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Literate Data Model

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

Components

Components

[Annotation](#)

[LiterateModel](#), [Subject](#), [Class](#), [Key](#), [AttributeSection](#), [Attribute](#), [Constraint](#), [Method](#), [Parameter](#)

the name of the component, not in camel case

([String](#) value O_O)

This is a warning with emoji

The name of the component

([CamelName](#) value O_O)

([QualifiedCamel](#) value O_O)

a short form of the component's name, used for cross references and improved readability.

([CamelName](#) value O_O)

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

name - how do you say name in english?

x.name == y

the abbreviated name should be shorter than the actual name

len(abbreviatedName) < len(name)

Why have an abbreviation longer than the name?

Warning

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

A brief, one-line definition or description of the component, suitable for use in a descriptive table of contents. _

([OneLiner](#) value O_O)

A more detailed explanation or discussion of the component _

([RichText](#) value O_O)

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

([Boolean](#) value O_O)

false

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.

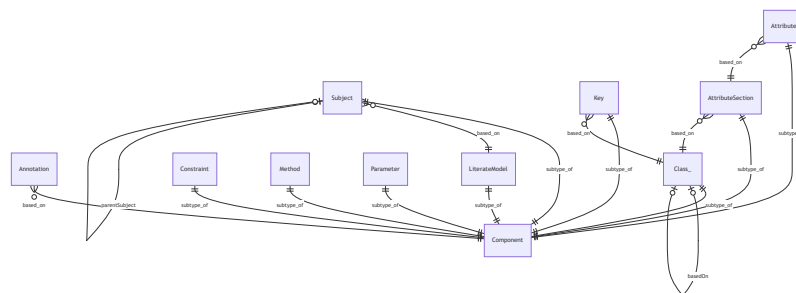
mechanical attributes
Indicates whether this component is an embellishment added during post-parsing processing _
(<i>Boolean value 0_0</i>)
false
This attribute is set to true for components that are automatically generated or added during the fleshing out, review, or rendering processes, such as implied attributes or suggested model elements. It helps distinguish embellishments from the core model elements defined in the original LDM source.

Mermaid ER Diagram for Component - Inert

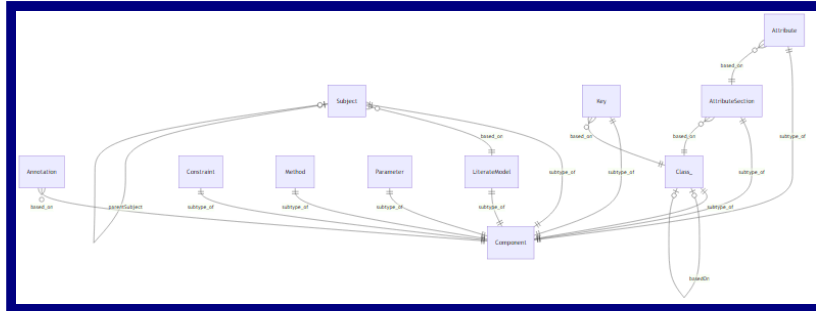
erDiagram

Annotation }o--|| Component : based_on
LiterateModel ||--|| Component : subtype_of
Subject ||--|| Component : subtype_of
Subject }o--|| LiterateModel : based_on
Subject |o--o| Subject : parentSubject
Class_ ||--|| Component : subtype_of
Class_ |o--o| Class_ : basedOn
Key ||--|| Component : subtype_of
Key }o--|| Class_ : based_on
AttributeSection ||--|| Component : subtype_of
AttributeSection }o--|| Class_ : based_on
Attribute ||--|| Component : subtype_of
Attribute }o--|| AttributeSection : based_on
Constraint ||--|| Component : subtype_of
Method ||--|| Component : subtype_of
Parameter ||--|| Component : subtype_of

Mermaid ER Diagram for Component - Live!



