Description
Parameter(s)	element	com.nomagic.uml2.ext.magicdraw.classes.mdkernel.Element	An element.
Return	-	java.lang.String	The documentation of an element.

$report.getCustomizationProperty(element, stereotypeName, propertyName)

Get a customization property from the specified applied stereotype of the element.

	Name	Type	Description
Parameter(s)	element	com.nomagic.uml2.ext.magicdraw.classes.mdkernel.Element	An element.
	stereotypeName	java.lang.String	A stereotype name.
	propertyName	java.lang.String	A property name.
Return	-	java.lang.Object	A property tag value.

$report.getCustomizationPropertyString(element, stereotypeName, propertyName)

Get a customization property as a String value from the specified applied stereotype of the element.

	Name	Type	Description

Parameter(s)	element	com.nomagic.uml2.ext.magicdraw.classes.mdkernel.Element	An element.
	stereotypeName	java.lang.String	A stereotype name.
	propertyName	java.lang.String	A property name.
Return	-	java.lang.String	A property tag value as String.

$report.getDerivedClassifiers(parent)

Return a collection of derived elements of a classifier.

	Name	Type	Description
Parameter(s)	parent	com.nomagic.uml2.ext.magicdraw.classes.mdkernel.Classifier	A parent class.
Return	-	java.util.Collection	A collection of derived elements (classifiers).

$report.getDiagramElements(diagram)

Get a collection of elements from a diagram.

	Name	Type	Description
Parameter(s)	diagram	com.nomagic.uml2.ext.magicdraw.classes.mdkernel.Diagram	A diagram instance.
Return	-	java.util.Collection	A collection of elements in a diagram.

$report.getDiagramType(diagram)

Return a diagram type.

	Name	Type	Description
Parameter(s)	diagram	com.nomagic.uml2.ext.magicdraw.classes.mdkernel.Diagram	A diagram instance.
Return	-	java.lang.String	A diagram type.

$report.getElementProperties(element)

Return a list of property names, including UML properties and properties that are customized through DSL customization.

	Name	Type	Description
Parameter(s)	element	com.nomagic.uml2.ext.magicdraw.classes.mdkernel.Element	An element.
Return	-	java.util.Collection	A collection of property names.

For example:

```
#foreach($pp in $report.getElementProperties($element))
$pp.name > $pp.value
#end
```

⚠ By default, all properties are exported. They can be filtered by adding a "STANDARD" or "EXPERT" argument, e.g. *$report.getElementProperties ($element, "STANDARD").*

$report.getElementPropertiesName(element)

Return a list of property names, including UML properties and properties that are customized through DSL customization.

	Name	Type	Description
Parameter(s)	element	com.nomagic.uml2.ext.magicdraw.classes.mdkernel.Element	An element.
Return	-	java.util.Collection	A collection of property names.

For example:

```
#foreach($name in $report.getElementPropertiesName($element))
$name
#end
```

$report.getDSLProperty(element, propertyName)

Return a DSL property.

	Name	Type	Description
Parameter(s)	element	com.nomagic.uml2.ext.magicdraw.classes.mdkernel.Element	An element.
	propertyName	java.lang.String	A property name.
Return	-	java.lang.Object	A property value.

$report.getElementComment(element)

Return a comment attached to an element. If no comment is attached, it will return a null value.

	Name	Type	Description
Parameter(s)	element	com.nomagic.uml2.ext.magicdraw.classes.mdkernel.Element	An element.
Return	-	com.nomagic.uml2.ext.magicdraw.classes.mdkernel.Comment	A comment instance of the element.

$report.getElementName(element)

Get an element's name. If the name is empty, it will return "<unnamed>". This method performs the following procedures:

- If the element is generalized from the NamedElement metaclass, it will return *$element.name*
- If the element is generalized from the Slot metaclass, it will return *$element.definingFeature.name*
- If the element is a UML element, it will return *$element.humanName*
- Else returns *$element.toString()*

	Name	Type	Description
Parameter(s)	element	java.lang.Object	An element.
Return	-	java.lang.String	An element name.

$report.getIconFor(element)

Return an image icon of an element with a default icon filename (“icon_”+element type).

	Name	Type	Description
Parameter(s)	element	com.nomagic.magicdraw.uml.BaseElement	A modeling tool element.

Return	-	com.nomagic.magicreport.Image	An image object of the element's icon.

