FIRST PAGE LEFT LEFT BLANK

Blank First Page

Literate Data Model

BLANK

Preliminaries

the basic structure of the model

In Literate Data Modeling, the main components of interest are typically Classes, Attributes, Models, and Subjects. However, to streamline the model and promote reusability, we introduce a supertype called Component. By defining common attributes and behaviors in the Component class, we can inherit them in the subclasses, ensuring consistency and reducing duplication throughout the model.

We present the Component class first because it is a best practice in modeling to introduce supertypes before their subtypes. This approach allows readers to understand the general concepts and shared properties before delving into the specifics of each specialized component.

Component
An element or building block of the literate data model

PLURAL Components
UMEDPLURAL Components
PENDENTS Annotation
SUBTYPES LiterateModel , Subject , Class , Key , AttributeSection , Attribute , Constraint , Method , Parameter

Name the name of the component, not in camel case
(String value O_O)

warning This is a warning with emoji

name The name of the component
(CamelName value O_O)

Name *(QualifiedCamel value O_O)*

Name a short form of the component's name, used for cross references and improved readability.
(CamelName value O_O)

example "LDM" is the short form of "Literate Data Model".

DEFAULT name - how do you say name in english?
PYTHON x.name == y

STRAINTS the abbreviated name should be shorter than the actual name
PYTHON len(abbreviatedName) < len(name)
MESSAGE Why have an abbreviation longer than the name?
SEVERITY Warning

note Does this annotation find it's way to the Constraint? YES! It's fixed!

eLiner A brief, one-line definition or description of the component, suitable for use in a descriptive table of contents. _
(OneLiner value O_O)

ration A more detailed explanation or discussion of the component _
(RichText value O_O)

nment Indicates whether this component is an embellishment added during post-parsing processing _
(Boolean value O_O)

DEFAULT false

note This attribute is set to true for components that are automatically generated or added during the fleshing out, review, or rendering processes, such as implied attributes or suggested model elements. It helps distinguish embellishments from the core model elements defined in the original LDM source.

ent

Indicates whether this component is an embellishment added during post-parsing processing _

(Boolean value O_O)

EFAULT false

note This attribute is set to true for components that are automatically generated or added during the fleshing out, review, or rendering processes, such as implied attributes or suggested model elements. It helps distinguish embellishments from the core model elements defined in the original LDM source.

mechanical attributes

ent

Indicates whether this component is an embellishment added during post-parsing processing _

(Boolean value O_O)

EFAULT false

note This attribute is set to true for components that are automatically generated or added during the fleshing out, review, or rendering processes, such as implied attributes or suggested model elements. It helps distinguish embellishments from the core model elements defined in the original LDM source.

AnnotationType
a kind of note, or aside, used to call attention to additional information about some Component.

note Each LDM declares a set of Annotation Types, with defined labels, emojis, and clearly documented purposes. These are *recognized* or *registered* Annotation Types.

PLURAL AnnotationTypes
UMEDPLURAL AnnotationTypes
BASEDON LiteralteModel

emoji
an emoji
(Emoji value O_O)

Name
an emoji
(String value O_O)

icode
the Unicode for the emoji
(String value O_O)

label
A short label to indicate the purpose of the annotation _
(LowerCamel value O_O)

plural
the plural form of the label
(UpperCamel value O_O)

DEFAULT based on label

rpose
the intended reason for the annotation.
(OneLiner value O_O)

utes
created for AnnotationType

Model
A link back to the LiterateModel on which this AnnotationType depends.
(LiterateModel value M_1)

otationType
Inverse attribute for Annotation.annotationType from which this was implied.
(Annotation value M_1)

INVERSE Annotation.annotationType

otationTypes
Inverse attribute for LiterateModel.annotationTypes from which this was implied.
(LiterateModel value M_1)

INVERSE LiterateModel.annotationTypes

Annotation
A note or comment associated with a model element

LURAL Annotations
EDPLURAL Annotations
SEDON Component

pe (Optional AnnotationType value O_O)

note An Annotation is considered to *recognized* if the label is associated with an Annotation Type. otherwise it is *ad hoc* .

note Should be a Value Type

VERSE AnnotationType.inverseOfAnnotationType

bel A short label to indicate the purpose of the annotation _
(CamelName value O_O)

But any short label is valid.