Mermaid ER Diagram for Component - PNG for mermaid



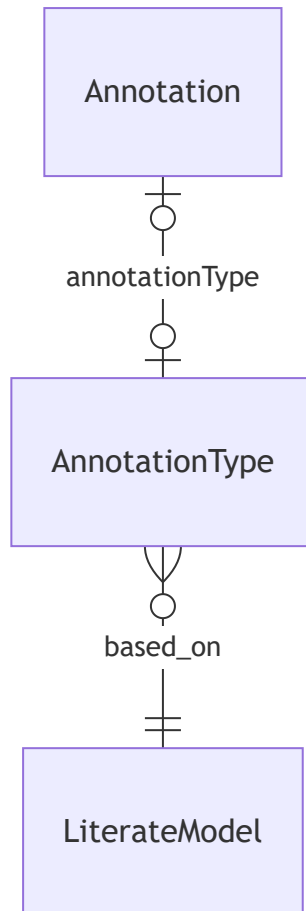
AnnotationType	
a kind of note, or aside, used to call attention to additional information about some Component.	
Each LDM declares a set of Annotation Types, with defined labels, emojis, and clearly documented purposes. These are <i>recognized</i> or <i>registered</i> Annotation Types.	
AnnotationTypes	
AnnotationTypes	
LiterateModel	
an emoji	(Emoji value O_O)
an emoji	(String value O_O)
the Unicode for the emoji	(String value O_O)
A short label to indicate the purpose of the annotation _	(LowerCamel value O_O)
the plural form of the label	(UpperCamel value O_O)
based on label	
the intended reason for the annotation.	(OneLiner value O_O)
created for AnnotationType	
A link back to the LiterateModel on which this AnnotationType depends.	(LiterateModel value M_1)
inverse attribute for Annotation.annotationType from which this was implied.	(Annotation value M_1)
Annotation.annotationType	

