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**Module : JSON.Utils**

**Utils public module**

A standard module defining utility functionalities.

**Public functions**

**GetValueAs()**

Convert a generic JSON to the request type.

**Public functions details**

# JSON.Utils.GetValueAs

|  |
| --- |
| GetValueAs(ByRef Value As Object, ByVal Datatype as JSON.JType) As Object |

**Convert a generic JSON to the requested JSON type.  
Throw a Type Mismatch error (13) if the Value parameter isn’t of the requested type.**

**Parameters**

Value

The JSON object to convert.

DataType

The requested data type.

**Return Value**

A JSON object corresponding to the requested type, either JArray, JBoolean, JNull, JNumber, JObject or JString.

**Example**

|  |  |
| --- | --- |
| 1 2 3 4 5 6  7  8  9  10  11  12  13  14 | ‘// Utils.GetValueAs  Public Sub Main()  ‘// Instanciate an empty array  Dim JArray As JSON.JArray  Set JArray = Factory.CreateArray  ‘// Insert an element  JArray.PushBack Factory.CreateNull  ‘// Retrieve the element  Dim JNull As JSON.JNull  Set JNull = GetValueAs(JArray(0))  End Sub |

**Class : JSON.Factory**

**Factory class**

Factory is an object performing the instanciation of the various objects composing the JSON-VBA library.  
It does not need to be instanciated as global instance already exist.

**Public Member functions**

**CreateArray**

Return a new JArray object.

**CreateBoolean**

Return a new JBoolean object.

**CreateDocument**

Return a new JDocument object.

**CreateFileReader**

Return a new FileReader object

**CreateFileWriter**

Return a new FileWriter object.

**CreateNull**

Return a new JNull object.

**CreateNumber**

Return a new JNumber object.

**CreateObject**

Return a new JObject object

**CreatePair**

Return a new Pair object

**CreateString**

Return a new JString object

**Public Member functions details**

# JSON.Factory.CreateArray

CreateArray() As JSON.JArray

**Return a new JArray object.**

**Parameters**

None.

**Return Value**

An empty JArray object.

**Example**

|  |  |
| --- | --- |
| 1 2 3 4 5 6 | ‘// Factory.CreateArray  Public Sub Main()  Dim JArray As JSON.JArray  Set JArray = Factory.CreateArray  End Sub |

# JSON.Factory.CreateBoolean

CreateBoolean(ByVal Value As Boolean) As JSON.JBoolean

**Return a new JBoolean object.**

**Parameters**

Value

A boolean value defining the object’s initial value.

**Return Value**

A JBoolean value who’s value match the input parameter.

**Example**

|  |  |
| --- | --- |
| 1 2 3 4 5 6 | ‘// Factory.CreateBoolean  Public Sub Main()  Dim JBoolean As JSON.JBoolean  Set JBoolean = Factory.CreateBoolean(True)  End Sub |

# JSON.Factory.CreateDocument

CreateDocument() As JSON.JDocument

**Return a new JDocument object.**

**Parameters**

None.

**Return Value**

An empty JDocument object

**Example**

|  |  |
| --- | --- |
| 1 2 3 4 5 6 | ‘// Factory.CreateDocument  Public Sub Main()  Dim JDocument As JSON.JDocument  Set JDocument = Factory.Createdocument  End Sub |

# JSON.Factory.CreateFileReader

CreateFileReader(ByVal Path As String) As JSON.FileReader

**Return a new FileReader object.**

**Parameters**

Path

Local or UNC Path to an existing file.

**Return Value**

A FileReader object implementing the IReader interface.

**Example**

|  |  |
| --- | --- |
| 1 2 3 4 5 6 | ‘// Factory.CreateFileReader  Public Sub Main()  Dim FileReader As JSON.FileReader  Set FileReader = Factory.CreateFileReader(“c:\Temp\myFile.txt”)  End Sub |

# JSON.Factory.CreateFileWriter

CreateFileWriter(ByVal Path As String) As JSON.FileWriter

**Return a new FileWriter object.**

**Parameters**

Path

Local or UNC Path to an existing file.

**Return Value**

A FileWriter object implementing the IWriter interface.