EFAULT from annotationType

oji (Optional Emoji value O_O)

EFAULT from annotation type

ent The content or body of the annotation
(RichText value O_O)

ent Indicates whether this annotation is an embellishment added during post-parsing processing _
(Boolean value O_O)

EFAULT false

note This attribute is set to true for annotations that are automatically generated or added during the fleshing out, review, or rendering processes, such as suggestions, issues, or diagnostic messages. It helps distinguish embellishment annotations from the annotations defined in the original LDM source.

ent Indicates whether this annotation is an embellishment added during post-parsing processing _
(Boolean value O_O)

EFAULT false

note This attribute is set to true for annotations that are automatically generated or added during the fleshing out, review, or rendering processes, such as suggestions, issues, or diagnostic messages. It helps distinguish embellishment annotations from the annotations defined in the original LDM source.

utes	created for Annotation
onent	A link back to the Component on which this Annotation depends. (Component value M_1)

BLANK

The Model and its Subjects

LiterateModel
A representation of a domain's entities, attributes, and relationships, along with explanatory text and examples

LURAL LiterateModels
DENTS AnnotationType , Subject , SubjectArea
YPEOF Component

me (UpperCamel value O_O)
RRIDES Component.name

cts list of all classes in the model, as ordered in the definition of the model.
(List of Classes value O_O)
VERSE Class.inverseOfAllSubjects
VATION gathering s.allSubjects over s in subjectAreas
RAINTS Subject names must be unique across the model.

ses list of all classes in the model, as ordered in the definition of the model.
(List of Classes value O_O)
VERSE Class.inverseOfAllClasses
VATION gathering s.allClasses over s in allSubjects.
RAINTS Class names must be unique across the model.

es (List of AnnotationTypes value O_O)
VERSE AnnotationType.inverseOfAnnotationTypes

Language the recommended lanquage for expressing derivation, defaults, and constraints
(CodingLanguage value O_O)
EFAULT Python

anguages (Optional List of CodingLanguages value O_O)

teLanguage the recommended lanquage for expressing derivation, defaults, and constraints
(TemplateLanguage value O_O)
EFAULT Handlebars

eLanguages (Optional List of TemplateLanguages value O_O)

ns A list of functions that require sophisticated AI-powered implementation *
(List of String value O_O)
VATION ['aiEnglishPlural()']

Types	*(List of AnnotationTypes value O_O)*
INVERSE	AnnotationType.inverseOfAnnotationTypes
ngLanguage	the recommended lanquage for expressing derivation, defaults, and constraints *(CodingLanguage value O_O)*
DEFAULT	Python
ngLanguages	*(Optional List of CodingLanguages value O_O)*
plateLanguage	the recommended lanquage for expressing derivation, defaults, and constraints *(TemplateLanguage value O_O)*
DEFAULT	Handlebars
plateLanguages	*(Optional List of TemplateLanguages value O_O)*
ctions	A list of functions that require sophisticated AI-powered implementation * *(List of String value O_O)*
ERIVATION	['aiEnglishPlural()']

Subject
A specific topic or theme within the model

Subjects are the chapters an sections of the model.

- A subject need not contain any Classes if it's just expository.

LURAL Subjects
SEDON LiterateModel
YPEOF Component
TYPES SubjectArea

me (UpperCamel value O_O)
RRIDES Component.name

ect The parent subject, if any, under which this subject is nested _
(Optional Subject value O_O)
VERSE Subject.inverseOfParentSubject

ses The major classes related to this subject, in the order in which they should be presented _
(List of Classes value O_O)
issue define chapter, section, subsection as levels?
VERSE Class.inverseOfClasses

cts Any child subjects nested under this subject, in the order in which they should be presented _
(List of Subjects value O_O)

DSL : the Classes within a Subject are always displayed before the childSubjects.

VERSE Subject.parentSubject

s created for Subject

del A link back to the LiterateModel on which this Subject depends.
(LiterateModel value M_1)

Subject Inverse attribute for Subject.parentSubject from which this was implied.
(Subject value M_1)
VERSE Subject.parentSubject

SubjectArea

A main topic or area of focus within the model, containing related subjects and classes

WHERE parentSubject is absent
PLURAL SubjectAreas
BASEDON LiterateModel
BTYPEOF Subject

utes

created for SubjectArea

Model

A link back to the LiterateModel on which this SubjectArea depends.