Mermaid ER Diagram for AnnotationType - Inert

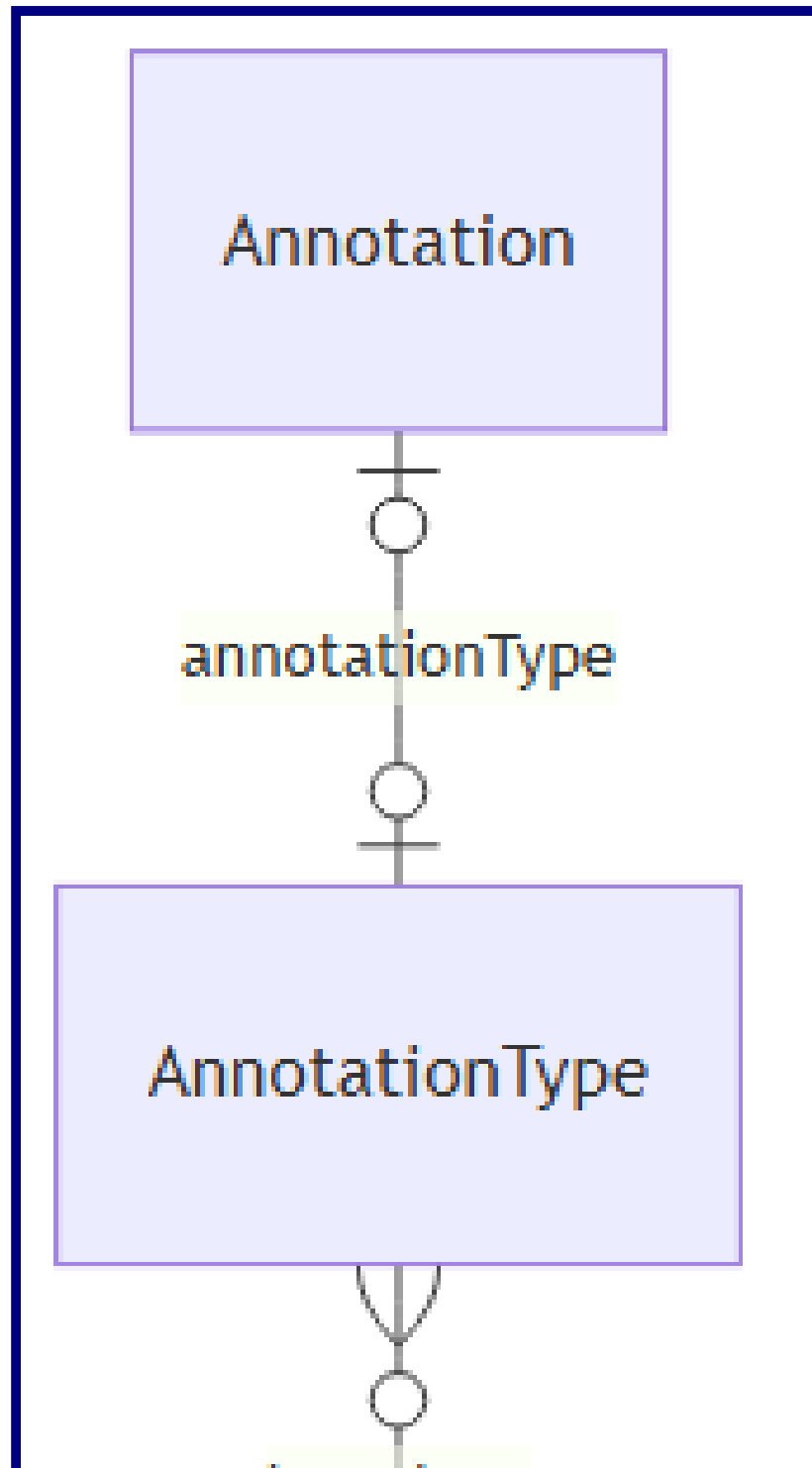
erDiagram

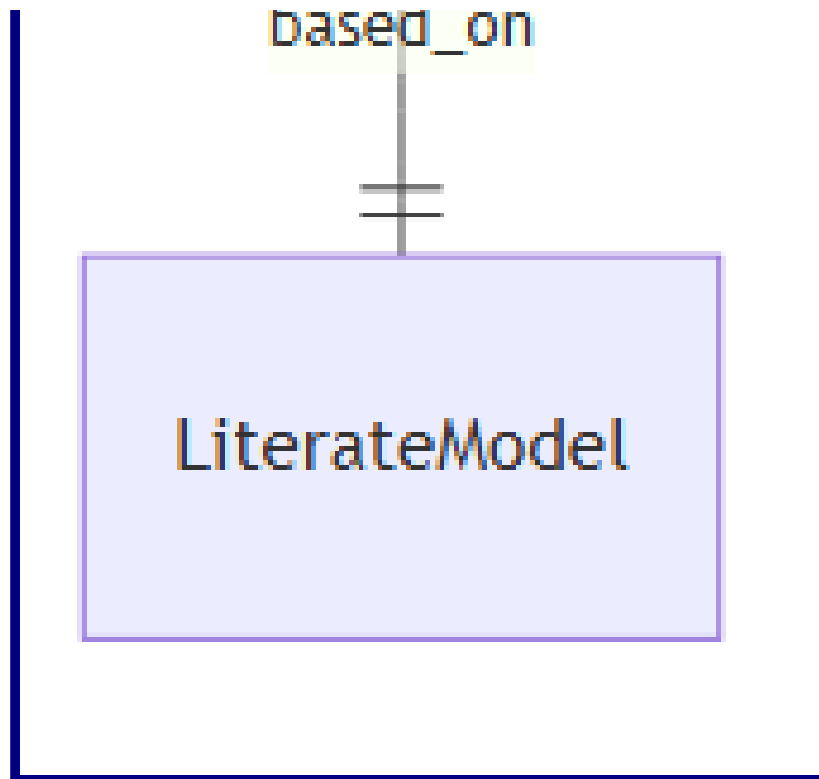
AnnotationType }o--|| LiterateModel : based_on
Annotation |o--o| AnnotationType : annotationType

Mermaid ER Diagram for AnnotationType - Live!



Mermaid ER Diagram for AnnotationType - PNG for mermaid





Annotation
A note or comment associated with a model element

Annotations
Annotations
[Component](#)

(*Optional* [AnnotationType](#) *value* O_O)

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

Should be a Value Type

[AnnotationType.inverseOfAnnotationType](#)

A short label to indicate the purpose of the annotation _ ([CamelName](#) *value* O_O)

But any short label is valid.

from annotationType

(*Optional* [Emoji](#) *value* O_O)

from annotation type

The content or body of the annotation	(RichText value <i>O_O</i>)
Indicates whether this annotation is an embellishment added during post-parsing processing _	(Boolean value <i>O_O</i>)
false 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.	
created for Annotation	
A link back to the Component on which this Annotation depends.	(Component value <i>M_1</i>)

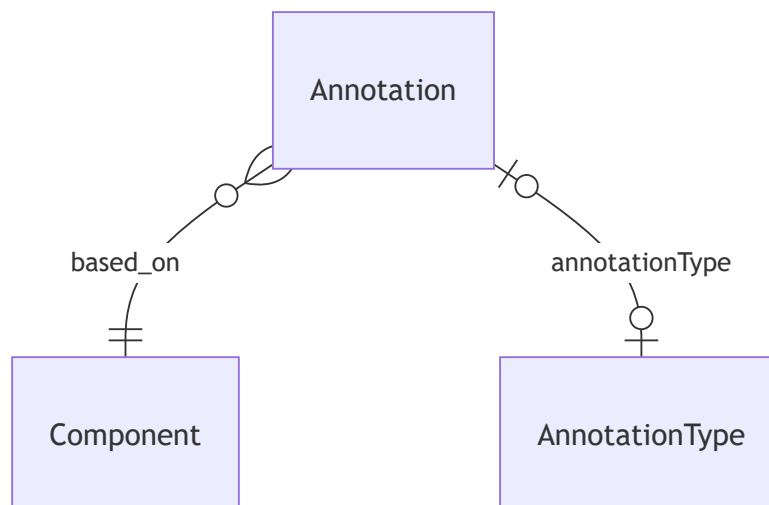
Mermaid ER Diagram for Annotation - Inert