For example:

$report.getIconFor(element)

```
$report.getIconFor($classObject)
```

This results in an Image object of a class whose name is “icon_class”.

$report.getImageFor(element, dpi)

Return an image with specified DPI of an element.

Name	Type	Description	Description
Parameter(s)	element	com.nomagic.magicdraw.uml.BaseElement	A modeling tool element.
	dpi	int	DPI of the element image.
Return	-	com.nomagic.magicreport.Image	An image object with specified DPI.

Note

- The DPI value can be 1 to 4800.
- If less than 1, the value is not taken, and the DPI set in *Template* and *Global* will be used respectively. See setting image DPI.
- If more than 4800, the value will be rounded down to 4800.

$report.getIconFor(element, prefix, suffix, hashCode)

Return an image icon of an element. The icon name depends on the ***hashCode*** value if ***hashCode*** equals true, the icon’s name is set as ***”icon_”+hash*** code value of the icon. If the ***hashCode*** value equals false, the icon name is set as

	Name	Type	Description
Parameter(s)	element	com.nomagic.magicdraw.uml.BaseElement	A modeling tool element.
	prefix	java.lang.String	A prefix of an icon name.
	suffix	java.lang.String	A suffix of an icon name.
	hashCode	boolean	If true, use hash code of an icon as the icon name and exclude a prefix or suffix from the name.
Return	-	com.nomagic.magicreport.Image	An image object of an element’s icon.

For example:

To get an icon and set a name for hash code

```
$report.getIconFor($classObject, “prefix_”, “_suffix”, true)
```

This results in an Image object of a class whose name “icon_24676200”. The number in the icon name is hash code, which is regenerated whenever the modeling tool starts.

To get an icon and set a name for prefix and suffix

```
$report.getIconFor($classObject, “prefix_”, “_suffix”, false)
```

This results in an Image object of a class whose name is “prefix_class_suffix”.

$report.getIconFor(type)

Return an image icon for an element type with a default icon’s filename ((“icon_”+element type).

	Name	Type	Description
Parameter(s)	type	java.lang.String	A type name.
Return	-	com.nomagic.magicreport.Image	An image object for the element’s icon.

For example:

$report.getIconFor(type)

```
$report.getIconFor("class")
```

This results in an Image object of a class whose name is “icon_class”.

$report.getIconFor(type, prefix, suffix, hashCode)

Return an image icon for an element type. The icon’s name depends on the ***hashCode*** value if ***hashCode*** equals true, the icon name is set as ***“icon_” +hash*** code value of the icon. If the ***hashCode*** value equals false, the icon name is set as ***prefix + element type + suffix***.

	Name	Type	Description
Parameter(s)	type	java.lang.String	A type name.
	prefix	java.lang.String	A prefix for an icon name.
	suffix	java.lang.String	A suffix for an icon name.
	hashCode	boolean	If true, use hash code of an icon as the icon’s name and exclude a prefix or suffix from the name.
Return	-	com.nomagic.magicreport.Image	An image object for an element’s icon.

For example:

To get an icon and set a name for hash code

```
$report.getIconFor(“class”, “prefix_”, “_suffix”, true)
```

This results in an Image object of a class whose name “icon_24676200”. The number in the icon name is hash code, which is regenerated whenever the modeling tool starts.

To get an icon and set a name for prefix and suffix
`$report.getIconFor("class", "prefix_", "_suffix", false)`

This results in an Image object of a class whose name is "prefix_class_suffix".

$report.getIncludeUseCase(useCase)

Return a collection of included elements of a UseCase.

	Name	Type	Description
Parameter(s)	useCase	com.nomagic.uml2.ext.magicdraw.mdusecases.UseCase	A UseCase instance.
Return	-	java.util.Collection	A collection of included UseCases.

$report.getInnerElement(element)

Return a collection of inner elements.

	Name	Type	Description
Parameter(s)	element	com.nomagic.uml2.ext.magicdraw.classes.mdkernel.Element	An element.
Return	-	java.util.Collection	A collection of inner elements.

$report.getInteractionMessageType(message)

Return an interaction message type.

	Name	Type	Description
Parameter(s)	message	com.nomagic.uml2.ext.magicdraw.interactions.mdbasicinteractions.Message	A message instance.
Return	-	java.lang.String	A message type.

