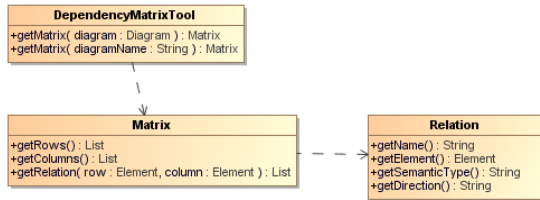


# Dependency matrix tool API

Dependency Matrix tool allows templates to access data from a Dependency Matrix, use diagrams to get data, row elements, column names, or relations between row and column elements from the matrix.



A Class diagram of the DependencyMatrixTool.

You can use the following Dependency Matrix tool API in the template.

## Class DependencyMatrixTool

Use the following methods to use diagrams to get data.

- `+getMatrix( diagram : Diagram ) : Matrix`
- `+getMatrix( diagramName : String ) : Matrix`

## Class Matrix

Use the following methods to use diagrams to get row elements, column elements, and relations between row and column elements.

- `+getRows() : List<Element>`
- `+getColumns() : List<Element>`
- `+getRelation( row: Element, column : Element ) : List<Relation>`

## Class Relation

Use the following methods for class relations.

- `+getName() : String`
- `+getElement() : Element`
- `+getSemanticType() : String`
- `+getDirection() : String`

## Using Diagrams to Get Data from Dependency Matrix

A Dependency Matrix is a special diagram. You can retrieve it using the `$Diagram` variable. Thus, every method must accept a diagram instance or a diagram's name. Use the following methods to return a Dependency Matrix instance. You can retrieve rows and columns from the Dependency Matrix instances.

## Getting Dependency Matrix Instances from Diagram Elements

### `getMatrix(diagram : Diagram) : Matrix`

To get a Dependency Matrix instance from a specified diagram element, use the following code.

```
#set($matrix = $depmatrix.getMatrix($diagram))
```

Where the parameter is:

- `diagram` – a diagram element

Return an instance of Dependency Matrix.

For example:

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```
#foreach($diagram in $project.getDiagrams("Dependency Matrix"))
#set($matrix = $depmatrix.getMatrix($diagram))
#end
```

## Getting Dependency Matrix Instances from Diagram Names

### **getMatrix(diagramName : String) : Matrix**

To get a Dependency Matrix instance from a specified diagram's name.

```
#set($matrix = $depmatrix.getMatrix($diagram))
```

Where the parameter is:

- diagram – a diagram's name

Return a Dependency Matrix instance.

Example code:

```
#set($diagram = "diagram name")
#set($matrix = $depmatrix.getMatrix($diagram))
```

## Getting Row Elements

The Matrix consists of rows and columns.

## Getting All Row Elements

### **getRows() : List<Element>**

Use this method to retrieve a list of row elements.

```
$matrix.getRows()
```

The returned value is a list of Elements.

To print all row elements' names, for example, type the following code:

```
#foreach($row in $matrix.rows)
$row.name
#end
```

## Getting Column Elements

The matrix consists of rows and columns.

## Getting all column elements

### **getColumns() : List<Element>**

Use this method to retrieve a list of column elements.

```
$matrix.getColumns()
```

The returned value is a list of Elements.

To print all column elements' names, for example, type the following code:

```
#foreach($col in $matrix.columns)
$col.name
#end
```

## Getting Relations between Row and Column Elements

**getRelation(row : Element, column : Element) : List<Relation>**

Use this method to retrieve the relations between row and column elements.

```
$matrix.getRelation($row, $column)
```

Where the parameter is:

- row – a row element
- column – a column element

The returned value is a list of Relations.

The Relation class contains the following methods:

- **getSemanticType** : String  
Return the semantic type
- **getElement** : Element  
Return a relationship element or null if the relationship is not an element, for example, tag name.
- **getName** : String  
Return a relationship name. If the relationship is a tag name, it will return the tag name. If the relationship is NamedElement, it will return the element name; otherwise, return a human name.
- **getDirection** : String  
Return the direction.

To print the row, column, and its relationship name, for example, type the following code:

```
#foreach($row in $matrix.rows)
  #foreach($col in $matrix.columns)
    #foreach($rel in $matrix.getRelation($row, $col))
      $row.name has $rel.name with $col.name
    #end
  #end
#end
```

To print rows, columns, and relations in a spreadsheet file format, for example, type the following code:

```
#import('depmatrix','com.nomagic.
reportwizard.tools.
DependencyMatrixTool')

#forpage ($diagram in $report.
filterDiagram($Diagram,["Dependency
Matrix"]))

#set($matrix=$depmatrix.getMatrix
($diagram))

$bookmark.create($diagram.name)
```

```
#forcol ($col in $matrix.
columns)$col.name#endcol
```

#forrow(\$row in \$matrix.rows)\$row.name	#forcol (\$col in \$matrix.columns)#if(!\$report. isEmpty(\$matrix.getRelation (\$row,\$col)))-> #end#endcol	#e nd row
#endpage		