erDiagram

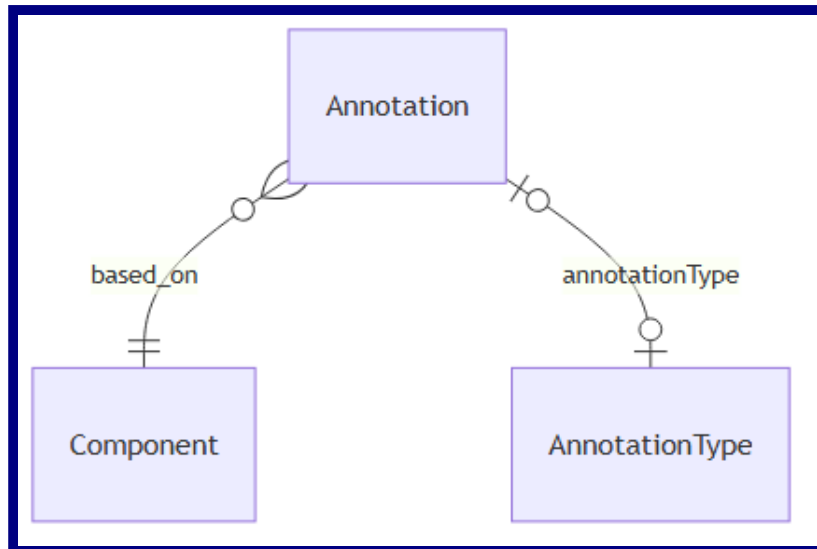
Annotation }o--|| Component : based_on

Annotation |o--o| AnnotationType : annotationType

Mermaid ER Diagram for Annotation - Live!



Mermaid ER Diagram for Annotation - PNG for mermaid



The Model and its Subjects

LiterateModel

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

LiterateModels

[AnnotationType](#), [Subject](#), [SubjectArea](#)

[Component](#)

([UpperCamel](#) value O_O)

[Component.name](#)

list of all classes in the model, as ordered in the definition of the model.

([List of Classes](#) value O_O)

[Class.inverseOfAllSubjects](#)

gathering s.allSubjects over s in subjectAreas

Subject names must be unique across the model.

list of all classes in the model, as ordered in the definition of the model.

([List of Classes](#) value O_O)

[Class.inverseOfAllClasses](#)

gathering s.allClasses over s in allSubjects.

Class names must be unique across the model.

([List of AnnotationTypes](#) value O_O)

the recommended language for expressing derivation, defaults, and constraints

([CodingLanguage](#) value O_O)

OCL

ges

([Optional List of CodingLanguages](#) value O_O)

the recommended language for expressing derivation, defaults, and constraints

([TemplateLanguage](#) value O_O)

Handlebars

pages

([Optional List of TemplateLanguages](#) value O_O)

A list of functions that require sophisticated AI-powered implementation *

([List of String](#) value O_O)

[aiEnglishPlural()]