$report.getMetaClass(stereotype)

Return a stereotype meta class.

	Name	Type	Description
Parameter(s)	stereotype	com.nomagic.uml2.ext.magicdraw.mdprofiles.Stereotype	A stereotype instance.
Return	-	java.util.Collection	A collection of Meta Classes.

$report.getMetaClass(element)

Return an element meta class.

	Name	Type	Description
Parameter(s)	element	com.nomagic.uml2.ext.magicdraw.classes.mdkernel.Element	An element.
Return	-	java.util.Collection	A collection of Meta Classes.

$report.getPresentationDiagramElements(diagram)

Return presentation elements in a diagram. This method will return all presentation elements from the diagram, except non-manipulator symbols.

	Name	Type	Description
Parameter(s)	diagram	com.nomagic.uml2.ext.magicdraw.classes.mdkernel.Diagram	A diagram instance.
Return	-	java.util.Collection	A collection of elements.

For example:

```
#foreach($symbol in $report.getPresentationDiagramElements($diagram))
#set($element = $symbol.getElement())
$element.humanType $element.name
#end
```

$report.getPresentationDiagramElements(diagram, includeNonManipulator)

Return presentation elements in a diagram.

	Name	Type	Description
Parameter(s)	diagram	com.nomagic.uml2.ext.magicdraw.classes.mdkernel.Diagram	A diagram.
	include NonManipulator	boolean	True to include all non-manipulator elements.
Return	-	java.util.Collection	A collection of elements.

$report.getPresentationElementBounds(diagram, element)

Return the polygonal bounds of an element. The bounds specify the component coordinates to its diagram.

	Name	Type	Description
Parameter(s)	diagram	com.nomagic.uml2.ext.magicdraw.classes.mdkernel.Diagram	A target diagram.
	element	com.nomagic.uml2.ext.magicdraw.classes.mdkernel.Element	A presentation element on a given diagram.
Return	-	java.util.List	Returns the polygonal bounds of an element. If the element is not found in the diagram, it will return null.

$report.getPresentationElementBounds(element)

Return the polygonal bounds of an element. The bounds specify this component's coordinate to its diagram.

	Name	Type	Description

Parameter(s)	element	com.nomagic.magicdraw.uml.symbols.PresentationElement	A presentation element on a diagram.
Return	-	com.nomagic.magicdraw.magicreport.helper.Polygon	Returns the polygonal bounds of an element.

$report.getPresentationElementRectangle(diagram, element)

Return the rectangular bounds of an element. The bounds specify the component coordinates to its diagram.

	Name	Type	Description
Parameter(s)	diagram	com.nomagic.uml2.ext.magicdraw.classes.mdkernel.Diagram	A target diagram.
	element	com.nomagic.uml2.ext.magicdraw.classes.mdkernel.Element	A presentation element on a given diagram.
Return	-	java.util.List	Returns the rectangular bounds of an element. If the element is not found in the diagram, it will return null.

$report.getQualifiedName(namedElement, separator)

Get a qualified name. A qualified name is the name that allows a ***NamedElement*** to be identified within a hierarchy of nested ***Namespaces***. It is constructed from the names of the containing namespaces starting at the root of the hierarchy and ending with the name of the ***NamedElement*** itself.

	Name	Type	Description
Parameter(s)	namedElement	NamedElement	A NamedElement.
	separator	java.lang.String	A separator symbol. If the value is null or an empty string, the '::' will be used.
Return	-	java.lang.String	A qualified name.

$report.getPackageQualifiedName(namedElement, separator)

Get a qualified name by considering only **Packages** and a given element. **Models** and **Profiles** will not be included in the qualified name.

For example, given the element hierarchy:

Sample of element hierarchy

```
Design : Model -> com : Package -> nomagic : Package -> ui -> Package -> BaseDialog : Class
```

Sample of a template code of the element hierarchy

```
$report.getPackageQualifiedName($class, ".")
```

If $class is a “BaseDialog” element, the result from the above template code will be as follows.

The result of the template code
`com.nomagic.ui.BaseDialog`

	Name	Type	Description
Parameter(s)	namedElement	NamedElement	A NamedElement.
	separator	java.lang.String	A separator symbol. If the value is null or an empty string, the '::' will be used.
Return	-	java.lang.String	A qualified name.

