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| |  |  |  | | --- | --- | --- | | 75 | Date: | $date.get(‘MMMM YYYY’) | |
| Archetype Modeling Language (AML)  #set ($version = “0.5”)  Version: $version  **OMG Document Number: formal/$date.get(‘YYYY-M-d’)**  **Standard document URL: http://www.omg.org/spec/AML/1.0**  Original File: N/A |

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**Acknowledgements**

The following individuals submitted parts of this specification and/or have assisted the AML team in the development of the specification:

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**Preface**

**OMG**

Founded in 1989, the Object Management Group, Inc. (OMG) is an open membership, not-for-profit computer industry standards consortium that produces and maintains computer industry specifications for interoperable, portable, and reusable enterprise applications in distributed, heterogeneous environments. Membership includes Information Technology vendors, end users, government agencies, and academia.  
  
OMG member companies write, adopt, and maintain its specifications following a mature, open process. OMG™s specifications implement the Model Driven Architecture (MDA®), maximizing ROI through a full-lifecycle approach to enterprise integration that covers multiple operating systems, programming languages, middleware and networking infrastructures, and software development environments. OMG™s specifications include: UML® (Unified Modeling Language); CORBA® (Common Object Request Broker Architecture); CWM (Common Warehouse Metamodel); and industry-specific standards for dozens of vertical markets.  
  
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As noted, OMG specifications address middleware, modeling and vertical domain frameworks. A Specifications Catalog is available from the OMG website at:

*http://www.omg.org/technology/documents/spec\_catalog.htm*

Specifications within the Catalog are organized by the following categories:

**OMG Modeling Specifications**

• UML  
• MOF  
• XMI  
• CWM  
• Profile specifications

**OMG Middleware Specifications**

• CORBA/IIOP  
• IDL/Language Mappings  
• Specialized CORBA specifications  
• CORBA Component Model (CCM)

**Platform Specific Model and Interface Specifications**

• CORBAservices  
• CORBAfacilities  
• OMG Domain specifications  
• OMG Embedded Intelligence specifications  
• OMG Security specifications

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**Typographical Conventions**

The type styles shown below are used in this document to distinguish programming statements from ordinary English. However, these conventions are not used in tables or section headings where no distinction is necessary.

Times/Times New Roman - 10 pt.: Standard body text

**Helvetica/Arial - 10 pt. Bold: OMG Interface Definition Language (OMG IDL) and syntax elements.**

Courier - 10 pt. Bold: Programming language elements.

Helvetica/Arial - 10 pt : Exceptions

NOTE: Terms that appear in italics are defined in the glossary. Italic text also represents the name of a document, specification, or other publication.

#import('js', 'com.nomagic.reportwizard.tools.script.JavaScriptTool')

#import("query", "com.nomagic.reportwizard.tools.QueryTool")

#import('text', 'com.nomagic.reportwizard.tools.TextTool')

#foreach ($pkg in $packageScope)

#packageList($pkg, 1)

#end

#macro (writeHTMLText $txt)

$text.html($txt) #end

#macro (writeText $txt)

$txt #end

#macro (writeBookmark1 $obj1 $dp1)

# $bookmark.create($obj1.ID, $dp1)

#end

#macro (writeHeader1 $dp2)

# $dp2

#end

#macro (writeBookmark2 $obj2 $dp3)

## $bookmark.create($obj2.ID, $dp3)

#end

#macro (writeHeader2 $dp4)

## $dp4

#end

#macro (writeBookmark3 $obj3 $dp5)

### $bookmark.create($obj3.ID, $dp5)

#end

#macro (writeHeader3 $dp6)

### $dp6

#end

#macro (writeBookmark4 $obj4 $dp7)

#### $bookmark.create($obj4.ID, $dp7)

#end

#macro (writeHeader4 $dp8)

#### $dp8

#end

#macro (writeBookmark $obj5 $dp9)

**$bookmark.create($obj5.ID, $dp9)**

#end

#macro (writeHeader $dp10)

**$dp10**

#end

##MACRO writeHeading

#macro (writeHeading $object $disp $isBookmark $headingLevel $headType) #if($headingLevel == 1) #if($isBookmark == “true”) #writeBookmark1($object $disp) #else #writeHeader1($disp) #end #elseif($headingLevel == 2) #if($isBookmark == “true”) #writeBookmark2($object $disp) #else #writeHeader2($disp) #end #elseif($headingLevel == 3) #if($isBookmark == “true”) #writeBookmark3($object $disp) #else #writeHeader3($disp) #end #elseif ($headingLevel == 4) #if($isBookmark == “true”) #writeBookmark4($object $disp) #else #writeHeader4($disp) #end #else #if($isBookmark == “true”) #writeBookmark($object $disp) #else #writeHeader($disp) #end #end #end