(LiterateModel value M_1)

Classes

Class
A key entity or object type in the model, often corresponding to a real-world concept

PLURAL Classes
PENDENTS Subtyping , Key , AttributeSection , ClassConstraint
BTYPEOF Component
UBTYPES ReferenceType
STRAINTS Within each Class, attribute names must be unique.

lForm the normal English plural form of the name of the Class
(UpperCamel value O_O)

Might be Books for the Book class or other regular plurals.

- But also might be People for Person.

note When inputting a model, you will rarely need to specify the plural form. The input program will just look it up.
DEFAULT the regular plural, formed by adding "s" or "es".

sedOn the Class or Classes on which this class is dependent
(Set of Class value O_O)

This is solely based on **Existence Dependency** . A true dependent entity cannot logically exist without the related parent entity. For instance, an Order Item cannot exist without an Order. If removing the parent entity logically implies removing the dependent entity, then it is a dependent entity.

note that basedOn and dependentOf are being used synonymousle in this metamodel.
INVERSE Class.inverseOfBasedOn

rtypes The parent class or classes from which this class inherits attributes
(List of Classes value O_O)

INVERSE Class.inverseOfSupertypes

pings the criteria, or dimensions, by which the class can be divided into subtypes
(List of Subtypings value O_O)

example in a library model, the `Book` class could have subtypings based on genre (e.g., Fiction, Non-fiction), format (e.g., Hardcover, Paperback), or subject (e.g., Science, History).
INVERSE Subtyping.inverseOfSubtypings

pes Any subtypes or specializations of this class based on it's subtypings.
(List of Classes value O_O)

ample For instance, using the `Book` example, the subtypes could include `FictionBook` , `Non-fictionBook` , `HardcoverBook` , `PaperbackBook` , `ScienceBook` , and `HistoryBook` .

VERSE Class.inverseOfSubtypes

tes The attributes or properties of the class, in the order in which they should be presented _
(List of Attributes value O_O)

VERSE Attribute.inverseOfAttributes

ns additional attributes or properties of the class, grouped for clarity and elaboration. _
(List of AttributeSections value O_O)

VERSE AttributeSection.inverseOfAttributeSections

nts Any constraints, rules, or validations specific to this class _
(List of Constraints value O_O)

note Constraints may be expressed on either the Class or the Attribute. Always?

ds Any behaviors or operations associated with this class _
(List of Methods value O_O)

VERSE Method.inverseOfMethods

nts the Classes which are basedOn this Class
(Optional Set of Classes value O_O)

VERSE Class.basedOn

eys *(Optional Set of UniqueKeys value O_O)*

VERSE UniqueKey.basedOn

s

nts the Classes which are basedOn this Class
(Optional Set of Classes value O_O)

VERSE Class.basedOn

eys *(Optional Set of UniqueKeys value O_O)*

VERSE UniqueKey.basedOn

ects Inverse attribute for LiterateModel.allSubjects from which this was implied.
(LiterateModel value M_1)

VERSE LiterateModel.allSubjects

lasses	Inverse attribute for LiterateModel.allClasses from which this was implied. *(LiterateModel value M_1)*
INVERSE	LiterateModel.allClasses
asses	Inverse attribute for Subject.classes from which this was implied. *(Subject value M_1)*
INVERSE	Subject.classes
sedOn	Inverse attribute for Class.basedOn from which this was implied. *(Class value M_1)*
INVERSE	Class.basedOn
ertypes	Inverse attribute for Class.supertypes from which this was implied. *(Class value M_1)*
INVERSE	Class.supertypes
types	Inverse attribute for Class.subtypes from which this was implied. *(Class value M_1)*
INVERSE	Class.subtypes
asses	Inverse attribute for Subtyping.classes from which this was implied. *(Subtyping value M_1)*
INVERSE	Subtyping.classes
rseClass	Inverse attribute for Attribute.inverseClass from which this was implied. *(Attribute value M_1)*
INVERSE	Attribute.inverseClass
eClass	Inverse attribute for SimpleDataTypeSubtpeOfDataType.coreClass from which this was implied. *(SimpleDataTypeSubtpeOfDataType value M_1)*
INVERSE	SimpleDataTypeSubtpeOfDataType.coreClass