$report.getReceivingOperationalNode(element)

Get the needline association ends.

	Name	Type	Description
Parameter(s)	element	com.nomagic.uml2.ext.magicdraw.classes.mdkernel.Element	An element.
Return	-	com.nomagic.uml2.ext.magicdraw.classes.mdkernel.Element	A needline association instance.

$report.getRelationship(element)

Return an element's relationship.

	Name	Type	Description
Parameter(s)	element	com.nomagic.uml2.ext.magicdraw.classes.mdkernel.Element	An element.
Return	-	java.util.Collection	A collection of relationships.

For example:

```
#foreach($relationship in $report.getRelationship($element))
Name: $relationship.name
#end
```

$report.getRelationship(element, recursive)

Return a collection of element relationships.

	Name	Type	Description
Parameter(s)	element	com.nomagic.uml2.ext.magicdraw.classes.mdkernel.element	An element.
	recursive	boolean	If true, performs recursively.
Return	-	java.util.Collection	A collection of relationships.

$report.getRelativeActor(element)

Return an element's relative actor.

	Name	Type	Description
Parameter(s)	element	com.nomagic.uml2.ext.magicdraw.classes.mdkernel.Element	An element.

Return	-	java.util.Collection	A collection of actors.

$report.getSendingOperationalNode(element)

Return the needline's association ends.

	Name	Type	Description
Parameter(s)	element	com.nomagic.uml2.ext.magicdraw.classes.mdkernel.Element	An element.
Return	-	com.nomagic.uml2.ext.magicdraw.classes.mdkernel.Element	A needline association instance.

$report.getSlotValue(element, ClassifierName, DefiningFeatureName)

Find and retrieve the values of a slot whose name and classifier's name are ***DefiningFeatureName*** and ***ClassifierName*** respectively. The code enables case-sensitivity queries such that only those case-sensitive matches will return.

	Name	Type	Description
Parameter(s)	element	com.nomagic.uml2.ext.magicdraw.classes.mdkernel.Element	An element whose slot value you want to find.
	ClassifierName	java.lang.String	A classifier name.
	DefiningFeatureName	java.lang.String	A slot name.
Return	-	java.util.Collection	A collection of ValueSpecifications of a slot.

For example:

Use the code to retrieve the value of a slot whose name and classifier's name are Name and Personal Data respectively.

```
#foreach($instance in $InstanceSpecification)
Slot value is $report.getSlotValue($instance, "Personal Data", "Name")
#end
```

- "Personal Data" is the name of the classifier.
- Name" is the name of the slot.

$report.getStereotypeProperty(element, stereotypeName, propertyName)

Get a stereotype property.

	Name	Type	Description
Parameter(s)	element	com.nomagic.uml2.ext.magicdraw.classes.mdkernel.Element	An element.
	stereotypeName	java.lang.String	A stereotype name.
	propertyName	java.lang.String	A property name.
Return	-	java.lang.Object	A property value.

For example:

```
#set($obj = $report.getStereotypeProperty($element, "MyStereotype", "myObject"))
$obj.name
```

Warning: Duplicate stereotype name

~~stereotypeName is String. Please be aware of duplicate name of stereotype that may cause to random returned result. $report.getStereotypeProperty (element, profileName, stereotypeName, propertyName) may be an option.~~

$report.getStereotypeProperty(element, profileName, stereotypeName, propertyName)

Get a stereotype property.

	Name	Type	Description
Parameter(s)	element	com.nomagic.uml2.ext.magicdraw.classes.mdkernel.Element	An element instance.
	profileName	java.lang.String	A profile name.
	stereotypeName	java.lang.String	A stereotype name.
	propertyName	java.lang.String	A property name.
Return	-	java.lang.Object	A property value.

$report.getStereotypePropertyString(element, stereotypeName, propertyName)

Return a stereotype property as a String value.

	Name	Type	Description
Parameter(s)	element	com.nomagic.uml2.ext.magicdraw.classes.mdkernel.Element	An element instance.
	stereotypeName	java.lang.String	A stereotype name.
	propertyName	java.lang.String	A property name.
Return		java.lang.String	A property value as String.