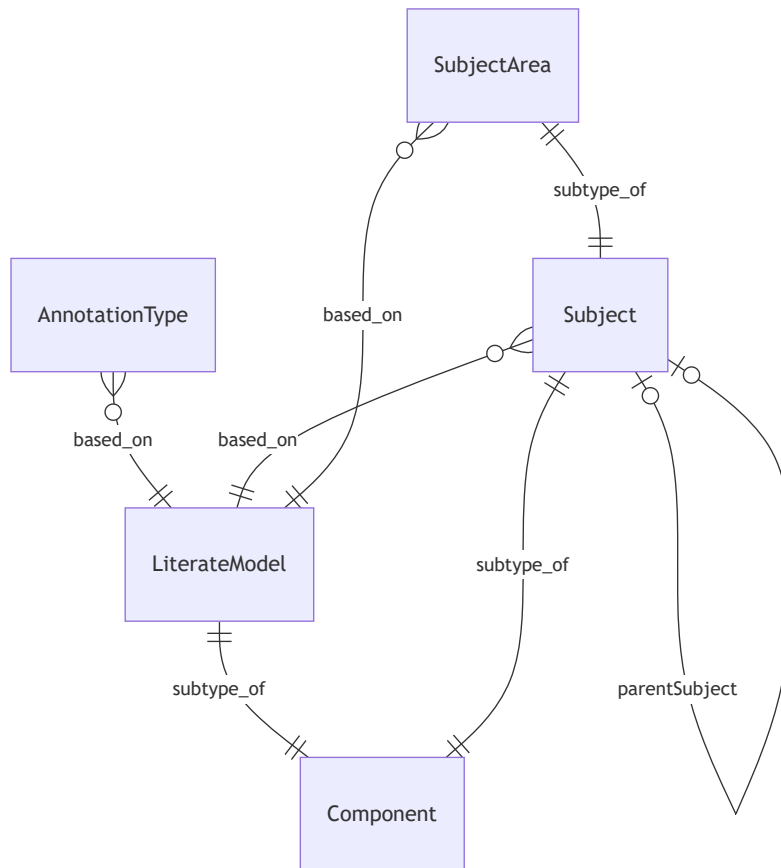
|

Mermaid ER Diagram for LiterateModel - Inert

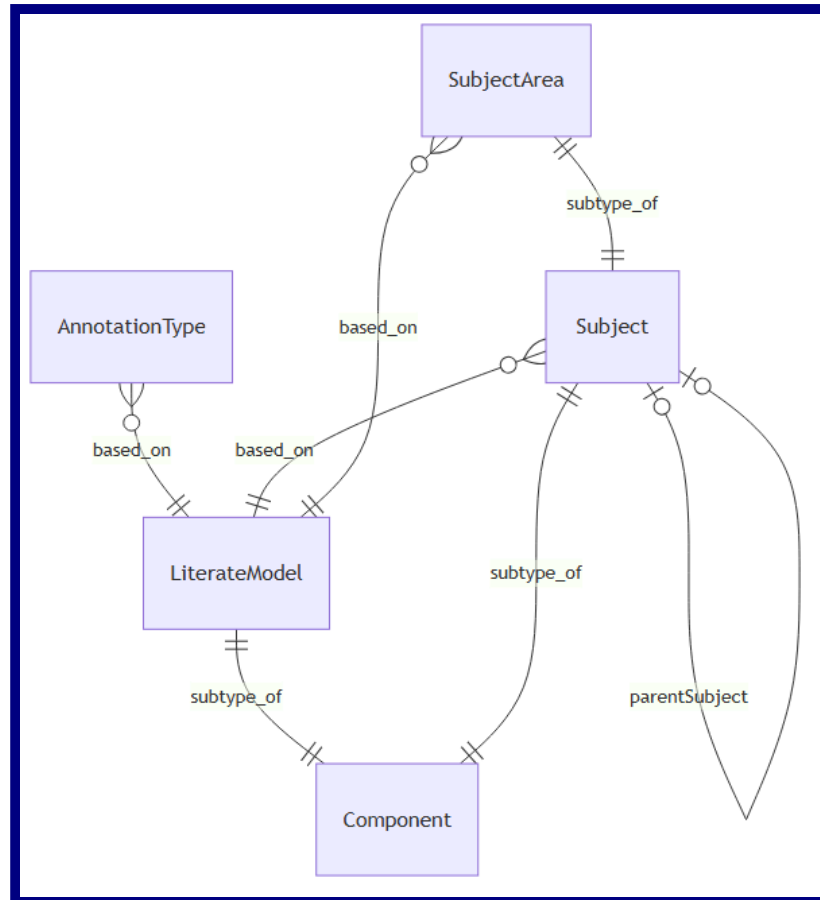
erDiagram

```
AnnotationType }o--|| LiterateModel : based_on
LiterateModel ||--|| Component : subtype_of
Subject ||--|| Component : subtype_of
Subject }o--|| LiterateModel : based_on
Subject |o--o| Subject : parentSubject
SubjectArea ||--|| Subject : subtype_of
SubjectArea }o--|| LiterateModel : based_on
```

Mermaid ER Diagram for LiterateModel - Live!



Mermaid ER Diagram for LiterateModel - PNG for mermaid



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.

Subjects
[LiterateModel](#)
[Component](#)
[SubjectArea](#)

(UpperCamel value O_O)
Component.name

The parent subject, if any, under which this subject is nested _ (<i>Optional</i> Subject value O_O)
Subject.inverseOfParentSubject

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

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

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

[Subject.parentSubject](#)