Subtyping
a way in which subtypes of a Class may be classified

LURAL Subtypings
EDPLURAL Subtypings
SEDON Class

me (LowerCamel value O_O)

ive (Boolean value O_O)

EFAULT true

ive (Boolean value O_O)

EFAULT true

ses (List of Classes value O_O)

DSL : Shown in the DSL as

- Subbtypes: byBrand - Brand1, Brand2,... (non exclusive, exhaustive)
- on the super class. And as
  - Subtype of: SuperClass byBrand
- on the subclass.

note every class can have an unnamed subtyping.

VERSE Class.inverseOfClasses

s created for Subtyping

ings Inverse attribute for Class.subtypings from which this was implied.
(Class value M_1)

VERSE Class.subtypings

ss A link back to the Class on which this Subtyping depends.
(Class value M_1)

ReferenceType
A class that is presumed to be used as a reference, rather than a value

LURAL ReferenceTypes
EDPLURAL ReferenceTypes
YPEOF Class

CodeType
A data type or enumeration used in the model

PLURAL CodeTypes
UMEDPLURAL CodeTypes
PENDENTS CodeValue

aptive the code type was implied by use in an attribute and is only used for that attribute
(Boolean value O_O)

CodeValue
A possible value for an enumerated data class

PLURAL CodeValues
UMEDPLURAL CodeValues
BASEDON CodeType

code A short code or abbreviation for the value _
(String value O_O)

iption an explanation of what the code means
(RichText value O_O)

note Often, a CodeType will be assigned to just one attribute in the model. In such cases, there's no need to declare a new Code Type and invent a name for it. Instead:

utes created for CodeValue

eType A link back to the CodeType on which this CodeValue depends.
(CodeType value M_1)

Key
a list of attributes of a class

LURAL Keys
EDPLURAL Keys
SEDON Class
YPEOF Component
TYPES UniqueKey

tes the attributes of the base Class.
(List of Attributes value O_O)

VERSE Attribute.inverseOfKeyAttributes
RAINTS each attribute must be a direct or inherited of the base class.
RAINTS no repetitions allowed in keyAttributes

Issue : introduce PureLists?

issue need ascending descending to support index keys or ordering keys.

S created for Key

SS A link back to the Class on which this Key depends.
(Class value M_1)

UniqueKey
a list of attributes on which instances of the base class may be keyed.

note order unimportant for Unique Keys.
LURAL UniqueKeys
EDPLURAL UniqueKeys
YPEOF Key

Attributes

AttributeSection
a group of attributes for a class that merit a shared explanation.

LURAL AttributeSections
EDPLURAL AttributeSections
SEDON Class
DENTS Attribute
YPEOF Component

nal whether the attributes in this section, taken together, are optional.
(Boolean value O_O)

If the Attribute Section is required,then each Attribute within the sectional is optional ot required, depending on how it is marked.

-
- But if the Arrribute Section is optional each attribute in the section is only required if any attribute in the section is ptresent.

s created for AttributeSection

teSections nverse attribute for Class.attributeSections from which this was implied.
(Class value M_1)

VERSE Class.attributeSections

ss A link back to the Class on which this AttributeSection depends.
(Class value M_1)

Attribute
A property or characteristic of a class

PLURAL Attributes
BASEDON AttributeSection
PENDENTS AttributeConstraint
BTYPEOF Component

name ***(LowerCamel value O_O)***

VERRIDES Component.name

aType The kind of object to which the attribute refers. _
(DataType value O_O)

But,

- ◦ List of Editions
- ◦ Set of Edition
- ◦ ... and more complicated cases.

see the section below on Data Type Specifiers.

tional Indicates whether the attribute must have a value for every instance of the class _
(Boolean value O_O)

DEFAULT *** False

inality The cardinality of the relationship represented by the attribute _
(Cardinality value O_O)

DEFAULT
*** For a singular attribute, the default cardinality is N:1. If the attribute is 1:1, it must be stated explicitly. For a collective attribute, the default is 1:N. If the attribute is N:M, it must be stated explicitly.

note how this works with optionality

ertible ***(Boolean value O_O)***

ERIVATION true if the data type is a class or a simple collection of members of a class.