For example:

```
#set($str = $report.getStereotypePropertyString($element, "MyStereotype", "myString"))
$str
```

Warning: Duplicate stereotype name

~~stereotypeName is String. Please be aware of duplicate name of stereotype that may cause to random returned result. $report.getStereotypePropertyString(element, profileName, stereotypeName, propertyName) may be an option.~~

$report.getStereotypePropertyString(element, profileName, stereotypeName, propertyName)

Get a stereotype property as a String value.

	Name	Type	Description
Parameter(s)	element	com.nomagic.uml2.ext.magicdraw.classes.mdkernel.Element	An element instance.
	profileName	java.lang.String	A profile name.
	stereotypeName	java.lang.String	A stereotype name.
	propertyName	java.lang.String	A property name.

Return	-	java.lang.String	A property value as String.

$report.getPropertyGroupsByStereotype(stereotype)

Return a collection of property groups for the given stereotype.

	Name	Type	Description
Parameter(s)	stereotype	com.nomagic.uml2.ext.magicdraw.classes.mdkernel.Class	A stereotype element.
Return	-	java.util.Collection	A collection of com.nomagic.magicdraw.propertygroup.PropertyGroup objects or empty if the stereotype has no group defined.

For example:

```
#foreach($stereotype in $report.getStereotypes($element))
#foreach($propertyGroup in $report.getPropertyGroupsByStereotype($stereotype))
Group: $propertyGroup.name
#end
#end
```

$report.getPropertyGroupsByElement(element, addAlwaysVisible)

Return a set of property groups for the given element.

	Name	Type	Description
Parameter(s)	element	com.nomagic.uml2.ext.magicdraw.classes.mdkernel.Element	An element that may have property groups.
	addAlwaysVisible	boolean	**True** if using all set stereotypes and all showWhenNotApplied stereotypes that can be set. **False** if using only all set stereotypes.
Return	-	java.util.Set	A set of com.nomagic.magicdraw.propertygroup.PropertyGroup objects that are directly associated with the element.

For example:

```
#foreach($propertyGroup in $report.getPropertyGroupsByStereotype($element, true))
Group: $propertyGroup.name
#end
```

$report.getQProperty(element, propertyName)

Get a property for an element with DSL property groups, and each property group has its own property.

	Name	Type	Description
Parameter(s)	element	com.nomagic.uml2.ext.magicdraw.classes.mdkernel.Element	An element.
	propertyName	java.lang.String	A property name.
Return	-	com.nomagic.magicdraw.properties.Property	A property object for a specific element and propertyName.

For example:

```
#foreach($stereotype in $report.getStereotypes($element))
Stereotype: $stereotype.name
#foreach($propertyGroup in $report.getPropertyGroupsByStereotype($stereotype))
Group: $propertyGroup.name
#foreach($propertyName in $propertyGroup.getPropertyList())
#set($property = $report.getQProperty($element, $propertyName))
Property name: $property.name
Property value: $property.value
-------------------------------
#end
#end
#end
```

$report.getStereotypes(element)

Return all stereotypes applied to an element. This method is replaced by ***$element.appliedStereotype***.

	Name	Type	Description
Parameter(s)	element	com.nomagic.uml2.ext.magicdraw.classes.mdkernel.Element	An element.
Return	-	java.util.List	A list of stereotype instances.

$report.getSupplierElement(element)

Return the supplier of a relationship.

	Name	Type	Description
Parameter(s)	element	com.nomagic.uml2.ext.magicdraw.classes.mdkernel.Element	A relationship model element.
Return	-	com.nomagic.uml2.ext.magicdraw.classes.mdkernel.Element	The relationship's supplier.

$report.getUsageElements(usagesMap, element)

Return the usage of a specified element.

	Name	Type	Description
Parameter(s)	usagesMap	java.util.Map	The Usage Map of the modeling tool.
	element	com.nomagic.uml2.ext.magicdraw.classes.mdkernel.Element	An element.
Return	-	java.util.Collection	A collection of element usages.

$report.getUsages(selectedObjects)

Return the Usage Map of the modeling tool. It uses the getUsageElements method to return the usage of a specified element.

	Name	Type	Description
Parameter(s)	selectedObjects	java.lang.Object	An element.
Return	-	java.util.Map	A Map instance of element usages.

$report.hasStereotype(element)

Check if an element has stereotypes.

	Name	Type	Description
Parameter(s)	element	com.nomagic.uml2.ext.magicdraw.classes.mdkernel.Element	An element to check.
Return	-	boolean	True if it has a stereotype.