**Example**

|  |  |
| --- | --- |
| 1 2 3 4 5 6 | ‘// Factory.CreateFileWriter  Public Sub Main()  Dim FileWriter As JSON.FileWriter  Set FileWriter = Factory.CreateFileWriter(“c:\Temp\myFile.txt”)  End Sub |

# JSON.Factory.CreateNull

CreateNull() As JSON.JNull

**Return a new JNull object.**

**Parameters**

None.

**Return Value**

A JNull object.

**Example**

|  |  |
| --- | --- |
| 1 2 3 4 5 6 | ‘// Factory.CreateNull  Public Sub Main()  Dim JNull As JSON.JNull  Set JNull = Factory.CreateNull  End Sub |

# JSON.Factory.CreateNumber

CreateNumber(ByVal Value As Double) As JSON.JNumber

**Return a new JNumber object.**

**Parameters**

Value

Any numeric value.

**Return Value**

A JNumber object.

**Example**

|  |  |
| --- | --- |
| 1 2 3 4 5 6 | ‘// Factory.CreateNumber  Public Sub Main()  Dim JNumber As JSON.JNumber  Set JNumber = Factory.CreateNumber(38.456)  End Sub |

# JSON.Factory.CreateObject

CreateObject() As JSON.JObject

**Return a new JObject object.**

**Parameters**

None.

**Return Value**

An empty JObject object.

**Example**

|  |  |
| --- | --- |
| 1 2 3 4 5 6 | ‘// Factory.CreateObject  Public Sub Main()  Dim JObject As JSON.JObject  Set JObject = Factory.CreateObject  End Sub |

# JSON.Factory.CreatePair

CreatePair(ByVal Name as String, ByVal Value As Object) As JSON.Pair

**Return a new Pair object.  
Throw a Type Mismatch error (13) if the Value parameter isn’t one of the expected type.**

**Parameters**

Name

String, the object’s name.

Value

Any object among JArray, JBoolean, JNull, JNumber, JObject or JString.

**Return Value**

A Pair object whos name and value match the input parameters.

**Example**

|  |  |
| --- | --- |
| 1 2 3 4 5 6 | ‘// Factory.CreatePair  Public Sub Main()  Dim Pair As JSON.Pair  Set Pair = Factory.CreatePair(“Object name”, Factory.CreateNull)  End Sub |

# JSON.Factory.CreateString

CreateString(ByVal Value As String)

**Return a new JString object.**

**Parameters**

Value

String, the object’s name.  
This parameter does not need to be escaped.

**Return Value**

A JString object.

**Example**

|  |  |
| --- | --- |
| 1 2 3 4 5 6 | ‘// Factory.CreatePair  Public Sub Main()  Dim JString As JSON.JString  Set JString = Factory.CreateString(“a string value”)  End Sub |

**Interface : JSON.IReader**

**IReader Interface**

IReader is an interface defining a single operation whos goal is to read data from a data source (file, database, web service ect …), and return them as a string.  
The interface isn’t instanciable by itself, classes must implement it and conform to the operation it define.

**Public Member functions**

**Execute**

Abstract member, execute the data reading operation.

**Parameters**

None

**Return Value**

A string representing the data readen from the data source.

**Interface : JSON.IWriter**

**IWriter Interface**

IWriter is an interface defining a single operation who’s goal is to write data to a data source (file, database, web service ect …).  
The interface isn’t instanciable by itself, classes must implement it and conform to the operation it define.

**Public Member functions**

**Execute**

Abstract member, execute the data writing operation.

**Parameters**

Data

String, the data to write.

**Return Value**

None

**Class : JSON.FileReader**

**FileReader class**

FileReader is a class implementing the IReader interface, and performing data reading from a file.

**Public Member functions, inherited from IReader**

**Execute**

Read data from a file.

**Public Member functions details**

# JSON.IReader.Execute

Execute() As String

**Read data from a file and return them as string.**

**Parameters**

None.

**Return Value**

A string representing the readen data.

**Example**

|  |  |
| --- | --- |
| 1 2 3 4 5 6  7  8  9 | ‘// IReader.Execute  Public Sub Main()  Dim Reader As JSON.IReader  Set Reader = Factory.CreateFileReader(« c:\temp\myFile.txt »)  Dim Data As String  Data = Reader.Execute  End Sub |

**Class : JSON.FileWriter**

**FileWriter class**

FileWriter is a class implementing the IWriter interface and performing .