Class the class which contains, or would contain the inverse attribute
(Optional Class value O_O)

INVERSE Class.inverseOfInverseClass
ERIVATION from the data type. Null unless arrribute is invertible.

ribute ***(Optional Attribute value O_O)***

VERSE Attribute.inverseOfInverseAttribute

nal (Optional Attribute value O_O)

VERSE Attribute.inverseOfInverseIsOptional

ult The rule or formula for calculating the value, if no value is supplied Now running to a second line with the parenthentical on yet a third line
(Optional Derivation value O_O)

note even when an Attribute has a default derivation, there's no guarantee that every instance will have an assigned value. Example needed.

on For derived attributes, the rule or formula for calculating the value _
(Optional Derivation value O_O)

issue on insert vs on access?

nts Any validation rules specific to this attribute _
(List of Constraints value O_O)

note from Class.constraints

les the higher level attribute which this one overrides - for type or ...
(Attribute value O_O)

VERSE Attribute.inverseOfOverrides

nal Indicates whether the attribute must have a value for every instance of the class _
(Boolean value O_O)

EFAULT *** False

lity The cardinality of the relationship represented by the attribute _
(Cardinality value O_O)

EFAULT *** For a singular attribute, the default cardinality is N:1. If the attribute is 1:1, it must be stated explicitly. For a collective attribute, the default is 1:N. If the attribute is N:M, it must be stated explicitly.

note how this works with optionality

s
ble (Boolean value O_O)

VATION true if the data type is a class or a simple collection of members of a class.

ss the class which contains, or would contain the inverse attribute
(Optional Class value O_O)

Attributes

INVERSE	Class.inverseOfInverseClass
ERIVATION	from the data type. Null unless arrribute is invertible.
ribute	(Optional Attribute value O_O)
INVERSE	Attribute.inverseOfInverseAttribute
tional	(Optional Attribute value O_O)
INVERSE	Attribute.inverseOfInverseIsOptional

efault	The rule or formula for calculating the value, if no value is supplied Now running to a second line with the parenthentical on yet a third line (Optional Derivation value O_O)
note	even when an Attribute has a default derivation, there's no guarantee that every instance will have an assigned value. Example needed.
vation	For derived attributes, the rule or formula for calculating the value _ (Optional Derivation value O_O)
issue	on insert vs on access?
raints	Any validation rules specific to this attribute _ (List of Constraints value O_O)
note	from Class.constraints

king rrides	the higher level attribute which this one overrides - for type or ... (Attribute value O_O)
INVERSE	Attribute.inverseOfOverrides

utes	created for Attribute
ibutes	Inverse attribute for Class.attributes from which this was implied. (Class value M_1)
INVERSE	Class.attributes
Attributes	Inverse attribute for Key.keyAttributes from which this was implied. (Key value M_1)
INVERSE	Key.keyAttributes
Section	A link back to the AttributeSection on which this Attribute depends. (AttributeSection value M_1)
rseAttribute	Inverse attribute for Attribute.inverseAttribute from which this was implied. (Attribute value M_1)

VERSE Attribute.inverseAttribute

IsOptional Inverse attribute for Attribute.inverseIsOptional from which this was implied.
(Attribute value M_1)

VERSE Attribute.inverseIsOptional

les Inverse attribute for Attribute.overrides from which this was implied.
(Attribute value M_1)

VERSE Attribute.overrides

Derivation
A rule or formula for deriving the value of an attribute

LURAL Derivations

ent An English language statement of the derivation rule _
(RichText value O_O)

on The formal expression of the derivation in a programming language _
(CodeExpression value O_O)

Constraint
A rule, condition, or validation that must be satisfied by the model

LURAL Constraints
YPEOF Component
TYPES ClassConstraint , AttributeConstraint

ent An English language statement of the constraint _
(RichText value O_O)

on The formal expression of the constraint in a programming language, for example: OCL or Python. _
(CodeExpression value O_O)

ity (Code value O_O)

```
Warning, nothing fatal; just a caution
Error, serious. Fix now
```

ClassConstraint

LURAL ClassConstraints
EDPLURAL ClassConstraints
SEDON Class
YPEOF Constraint

Attributes

utes	created for ClassConstraint
Class	A link back to the Class on which this ClassConstraint depends. (Class value M_1)