$report.containsStereotype(element, stereotypeName)

Return true if an element contains a stereotype (including all derived stereotypes) for a specified stereotype name.

	Name	Type	Description
Parameter(s)	element	com.nomagic.uml2.ext.magicdraw.classes.mdkernel.Element	An element to check.
	stereotypeName	java.lang.String	A stereotype name to be tested.
Return	-	boolean	True if the element contains a stereotype for the specified stereotype name.

For example:

```
#if($report.containsStereotype($element, "MyStereotype"))
$element.name has been applied <<MyStereotype>>.
#end
```

$report.containsStereotype(element, stereotypeName, includeDerived)

Return true if an element contains a stereotype for a specified stereotype name.

	Name	Type	Description
Parameter(s)	element	com.nomagic.uml2.ext.magicdraw.classes.mdkernel.Element	An element to test.
	stereotypeName	java.lang.String	A stereotype name to be tested.
	includeDerived	boolean	True if the searched target includes all derived stereotypes; otherwise, false.
Return	-	boolean	True if the element contains a stereotype for the specified stereotype name.

$report.isDerivedClassifier(parent, child)

Check if a child is derived from the parent by generalization.

	Name	Type	Description
Parameter(s)	parent	com.nomagic.uml2.ext.magicdraw.classes.mdkernel.Classifier	A parent.
	child	com.nomagic.uml2.ext.magicdraw.classes.mdkernel.Classifier	A possible child.
Return	-	boolean	True if it is derived from the parent by generalization.

$report.isNamedElement(element)

Return whether an element is a NamedElement.

	Name	Type	Description
Parameter(s)	element	com.nomagic.uml2.ext.magicdraw.classes.mdkernel.Element	An element to test.
Return	-	boolean	True if the given element is a NamedElement; otherwise, false

$report.isNull(obj)

Test and return true if an object is null.

	Name	Type	Description
Parameter(s)	obj	java.lang.Object	An object being tested.
Return	-	boolean	True if the object is null.

$report.isRelationship(element)

Test and return true if an element is a relationship.

	Name	Type	Description
Parameter(s)	element	com.nomagic.uml2.ext.magicdraw.classes.mdkernel.Element	An element being tested.
Return	-	boolean	True if the object is a relationship.

$report.serialize(hyperlink)

Convert *com.nomagic.magicdraw.hyperlinks.Hyperlink* to *com.nomagic.magicdraw.plugins.impl.magicreport.helper.Hyperlink*. Report Wizard needs the *com.nomagic.magicdraw.plugins.impl.magicreport.helper.Hyperlink* class wrapper to return *com.nomagic.magicdraw.hyperlinks.Hyperlink* data.

	Name	Type	Description
Parameter(s)	hyperlink	com.nomagic.magicdraw.hyperlinks.Hyperlink	A modeling tool hyperlink.
Return	-	com.nomagic.magicdraw.plugins.impl.magicreport.helper.Hyperlink	A Report Wizard hyperlink instance.

$report.getUsedBy(element)

Return a list of element(s) used by this element (except diagrams).

	Name	Type	Description
Parameter(s)	element	com.nomagic.uml2.ext.magicdraw.classes.mdkernel.Element	An element of which to determine the usage.
Return		java.util.Collection	A collection of elements used by an input element.

$report.hasProperty(element, propertyName)

Return true when a property with a given name is specified in this element, otherwise returns false.

	Name	Type	Description
Parameter(s)	element	com.nomagic.uml2.ext.magicdraw.classes.mdkernel.Element	An element.

	propertyName	java.lang.String	A property name.
Return	-	java.lang.Boolean	Return true when a property with a given name is specified in this element, otherwise returns false.

For example:

```
#foreach($element in $elements)
$report.hasProperty($element, "name")
#end
```

- $element is the element.
- data is the name of the property.

$report.getProperty(element, propertyName)

Get element property.

	Name	Type	Description
Parameter(s)	element	com.nomagic.uml2.ext.magicdraw.classes.mdkernel.Element	An element.
	propertyName	java.lang.String	A property name.
Return	-	java.lang.Object	A property value.

For example:

Sample of $report.getProperty(element, propertyName)

```
#foreach($element in $elements)
$report.getProperty($element, "name")
#end
```

- $element is the element.
- name is the name of the property.

