Query methods

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This section provides query methods that you can use to retrieve an array of elements by query pattern.

Retrieving an Array of Element by Query Pattern

```
$query.get(query)
```

- **Parameters**: *query* : String (the query string as described in section **Recognizable Query Patterns**.
- **Returns**: *java.util.List<Element>* (a list or a collection of MagicDraw Elements or an empty List if there is no matching element).
- **The sample code** to print all Use Case elements under a packagable element named *foo* is as follows:

```
#foreach ($uc in $query.get("usecase[owner=foo]"))
 $uc.name in $uc.owner.name
#end
```

Getting a Single Result from Query Functions

Since a MagicDraw model element does not have a unique identified attribute so all methods will be returned in a Collection. Thus we will need convenient methods to get a single result from the Collection. Additional methods for getting a single result from query methods are as follows:

- first() – returns the first element from a collection.
- last() – returns the last element from a collection.
- get(int) – returns the nth element of a collection.
- unique() – returns the first element from a collection (equivalent to first).

Getting the First Element from a Collection

```
$query.get(query).first()
```

- **Returns**: Element (the first element from a query result collection or a null value if there is no matching element).
- **A Sample code** to print the first package is as follows:

```
$query.get("package").first()
```

Getting the Last Element from a Collection

```
$query.get(query).last()
```

- **Returns**: Element (the last element from a query result collection or a null value if there is no matching element).
- **A sample code** to print the last package is as follows:

```
$query.get("package").last()
```

Getting the nth Element from a Collection

```
$query.get(query).get(index)
```

- Parameters: index : int (a zero-based integer indicating which element to retrieve).
- Returns: Element (an element from a specified index of a query result collection or if the index is out of bounds, it will print a warning message to console/log and returns a null value)
- A sample code to print the third package is as follows:

```
$query.get("package").get(2)
```

Getting the Unique Element from a Collection

```
$query.get(query).unique()
```

This method is equivalent to the one in section **Getting the First Element from a Collection**.

- Returns: Element (a unique element from a query result collection or a null value if there is no matching element).
- A sample code to print a single package is as follows:

```
$query.get("package").unique()
```

Retrieving an Array of Elements by Name

```
$query.getElementsByName(name)
```

Retrieve an element from a selected package scope whose element name exactly equals a given parameter. This method is equivalent to query pattern *[name=var].

- **Parameters**: *name* : String (the element name string).
- **Returns**: *java.util.List<Element>* (a List or a collection of MagicDraw Elements or an empty List if there is no matching element).
- **A sample code** to print the first element whose name exactly equals to *foo* is as follows:

```
$query.getElementsByName("foo").unique()
```

Retrieving Elements by ID

```
$query.getElementById(id)
```

Retrieve an element from a selected package scope whose element ID exactly equals a given parameter. This method is equivalent to query pattern #id.

- **Parameters**: id : String (an element's ID).
- **Returns**: Element (a MagicDraw Element or a null value if there is no matching element).
- **A sample code** to print an element that contains ID 17_0_3_8e9027a_1325220298609_477646 is as follows:

```
$query.getElementById("17_0_3_8e9027a_1325220298609_477646")
```