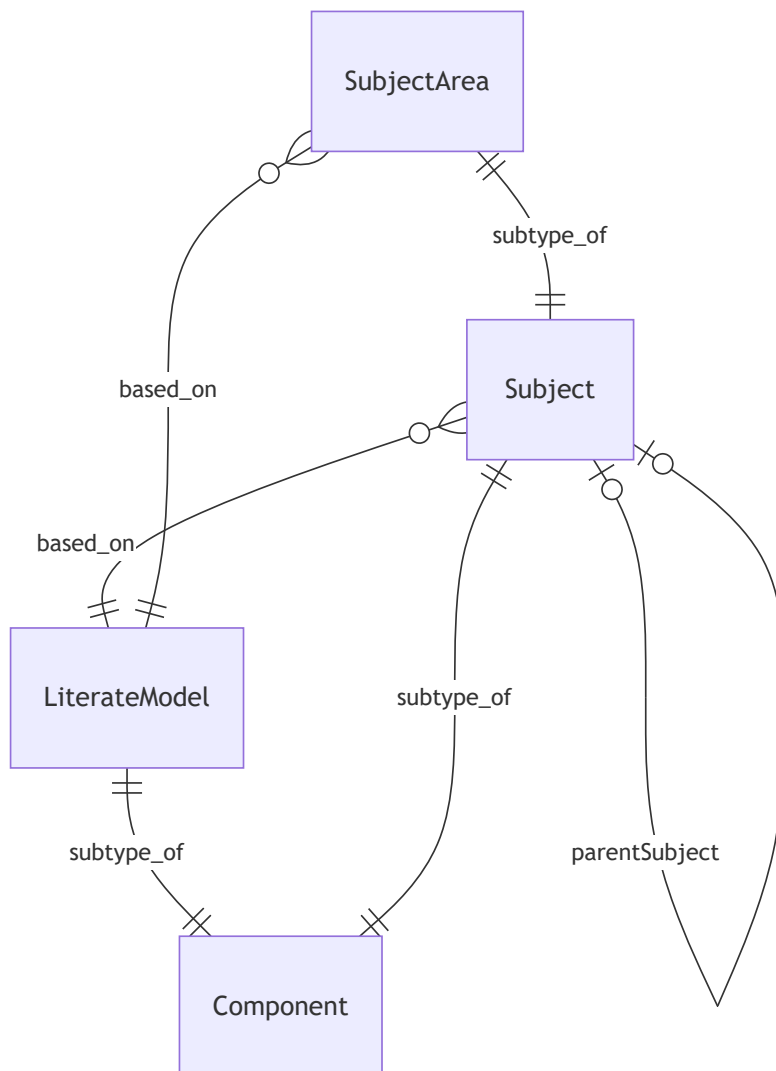
created for Subject
A link back to the LiterateModel on which this Subject depends. (LiterateModel value M_1)
Inverse attribute for Subject.parentSubject from which this was implied. (Subject value M_1)
Subject.parentSubject