AttributeConstraint

PLURAL	AttributeConstraints
UMEDPLURAL	AttributeConstraints
BASEDON	Attribute
BTYPEOF	Constraint

utes	created for AttributeConstraint
ribute	A link back to the Attribute on which this AttributeConstraint depends. (Attribute value M_1)

BLANK

Methods

Method
A behavior or operation associated with a class

LURAL Methods
YPEOF Component

ers The input parameters of the method _
(List of Parameters value O_O)
VERSE Parameter.inverseOfParameters

pe The data type of the value returned by the method _
(DataType value O_O)

s created for Method

ds Inverse attribute for Class.methods from which this was implied.
(Class value M_1)
VERSE Class.methods

Parameter
An input to a method

LURAL Parameters
YPEOF Component

pe The data type of the parameter
(DataType value O_O)

ity The cardinality of the parameter. e.g., optional, required.
(Cardinality value O_O)

s created for Parameter

eters Inverse attribute for Method.parameters from which this was implied.
(Method value M_1)
VERSE Method.parameters

Trivial Data Types

Message

LURAL Messages
EDPLURAL Messages

CodeExpression

LURAL CodeExpressions
EDPLURAL CodeExpressions

ge the programming language
(Code value O_O)

```
OCL, Object Constraint Language
Java, Java
Python, Python
```

on *(String value O_O)*

DataType

LURAL DataTypes
EDPLURAL DataTypes

SimpleDataTypeSubtpeOfDataType

LURAL SimpleDataTypeSubtpeOfDataTypes
EDPLURAL SimpleDataTypeSubtpeOfDataTypes

ss *(Class value O_O)*
VERSE Class.inverseOfCoreClass

ComplexDataType

LURAL ComplexDataTypes
EDPLURAL ComplexDataTypes

on *(AggregatingOperator value O_O)*

es *(List of DataTypes value O_O)*

AggregatingOperator

LURAL AggregatingOperators
EDPLURAL AggregatingOperators

me *(Code value O_O)*

```
SetOf
ListOf
Mapping
```

BLANK

Trivial Low level Data Types

insert Camel Case.md

Emoji

LURAL Emojis
EDPLURAL Emojis

String

LURAL Strings
EDPLURAL Strings

CamelName

A short string without punctuation or spaces, suitable for names, labels, or identifiers and presented in camel case.

LURAL CamelNames
EDPLURAL CamelNames
YPEOF String
TYPES UpperCamel , LowerCamel

ng *(String value O_O)*

RAINTS Must follow the camel case naming convention and not be empty.
xample "firstName", "orderDate", "customerID"

ngNote

- *CamelName* is presented here, just after its first usage by another class (Component), to provide context and understanding before it is used further in the model.

UpperCamel
a CamelName that begins with a capital letter

ample _ "Customer", "ProductCategory", "PaymentMethod"
WHERE content begins with an upper case letter.
LURAL UpperCamels
EDPLURAL UpperCamels
YPEOF CamelName

LowerCamel
a CamelName that begins with a lower case letter

ample "firstName", "orderTotal", "shippingAddress"
WHERE content begins with a lower case letter.
LURAL LowerCamels
EDPLURAL LowerCamels

BTYPEOF CamelName

QualifiedCamel
an expression consisting of Camel Names separated by periods

PLURAL QualifiedCamels
UMEDPLURAL QualifiedCamels
BTYPEOF String
STRAINTS
content consists of CamelNames, separated by periods. Each of the camel names must be Upper Camel except, possibly, the first.

RichText
A string with markup for block level formatting.

PLURAL RichTexts
UMEDPLURAL RichTexts
BTYPEOF String
UBTYPES OneLiner

value the string content
(String value O_O)

ormat the rich text coding language used
(Code value O_O)

```
HTML
MarkDown
```

OneLiner
String with markup for line level formatting.