**Public Member functions, inherited from IReader**

**Execute()**

Read data from a file.

**Public Member functions details**

# JSON.IWriter.Execute

Execute(ByVal Data As String)

**Write data given as parameter to a string.**

**Parameters**

A string representing the data to write.

**Return Value**

None.

**Example**

|  |  |
| --- | --- |
| 1 2 3 4 5 6  7  8  9 | ‘// IWriter.Execute  Public Sub Main()  Dim Writer As JSON.IWriter  Set Writer = Factory.CreateFileWriter(“c:\temp\myFile.txt”)  Const Data As String = “Some data”  Writer.Execute Data  End Sub |

**Class : JSON.** **Jarray**

**Jarray class**

JArray is a class representing a JSON array, elements are indexed starting from zero, in other words, the first element is index zero, the second one is index one, the third is index two and so on..

**Public Member functions**

**DataType**

Return the class’s data type.

**GetItemAs**

Return an array element converted to the requested data type, given its index.

**Item**

Return an array element, given its index.

**PushBack**

Insert an element at the back of the array.

**Remove**

Remove an element.

**SetItem**

Set an element’s value.

**Size**

Return the number of elements in the array.

**ToJSONString**

Retrun a JSON formated string representing the array and its content.

**ToString**

Retrun a human readable string representing the array and its content.

**Value**

Return the array’s value.

**Public Member functions details**

# JSON.JArray.DataType

DataType() As JSON.JType

**Return the array’s data type.**

**Parameters**

None.

**Return Value**

Integer, always JSON.JType.JSArray.

**Example**

|  |  |
| --- | --- |
| 1 2 3 4 5 6  7  8 | ‘// JArray.DataType  Public Sub Main()  Dim JArray As JSON.JArray  Set JArray = Factory.CreateArray  Debug.Print JArray.DataType  End Sub |

# JSON.JArray.GetItemAs

GetItemAs(ByVal Index As Long, ByVal DataType As JSON.JType) As Object

**Return an element converted to the requested data type, given its index.**

**Parameters**

Index

Long, the index of the requested element.  
Throw if the requested index is out of range.

DataType

JSON.JType, type of the requested element.  
Throw if the requested element isn’t convertible to the requested type.

**Return Value**

A JSON object corresponding to the requested type, either JArray, JBoolean, JNull, JNumber, JObject or JString.

**Example**

|  |  |
| --- | --- |
| 1 2 3 4 5 6  7  8  9  10  11 | ‘// JArray.DataType  Public Sub Main()  Dim JArray As JSON.JArray  Set JArray = Factory.CreateArray  JArray.PushBack Factory.CreateNull  Dim JNull As JSON.JNull  Set JNull = JArray.GetItemAs(0, JSON.JType.JSNull)  End Sub |

# JSON.JArray.Item

Item(ByVal Index As Long) As Object

**Return an element, given its index.  
Default member, the Item collection is also iterable.**

**Parameters**

Index

Long, the index of the requested element.  
Throw an out of range error if the given index exceed the array’s capacity.

**Return Value**

A JSON object, either JArray, JBoolean, JNull, JNumber, JObject or JString.

**Example**

|  |  |
| --- | --- |
| 1 2 3 4 5 6  7  8  9  10  11  12  13  14  15  16  17  18  19 | ‘// JArray.Item  Public Sub Main()  Dim JArray As JSON.JArray  Set JArray = Factory.CreateArray  JArray.PushBack Factory.CreateNull  JArray.PushBack Factory.CreateNumber(23.649)  JArray.PushBack Factory.CreateBoolean(False)  ‘// Retrieve the first element  Dim Element As Object  Set Element = JArray(0)  ‘// Iterate over all elements  For Each Element in JArray  Debug.Print Element.Value  Next  End Sub |

# JSON.JArray.PushBack

PushBack(ByVal Value As Object)

**Insert an element as the back of the array.**

**Parameters**

Value

Any valid JSON object, either JArray, JBoolean, JNull, JNumber, JObject or JString.

**Return Value**

None.