Mermaid ER Diagram for Subject - Inert

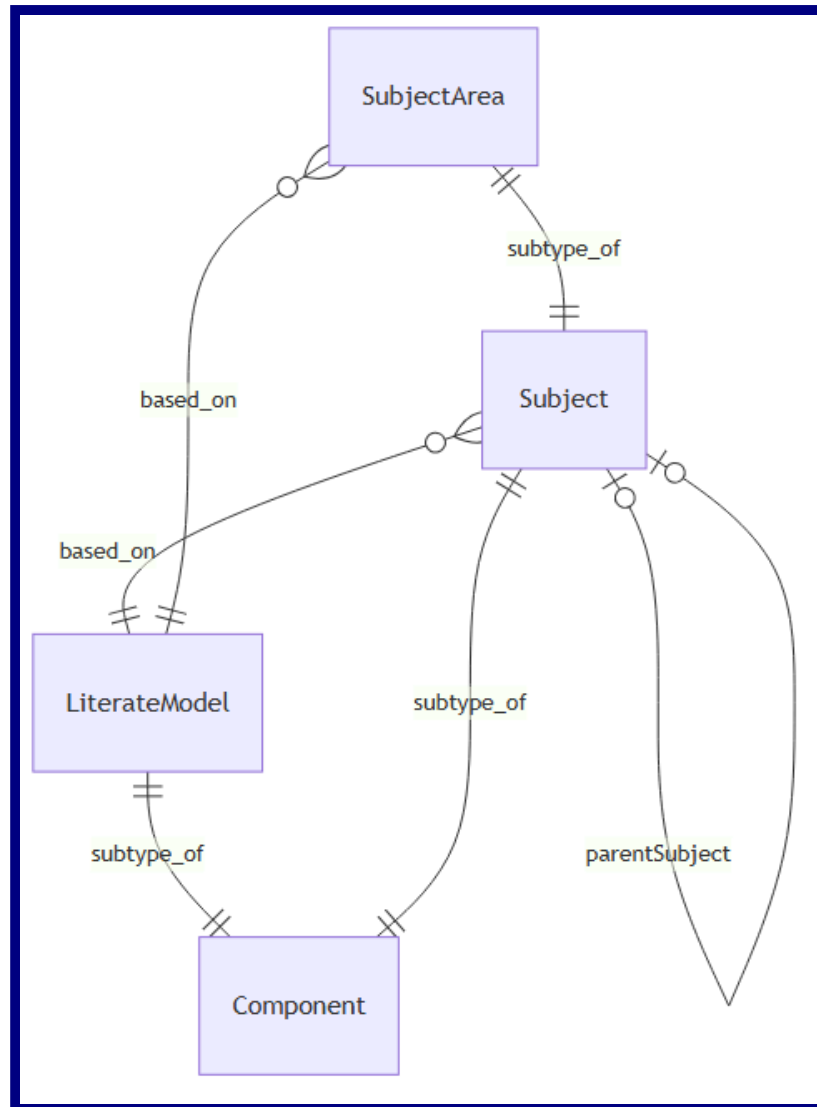
erDiagram

LiterateModel ||--|| Component : subtype_of
Subject ||--|| Component : subtype_of
Subject }o--|| LiterateModel : based_on
Subject |o--o| Subject : parentSubject
SubjectArea ||--|| Subject : subtype_of
SubjectArea }o--|| LiterateModel : based_on

Mermaid ER Diagram for Subject - Live!



Mermaid ER Diagram for Subject - PNG for mermaid



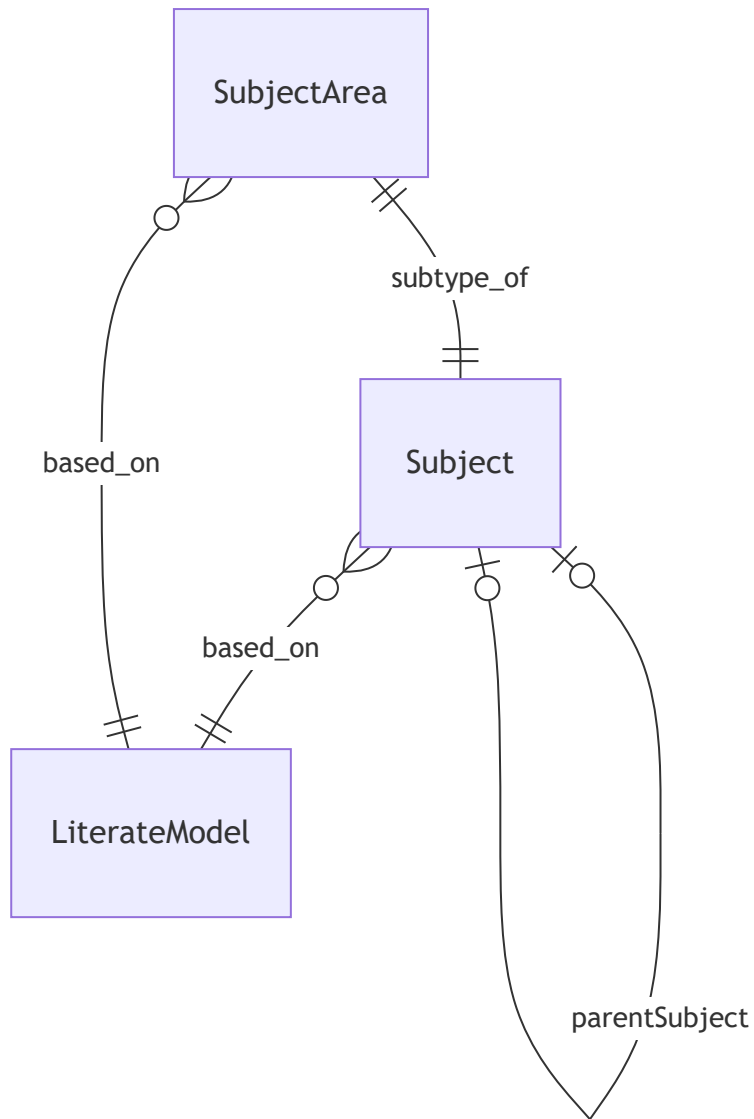
SubjectArea A main topic or area of focus within the model, containing related subjects and classes parentSubject is absent SubjectAreas LiterateModel Subject
created for SubjectArea
A link back to the LiterateModel on which this SubjectArea depends. (LiterateModel value <i>M_1</i>)