#set($printedInterfaces = $array.createArray())

#set($printedClasses = $array.createArray())

#set($printedEnums = $array.createArray())

#set($printedDataTypes = $array.createArray())

#set($printedStereoTypes = $array.createArray())

#macro(findNestedElement $object)

#set($innerElement = $report.getInnerElement($object))

#foreach($nested in $innerElement)

#if($nested.elementType != “package” && $nested.elementType != “model” && $nested.elementType != “profile” )

#if($nested.elementType == “interface”)

#set($tmp = $nestedInterface.add($nested))

#elseif($nested.elementType == “class”)

#set($tmp = $nestedClass.add($nested))

#elseif($nested.elementType == “enumeration”)

#set($tmp = $nestedEnum.add($nested))

#elseif($nested.elementType == “datatype”)

#set($tmp = $nestedDataTypes.add($nested))

#elseif($nested.elementType == “stereotype”)

#set($tmp = $nestedStereoTypes.add($nested))

#end

#set($in = $report.getInnerElement($nested))

#if($in.size() > 0)

#findNestedElement($nested)

#end

#end

#end

#end

#set($level = 0)

## MACRO packageList

#macro (packageList, $parentPackage, $plevel)

#set($packageInterface = $array.createArray())

#set($packageClass = $array.createArray())

#set($packageEnum = $array.createArray())

#set($packageDataTypes = $array.createArray())

#set($packageStereoTypes = $array.createArray())

#set($nestedInterface = $array.createArray())

#set($nestedClass = $array.createArray())

#set($nestedEnum = $array.createArray())

#set($nestedDataTypes = $array.createArray())

#set($nestedStereoTypes = $array.createArray())

#if(($parentPackage.elementType ==“package”)||($parentPackage.elementType == “profile”))

#foreach($element in $parentPackage.ownedElement)

#if($element.elementType == “interface”)

#set($tmp = $packageInterface.add($element))

#set($inner = $report.getInnerElement($element))

#if($inner.size() > 0)

#findNestedElement($element)

#end

#elseif($element.elementType == “class”)

#set($tmp = $packageClass.add($element))

#set($inner = $report.getInnerElement($element))

#if($inner.size() > 0)

#findNestedElement($element)

#end

#elseif($element.elementType == “enumeration”)

#set($tmp = $packageEnum.add($element))

#set($inner = $report.getInnerElement($element))

#if($inner.size() > 0)

#findNestedElement($element)

#end

#elseif($element.elementType == “datatype”)

#set($tmp = $packageDataTypes.add($element))

#set($inner = $report.getInnerElement($element))

#if($inner.size() > 0)

#findNestedElement($element)

#end

#elseif($element.elementType == “stereotype”)

#set($tmp = $packageStereoTypes.add($element))

#set($inner = $report.getInnerElement($element))

#if($inner.size() > 0)

#findNestedElement($element)

#end

#end

#end

#end

#set($tmp = $array.addCollection($packageInterface, $nestedInterface))

#set($tmp = $array.addCollection($packageClass, $nestedClass))

#set($tmp = $array.addCollection($packageEnum, $nestedEnum))

#set($tmp = $array.addCollection($packageDataTypes, $nestedDataTypes))

#set($tmp = $array.addCollection($packageStereoTypes, $nestedStereoTypes))

#set($diagramList = $array.createArray())

#foreach($d in $sorter.humanSort($parentPackage.ownedDiagram))

#if(($d.diagramType == “Class Diagram”)|| ($d.diagramType == “Profile Diagram”) || ($d.diagramType == “Package Diagram”))

#set($tmp = $diagramList.add($d))

#end

#end

#if($parentPackage != $project.model)

#set($displayTitle = $js.eval(‘pkgname.replace(/[0-9\.]/gi, “”)’, ‘pkgname’, $parentPackage.name))

#if($js.eval(‘(pkgn.charAt(0) > “7”)&&(pkgn.indexOf(“.”) != -1)’, ‘pkgn’, $parentPackage.name)) #writeHeading($displayTitle, $displayTitle, “false”, $plevel, “Package”) #else #writeHeading($displayTitle, $displayTitle, “false”, $plevel) #end #if($parentPackage.documentation != “”)

#writeText($parentPackage.documentation)

#end #printDiagrams($diagramList) #end

#set ($subPackages = $parentPackage.nestedPackage)