$report.findElementByName(source, regex)

Search and return elements that match the name using a regular expression.

	Name	Type	Description
Parameter(s)	source	java.util.Collection	A collection of elements.
	regex	java.lang.String	A regular expression with which the name is to be matched.
Return	-	java.util.Collection	A collection of matching elements.

For example:

$report.findElementByName(source, regex)

```
#foreach($ele in $report.findElementByName($elements, "[A]+.*"))
$ele.name
#end
```

- $elements is a collection of elements to be found.
- “[A]+.*” is a regular expression to find which element matches the name. In this example, the following are the names that match, such as Auxiliary, AppServer, and Alternative Fragment.

$report.getPresentationElements(diagram)

Get a presentation element in a diagram. This method is equivalent to $report.getPresentationDiagramElements(diagram).

	Name	Type	Description
Parameter(s)	diagram	com.nomagic.uml2.ext.magicdraw.classes.mdkernel.Diagram	A diagram instance.
Return	-	java.util.Collection	A collection of elements.

For example:

$report.getPresentationElements(diagram)

```
#foreach($diagram in $Diagram)
$foreach($d in $report.getPresentationElements($diagram))
$d.name
#end
#end
```

- **$diagram** is the diagram instance.

$report.getUsageRepresentationText(baseElement, bool)

Format the usage subject. The output string is the same as the Result column of Used by table in Magic Draw.

	Name	Type	Description
Parameter(s)	baseElement	com.nomagic.magicdraw.uml.BaseElement	A model element to be formatted.
	bool	java.lang.Boolean	True if a full path is used, otherwise false.
Return	-	java.lang.String	A formatted element.

For example:

$report.getUsageRepresentationText(baseElement, bool)

```
#foreach($baseElement in $Elements)
$report.getUsageRepresentationText($baseElement, false)
#end
```

- $baseElement is the model element to be formatted.
- false if a full path is not used. In this example, a full path is not used.

$report.getUseCaseNumber(element)

Return a use case number of an element.

	Name	Type	Description
Parameter(s)	element	com.nomagic.uml2.ext.magicdraw.classes.mdkernel.Element	A model element.
Return	-	java.lang.String	A use case number.

For example:

Sample of $report.getUseCaseNumber(element)

```
#foreach ($uc in $RequirementsUseCase)
$report.getUseCaseNumber($uc) $uc.name
#end
```

$report.getElementURL(element)

Return a modeling tool's element URL.

	Name	Type	Description
Parameter(s)	element	com.nomagic.uml2.ext.magicdraw.classes.mdkernel.Element	An element.
Return	elementURL	java.lang.String	An element URL.

For example:

Sample of $report.getElementURL(element)

```
#foreach ($element in $elements)
$report.getElementURL($element)
#end
```

$report.isEmpty(obj)

Test and return true if an object is null, empty string, or empty collection.

	Name	Type	Description
Parameter(s)	obj	java.lang.Object	An object being tested.
Return	-	boolean	True if the object is null, empty string, or empty collection.

For example:

Sample of $report.isEmpty(obj)

```
#if ($report.isEmpty($var))
Object is null, empty string or empty collection
#end
```

Note

When checking HTML String format, **$report.isEmpty** ignores all ** **, spaces, and line feeds in the returned tag value and returns **false** when there is one or more characters.

$report.getBasicFlows(usecase:UseCase) : List<FlowStep>

Find and return a list of basic flows from a given use case. If a use case scenario is not being used, it will retrieve the value from "requirementUseCase" stereotype tags.

	Name	Type	Description
Parameter(s)	usecase	com.nomagic.uml2.ext.magicdraw.mdusecases.UseCase	A targeted Use Case.
Return	-	List<com.nomagic.magicdraw.usecasescenarios.scenarios.FlowStep>	A list of flow steps. A Flow Step is an object representing each step of a Use Case flow.

The <FlowStep> is a "com.nomagic.magicdraw.usecasescenarios.scenarios.FlowStep" class.

The important properties of <FlowStep> are as follows:

- name prints a name of a current step, for example: $flowStep.name.
- element returns an element associates with a current step, for example: #set ($e = $flowStep.element).
- alternativeConditions returns a list of alternative steps <AlternativeCondition> from a current step, for example: #foreach ($alter in $flowStep. alternativeConditions) #end.
- exceptionTypes returns a list of exception steps <ExceptionType> from a current step, for example: #foreach ($alter in $flowStep.exceptionTypes) #end.

