

castValue() Function

Syntax	<div>aSimpleChildClassObject = castValue(aSimpleParentClassObject)</div>																		
Semantics	<div>Assigns a simple valued object of base class type to an object of its sub-class type. Supported simple value types are: String, Integer, Float, Boolean, and DateTime.</div> <div>If the generalization between the base- and sub-class type is of stereotype <<E2EValueGeneralization>>, all constraints given as tagged values of this stereotype are validated while doing the assignment. Allowed constraints are:</div> <table><tr><th>Constraint</th><th>Description</th></tr><tr><td>Pattern</td><td>String values may be constrained by a regular expression.</td></tr><tr><td>Max Length</td><td>Max length of String values.</td></tr><tr><td>Min Length</td><td>Min length of String values.</td></tr><tr><td>Length</td><td>Exact length of String values.</td></tr><tr><td>Enumeration</td><td>A set of allowed values for Strings or Integers.</td></tr><tr><td>Max Value</td><td>Max value of Integer or Float.</td></tr><tr><td>Min Value</td><td>Min value of Integer or Float.</td></tr><tr><td>Fraction Digits</td><td>Number of digits after the decimal separator of Float.</td></tr></table> <div>All constraints can be combined. An error is thrown if a constraint is violated. If the classes are imported from WSDL or XML schema files, all supported schema constraints are mapped to tagged values of the <<E2EValueGeneralization>>.</div>	Constraint	Description	Pattern	String values may be constrained by a regular expression.	Max Length	Max length of String values.	Min Length	Min length of String values.	Length	Exact length of String values.	Enumeration	A set of allowed values for Strings or Integers .	Max Value	Max value of Integer or Float .	Min Value	Min value of Integer or Float .	Fraction Digits	Number of digits after the decimal separator of Float .
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Error Codes	Error domain FUMSM/FUMSMCV. Find the related error codes on page System Errors .																		

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Related Pages:

- [cast\(\) Operation](#)
- [System Errors](#)

Example

Example File (Builder project Basic Modeling/Data):

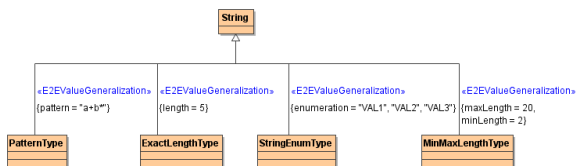


<your example path>\Basic Modeling\Data\uml\castValue.xml

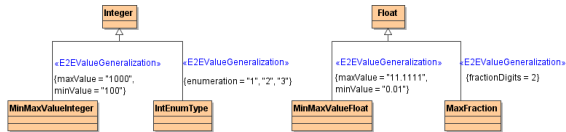
The typical usage scenario of this function is mapping from generic values like **Strings**, **Integers**, and **Floats** to more specific types. For example, the following **InputValues** class has to be mapped to the **OutputValues** class:

InputValues	OutputValues
+testMinMaxValueInteger : Integer	+testMinMaxLength : MinMaxLengthType
+testMinMaxLength : String	+testMaxFraction : MaxFraction
+testPattern : String	+testStringEnumeration : StringEnumType
+testExactLength : String	+testExactLength : ExactLengthType
+testStringEnumeration : String	+testMinMaxValueInteger : MinMaxValueInteger
+testMinMaxValueFloat : Float	+testPattern : PatternType
+testMaxFraction : Float	+testMinMaxValueFloat : MinMaxValueFloat
+testIntegerEnumeration : Integer	+testIntegerEnumeration : IntEnumType

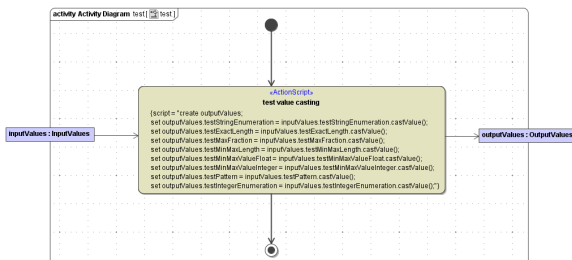
Frequently, classes such as **OutputValues** is imported from XML Schema files and their simple types are not plain **Strings** or **Integers** but more specific types. For example, the **String** related types in the `castValue()` example look like



and the numeric types are defined as



If you want to assign for example a **String** to a more specific type such as **StringEnumType**, then you have to downcast the values as shown in the example action below. But in contrast to the standard `cast()` function, `castValue()` will check the enumeration constraint, i.e. whether the **String** takes only the allowed values `VAL1`, `VAL2`, or `VAL3`. This happens at runtime. If the constraint is violated, an exception is thrown at the very place the mis-assignment takes place. Thus, it is recommended to use `castValue()` wherever possible. The error codes are listed below.



Hierarchies of Constraints

It is possible that classes inherit from already constraint types. The following diagram shows the class **MinMaxLengthType** that specializes the class **PatternType**. This means that **MinMaxLengthType** inherits all constraints of **PatternType** whereas the constraints of the child class override the parent constraints. For example, **MinMaxLengthType** has the constraint **maxLength = 10** which overrides the constraint **maxLength = 20** of **PatternType**.

The same applies to enumerations. This means effectively that the enumeration values are *merged*. For example, the allowed values of **AdditionalEnumeration** objects are **SUBVAL1**, **SUBVAL2**, **VAL1**, **VAL2**, **VAL3**.