#foreach ($pkg in $sorter.humanSort($subPackages))

#if ($plevel == 1)

#packageList($pkg, 2)

#elseif($plevel == 2)

#packageList($pkg, 3)

#elseif($plevel == 3)

#packageList($pkg, 4)

#else

#packageList($pkg, 5)

#end

#end

#end

###############################################

#\* MACRO printDiagrams

Prints diagrams for a given element

\*#

###############################################

#macro (printDiagrams $pkgdiagrams)

#if($pkgdiagrams)

#if($pkgdiagrams.size() > 0)

#foreach($diag in $sorter.humanSort($pkgdiagrams))

$image.setWidth($diag.image, -2)

**$diag.name**

#if($diag.documentation != “”)

#writeText($diag.documentation)

#end

#set($diagramElements = $array.createArray())

#set($diagramElements = $report.getDiagramElements($diag))

## Collecting Diagram elements

#set($interfaceLists = $array.createArray())

#set($classLists = $array.createArray())

#set($enumLists = $array.createArray())

#set($dataTypesLists = $array.createArray())

#set($stereoTypesLists = $array.createArray())

#foreach($element in $diagramElements)

#if($element.elementType == “interface”)

#set($tmp = $interfaceLists.add($element))

#set($tmp = $packageInterface.remove($element))

#elseif($element.elementType == “class”)

#set($tmp = $classLists.add($element))

#set($tmp = $packageClass.remove($element))

#elseif($element.elementType == “datatype”)

#set($tmp = $dataTypesLists.add($element))

#set($tmp = $packageDataTypes.remove($element))

#elseif($element.elementType == “stereotype”)

#set($tmp = $stereoTypesLists.add($element))

#set($tmp = $packageStereoTypes.remove($element))

#elseif($element.elementType == “enumeration”)

#set($tmp = $enumLists.add($element))

#set($tmp = $packageEnum.remove($element))

#end

#end

## Print Diagram elements

## remove next three lines when done.

[Interfaces = $interfaceLists.size(), Classes = $classLists.size(), Enumerations = $enumLists.size(), DataTypes=$dataTypesLists.size(), StereoTypes=$stereoTypesLists.size()]

## print interfaceLists, classLists, enumLists, dataTypeLists, stereoTypeLists

#if($dataTypesLists.size() > 0)

#set($knownDataTypes = $array.createArray())

#foreach($dtp in $sorter.humanSort($dataTypesLists))

#if(!$printedDataTypes.contains($dtp))

#set($tmp = $printedDataTypes.add($dtp))

##METHOD #createDataTypeContent($dtp)

#else

#set($tmp = $knownDataTypes.add($dtp))

#end

#end

#if($knownDataTypes.size() > 0)

#writeHeading($knownDataTypes, “Known other Data Types”)

#set($size = $knownDataTypes.size())

#foreach($e in $knownDataTypes)$bookmark.open($e.ID, $e.name)#if($size != $velocityCount), #end#end

#end

#end##endDataTypes

#if($interfaceLists.size() > 0)

#set($knownInterface = $array.createArray())

#foreach($interface in $sorter.humanSort($interfaceLists))

#if(!$printedInterfaces.contains($interface))

#set($tmp = $printedInterfaces.add($interface))

##METHOD #createInterfaceContent($interface)

#else

#set($tmp = $knownInterface.add($interface))

#end

#end

#if($knownInterface.size() > 0)

#writeHeading($knownInterface, “Known other interfaces”)

#set($size = $knownInterface.size())

#foreach($i in $knownInterface)$bookmark.open($i.ID, $i.name)#if($size != $velocityCount), #end#end

#end

#end##endinterface

#if($classLists.size() > 0)

#set($knownClass = $array.createArray())

#foreach($class in $sorter.humanSort($classLists))

#if(!$printedClasses.contains($class))

#set($tmp = $printedClasses.add($class))

##METHOD #createClassContent($class)

#else

#set($tmp = $knownClass.add($class))

#end

#end

#if($knownClass.size() > 0)

#writeHeading($knownClass, “Known other classes”)

#set($size = $knownClass.size())

#foreach($c in $knownClass)$bookmark.open($c.ID, $c.name)#if($size != $velocityCount), #end#end

#end

#end##endclass

#if($enumLists.size() > 0)

#set($knownEnum = $array.createArray())

#foreach($enum in $sorter.humanSort($enumLists))

#if(!$printedEnums.contains($enum))

#set($tmp = $printedEnums.add($enum))

##METHOD #createEnumerationContent($enum)