**Example**

|  |  |
| --- | --- |
| 1 2 3 4 5 6  7  8 | ‘// JArray.DataType  Public Sub Main()  Dim JArray As JSON.JArray  Set JArray = Factory.CreateArray  JArray.PushBack Factory.CreateNull End Sub |

# JSON.JArray.Remove

Remove(ByVal Index As Long)

**Remove an element from the array.**

**Parameters**

Index

Long, the index of the element to remove.  
Throw an out of range error if the given index exceed the array’s capacity.

**Return Value**

None.

**Example**

|  |  |
| --- | --- |
| 1 2 3 4 5 6  7  8 | ‘// JArray.Remove  Public Sub Main()  Dim JArray As JSON.JArray  Set JArray = Factory.CreateArray  JArray.PushBack Factory.CreateNull  JArray.PushBack Factory.CreateNumber(23.649)  JArray.PushBack Factory.CreateBoolean(False)  ‘// Remove the 3rd element  JArray.Remove(2)  End Sub |

# JSON.JArray.SetItem

SetItem(ByVal Index As Long, ByRef Value As Object)

**Set an element’s value.**

**Parameters**

Index

Long, the index of the element to set.  
Throw an out of range error if the given index exceed the array’s capacity.

Value

A JSON Object among JArray, JBoolean, JNull, JNumber, JObject or JString.  
Throw a type mismatch error of the object’s type is incorrect.

**Return Value**

None.

**Example**

|  |  |
| --- | --- |
| 1 2 3 4 5 6  7  8 | ‘// JArray.SetItem  Public Sub Main()  Dim JArray As JSON.JArray  Set JArray = Factory.CreateArray  JArray.PushBack Factory.CreateNull  JArray.PushBack Factory.CreateNumber(23.649)  JArray.PushBack Factory.CreateBoolean(False)  ‘// update the 3rd item  JArray.SetItem 2, Factory.CreateString(“a string value”)  End Sub |

# JSON.JArray.Size

Size()

**Return the number of elements in the array.**

**Parameters**

None.

**Return Value**

Long, the number of elements in the array.

**Example**

|  |  |
| --- | --- |
| 1 2 3 4 5 6  7  8 | ‘// JArray.SetItem  Public Sub Main()  Dim JArray As JSON.JArray  Set JArray = Factory.CreateArray  JArray.PushBack Factory.CreateNull  JArray.PushBack Factory.CreateNumber(23.649)  JArray.PushBack Factory.CreateBoolean(False)  ‘// Display 3  Debug.Print JArray.Size  End Sub |

# JSON.JArray.ToJSONString

ToJSONString()

**Return a JSON formated string representing the array and its content.**

**Parameters**

None.

**Return Value**

String, a JSON formated string, special and unicode characters are escaped.

**Example**

|  |  |
| --- | --- |
| 1 2 3 4 5 6  7  8 | ‘// JArray.SetItem  Public Sub Main()  Dim JArray As JSON.JArray  Set JArray = Factory.CreateArray  JArray.PushBack Factory.CreateNull  JArray.PushBack Factory.CreateNumber(23.649)  JArray.PushBack Factory.CreateBoolean(False)  ‘// Display 3  Debug.Print JArray.ToJSONString  End Sub |

# JSON.JArray.ToString

ToString()

**Return a human readable representation of the array and its content.**

**Parameters**

None.

**Return Value**

String, indented string, special and unicode characters are not escaped.

**Example**

|  |  |
| --- | --- |
| 1 2 3 4 5 6  7  8 | ‘// JArray.SetItem  Public Sub Main()  Dim JArray As JSON.JArray  Set JArray = Factory.CreateArray  JArray.PushBack Factory.CreateNull  JArray.PushBack Factory.CreateNumber(23.649)  JArray.PushBack Factory.CreateBoolean(False)  ‘// Display 3  Debug.Print JArray.ToString  End Sub |

# JSON.JArray.Value

Value()

**Return the array’s value.**

**Parameters**

None.

**Return Value**

String, always [Array].

**Example**

|  |  |
| --- | --- |
| 1 2 3 4 5 6  7  8 | ‘// JArray.SetItem  Public Sub Main()  Dim JArray As JSON.JArray  Set JArray = Factory.CreateArray  JArray.PushBack Factory.CreateNull  JArray.PushBack Factory.CreateNumber(23.649)  JArray.PushBack Factory.CreateBoolean(False)  ‘// Display 3  Debug.Print JArray.ToString  End Sub |