For example:

Sample of $report.getBasicFlows(usecase:UseCase) : List<FlowStep>

```
#set ($basicFlowList = $report.getBasicFlows($useCase))
#foreach ($flowStep in $basicFlowList)
   $flowStep.name
   #foreach ($alter in $flowStep.alternativeConditions)
      - $alter.name
   #end
#end
```

$report.getAlternativeFlows(usecase:UseCase) : List<FlowStep>

Find and return all alternative flows from a given use case. The alternative flows will be listed from all possible branches of basic flows. If a use case scenario is not being used, it will retrieve the value from "requirementUseCase" stereotype tags.

	Name	Type	Description
Parameter(s)	usecase	com.nomagic.uml2.ext.magicdraw.mdusecases.UseCase	A targeted Use Case.
Return	-	List<com.nomagic.magicdraw.usecasescenarios.scenarios.FlowStep>	A list of flow steps. A Flow Step is an object representing each step of a Use Case flow.

For example:

Sample of $report.getAlternativeFlows(usecase:UseCase) : List<FlowStep>

```
#set ($alternativeFlowList = $report.getAlternativeFlows($useCase))
$useCase.name
 #foreach ($flowStep in $alternativeFlowList)
   $flowStep.name
   #foreach ($alternative in $flowStep.alternativeConditions)
      $alternative.name
         #foreach ($alternativeFlow in $alternative.alternativeFlowSteps)
         $alternativeFlow.name
         #end
   #end
 #end
```

$report.getExceptionalFlows(usecase:UseCase) : List<FlowStep>

Find and return all exceptional flows from a given use case. The alternative flows will be listed from all possible branches of basic flows. If the use case scenario is not being used, it will retrieve the value from "requirementUseCase" stereotype tags.

	Name	Type	Description
Parameter(s)	usecase	com.nomagic.uml2.ext.magicdraw.mdusecases.UseCase	A targeted Use Case.
Return	-	List<com.nomagic.magicdraw.usecasescenarios.scenarios.FlowStep>	A list of flow steps. A flow step is an object representing each steps of a Use Case flow.

For example:

Sample of $report.getExceptionalFlows(usecase:UseCase) : List<FlowStep>

```
#set ($exceptionFlowList = $report.getExceptionalFlows($useCase))
     #foreach ($flowStep in $exceptionFlowList)
         $flowStep.name
         #foreach (#exception in $flowStep.exceptionTypes)
             $exception.name
             #foreach ($exceptionalFlow in $exception.exceptionalFlowSteps)
                  $exceptionalFlow.name
             #end
         #end
     #end
```

$report.getOwnedElementsIncludingAdditional(element, includePureOwned) : List<Element>

This code returns owned elements of a given element including additional owned elements defined in the DSL specification by additionalContentProperty.

	Name	Type	Description
Parameter(s)	element	com.nomagic.uml2.ext.magicdraw.classes.mdkernel.Element	A model element.
	includePureOwned	java.lang.Boolean	True if includes an element owned directly in the ownedElement UML metaproperty. Otherwise False.

Return	-	java.util.List	A list of owned elements of a given element.

The following are the examples of using the code.

Sample 1: $report.getOwnedElementsIncludingAdditional(element, includePureOwned) : List<Element>

```
#foreach($e in $elements)
$e.name : $e.humanType
  #foreach($child in $report.getOwnedElementsIncludingAdditional($e, true))
    $child.name : $child.humanType
  #end
#end
```

Sample 2: $report.getOwnedElementsIncludingAdditional(element, includePureOwned) : List<Element>

```
#foreach($e in $SmartPackage)
$e.name : $e.humanType
    #foreach($child in $report.getOwnedElementsIncludingAdditional($e, true))
       $child.name : $child.humanType
    #end
#end
```

Sample 3: $report.getOwnedElementsIncludingAdditional(element, includePureOwned) : List<Element>

```
#set($packages = $array.createArray())
#set($void = $array.addCollection($packages, $Package))
#set($void = $array.addCollection($packages, $SmartPackage))
#foreach($e in $packages)
$e.name : $e.humanType
    #foreach($child in $report.getOwnedElementsIncludingAdditional($e, true))
        $child.name : $child.humanType
    #end
#end
```