#else

#set($tmp = $knownEnum.add($enum))

#end

#end

#if($knownEnum.size() > 0)

#writeHeading($knownEnum, “Known other enumerations”)

#set($size = $knownEnum.size())

#foreach($e in $knownEnum)$bookmark.open($e.ID, $e.name)#if($size != $velocityCount), #end#end

#end

#end##endenumeration

#if($stereoTypesLists.size() > 0)

#set($knownStereoTypes = $array.createArray())

#foreach($stp in $sorter.humanSort($stereoTypesLists))

#if(!$printedStereoTypes.contains($stp))

#set($tmp = $printedStereoTypes.add($stp))

##METHOD #createStereoTypeContent($stp)

#else

#set($tmp = $knownStereoTypes.add($stp))

#end

#end

#if($knownStereoTypes.size() > 0)

#writeHeading($knownStereoTypes, “Known other Stereotypes”)

#set($size = $knownStereoTypes.size())

#foreach($e in $knownStereoTypes)$bookmark.open($e.ID, $e.name)#if($size != $velocityCount), #end#end

#end

#end##endStereoTypes

#end

## Print packageDataTypes, packageInterface, packageClass, packageEnum, packageStereotypes

#if($packageDataTypes.size() > 0)

#set($knownDataType = $array.createArray())

#foreach($dtp in $sorter.humanSort($packageDataTypes))

#if(!$printedDataTypes.contains($dtp))

#set($tmp = $printedDataTypes.add($dtp))

##METHOD #createDataTypeContent($dtp)

#else

#set($tmp = $knownDataType.add($dtp))

#end

#end

#if($knownDataType.size() > 0)

#writeHeading($knownDataType, “Known other Data Types”)

#set($size = $knownDataType.size())

#foreach($i in $knownDataType)$bookmark.open($i.ID, $i.name)#if($size != $velocityCount), #end#end

#end

#end##endpackageDataTypes

#if($packageInterface.size() > 0)

#set($knownInterface = $array.createArray())

#foreach($interface in $sorter.humanSort($packageInterface))

#if(!$printedInterfaces.contains($interface))

#set($tmp = $printedInterfaces.add($interface))

##METHOD #createInterfaceContent($interface)

#else

#set($tmp = $knownInterface.add($interface))

#end

#end

#if($knownInterface.size() > 0)

#writeHeading($knownInterface, “Known other interfaces”)

#set($size = $knownInterface.size())

#foreach($i in $knownInterface)$bookmark.open($i.ID, $i.name)#if($size != $velocityCount), #end#end

#end

#end##endpackageInterface

#if($packageClass.size() > 0)

#set($knownClass = $array.createArray())

#foreach($class in $sorter.humanSort($packageClass))

#if(!$printedClasses.contains($class))

#set($tmp = $printedClasses.add($class))

##METHOD #createClassContent($class)

#else

#set($tmp = $knownClass.add($class))

#end

#end

#if($knownClass.size() > 0)

#writeHeading($knownClass, “Known other classes”)

#set($size = $knownClass.size())

#foreach($c in $knownClass)$bookmark.open($c.ID, $c.name)#if($size != $velocityCount), #end#end

#end

#end##endpackageClass

#if($packageEnum.size() > 0)

#set($knownEnum = $array.createArray())

#foreach($enum in $sorter.humanSort($packageEnum))

#if(!$printedEnums.contains($enum))

#set($tmp = $printedEnums.add($enum))

##METHOD #createEnumerationContent($enum)

#else

#set($tmp = $knownEnum.add($enum))

#end

#end

#if($knownEnum.size() > 0)

#writeHeading($knownEnum, “Known other enumerations”)

#set($size = $knownEnum.size())

#foreach($e in $knownEnum)$bookmark.open($e.ID, $e.name)#if($size != $velocityCount), #end#end

#end

#end##endpackageEnum

#if($packageStereoTypes.size() > 0)

#set($knownStereoType = $array.createArray())

#foreach($stp in $sorter.humanSort($packageStereoTypes))

#if(!$printedStereoTypes.contains($stp))

#set($tmp = $printedStereoTypes.add($stp))

##METHOD #createStereoTypeContent($stp)

#else

#set($tmp = $knownStereoType.add($stp))

#end

#end

#if($knownStereoType.size() > 0)

#writeHeading($knownStereoType, “Known other Stereotypes”)

#set($size = $knownStereoType.size())

#foreach($i in $knownStereoType)$bookmark.open($i.ID, $i.name)#if($size != $velocityCount), #end#end

#end

#end##endpackageStereoTypes

#end

#end

#end