PLURAL OneLiners
UMEDPLURAL OneLiners
BTYPEOF RichText

value the string content
(String value O_O)

VERRIDES RichText.value
STRAINTS must not containa line break or new line character
MESSAGE A line can't span two lines

PrimitiveType
A basic, built-in data type

PLURAL PrimitiveTypes

EDPLURAL PrimitiveTypes
TYPES String , Integer , Decimal , Boolean , Date , Time , DateTime

String

LURAL Strings
EDPLURAL Strings
YPEOF PrimitiveType
TYPES CamelName , QualifiedCamel , RichText

Integer

LURAL Integers
EDPLURAL Integers
YPEOF PrimitiveType

Decimal

LURAL Decimals
EDPLURAL Decimals
YPEOF PrimitiveType

Boolean

LURAL Booleans
EDPLURAL Booleans
YPEOF PrimitiveType

Date

LURAL Dates
EDPLURAL Dates
YPEOF PrimitiveType

Time

LURAL Times
EDPLURAL Times
YPEOF PrimitiveType

DateTime

LURAL DateTimes
EDPLURAL DateTimes
YPEOF PrimitiveType

CodingLanguage

LURAL CodingLanguages
EDPLURAL CodingLanguages

Trivial Low level Data Types

Cardinality

PLURAL Cardinalitys
UMEDPLURAL Cardinalitys

TemplateLanguage

PLURAL TemplateLanguages
UMEDPLURAL TemplateLanguages

Template

PLURAL Templates
UMEDPLURAL Templates

Code

PLURAL Codes
UMEDPLURAL Codes

Annotation Types Used

These are the recognized Annotation Types for the LDM model.

And this is how you register the AnnotationTyped for a model. By including this sort of array in the DSL document for the model.

PlantUML Diagram - Inert

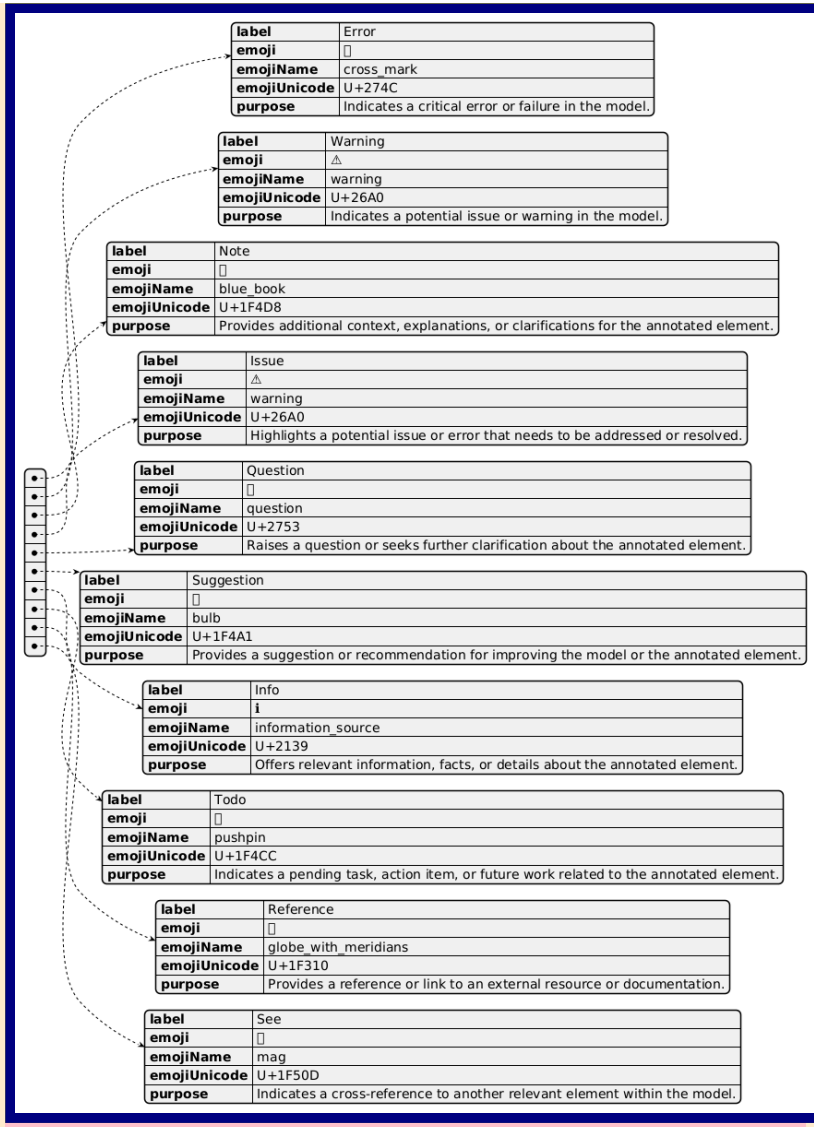
```
@startjson

[
{
"label": "Error",
"emoji": "❌",
"emojiName": "cross_mark",
"emojiUnicode": "U+274C",
"purpose": "Indicates a critical error or failure in
the model."
},
{
"label": "Warning",
"emoji": "⚠",
"emojiName": "warning",
"emojiUnicode": "U+26A0",
"purpose": "Indicates a potential issue or warning
in the model."
},
{
"label": "Note",
"emoji": "📘",
"emojiName": "blue_book",
"emojiUnicode": "U+1F4D8",
"purpose": "Provides additional context,
explanations, or clarifications for the annotated
element."
},
{
"label": "Issue",
"emoji": "⚠",
"emojiName": "warning",
```

```
"emojiUnicode": "U+26A0",
"purpose": "Highlights a potential issue or error
that needs to be addressed or resolved."
},
{
"label": "Question",
"emoji": "❓",
"emojiName": "question",
"emojiUnicode": "U+2753",
"purpose": "Raises a question or seeks further
clarification about the annotated element."
},
{
"label": "Suggestion",
"emoji": "💡",
"emojiName": "bulb",
"emojiUnicode": "U+1F4A1",
"purpose": "Provides a suggestion or
recommendation for improving the model or the
annotated element."
},
{
"label": "Info",
"emoji": "ℹ️",
"emojiName": "information_source",
"emojiUnicode": "U+2139",
"purpose": "Offers relevant information, facts, or
details about the annotated element."
},
{
"label": "Todo",
"emoji": "📌",
"emojiName": "pushpin",
"emojiUnicode": "U+1F4CC",
"purpose": "Indicates a pending task, action item,
or future work related to the annotated element."
},
{
"label": "Reference",
"emoji": "🌐",
"emojiName": "globe_with_meridians",
```

```
"emojiUnicode": "U+1F310",
"purpose": "Provides a reference or link to an
external resource or documentation."
},
{
"label": "See",
"emoji": "🔍",
"emojiName": "mag",
"emojiUnicode": "U+1F50D",
"purpose": "Indicates a cross-reference to another
relevant element within the model."
}
]
@endjson
```

PlantUML Diagram - PNG for puml

Annotation Types Used



Annotation types as CSV

Annotation types as CSV

```
label,emoji,emojiName,emojiUnicode,purpose
Error,❌,cross_mark,U+274C,Indicates a critical error or failure in the model.
Warning,⚠,warning,U+26A0,Indicates a potential issue or warning in the model.
Note,📘,blue_book,U+1F4D8,"Provides additional context, explanations, or clarifications for the annotated element."
Issue,⚠,warning,U+26A0,Highlights a potential issue or error that needs to be addressed or resolved.
Question,❓,question,U+2753,Raises a question or seeks further clarification about the annotated element.
Suggestion,💡,bulb,U+1F4A1,Provides a suggestion or recommendation for improving the model or the annotated element.
Info,ℹ,information_source,U+2139,"Offers relevant information, facts, or details about the annotated element."
Todo,📌,pushpin,U+1F4CC,"Indicates a pending task, action item, or future work related to the annotated element."
Reference,🌐,globe_with_meridians,U+1F310,Provides a reference or link to an external resource or documentation.
See,🔍,mag,U+1F50D,Indicates a cross-reference to another relevant element within the model.
```

	label	emoji	emojiName	emojiUnicode	purpose
0	Error	❌	cross_mark	U+274C	Indicates a critical error or failure in the model.
1	Warning	⚠	warning	U+26A0	Indicates a potential issue or warning in the model.
2	Note	📘	blue_book	U+1F4D8	Provides additional context, explanations, or clarifications for the annotated element.
3	Issue	⚠	warning	U+26A0	Highlights a potential issue

BLANK

Appendices

various sidebars to include Insert More Sidebars.md Insert Overrides.md insert LDM Intro.md Insert OCL.md Insert Camel Case.md

== content to add