Mermaid ER Diagram for SubjectArea - Inert

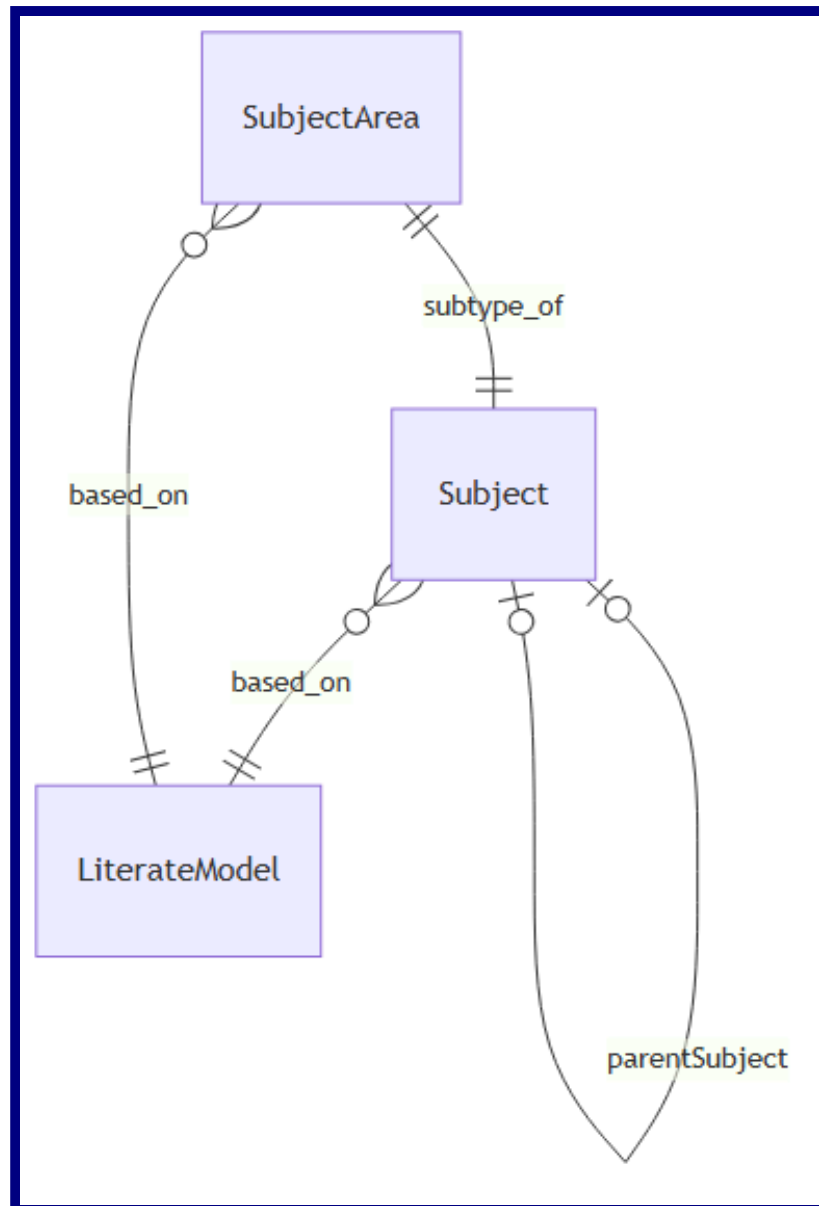
erDiagram

Subject }o--|| LiterateModel : based_on
Subject |o--o| Subject : parentSubject
SubjectArea ||--|| Subject : subtype_of
SubjectArea }o--|| LiterateModel : based_on

Mermaid ER Diagram for SubjectArea - Live!



Mermaid ER Diagram for SubjectArea - PNG for mermaid



Classes

Class

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

Classes

[Subtyping](#), [Key](#), [AttributeSection](#), [ClassConstraint](#)

[Component](#)

[ReferenceType](#)

Within each Class, attribute names must be unique.

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.

When inputting a model, you will rarely need to specify the plural form. The input program will just look it up.

the regular plural, formed by adding "s" or "es".

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.

that basedOn and dependentOf are being used synonymously in this metamodel.

[Class.inverseOfBasedOn](#)

The parent class or classes from which this class inherits attributes

([List of Classes](#) value O_O)

[Class.inverseOfSupertypes](#)

the criteria, or dimensions, by which the class can be divided into subtypes

([List of Subtypings](#) value O_O)

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).

[Subtyping.inverseOfSubtypings](#)

Any subtypes or specializations of this class based on its subtypings.

	(<i>List of <u>Classes</u> value O_O</i>)
For instance, using the <code>Book</code> example, the subtypes could include <code>FictionBook</code> , <code>Non-fictionBook</code> , <code>HardcoverBook</code> , <code>PaperbackBook</code> , <code>ScienceBook</code> , and <code>HistoryBook</code> . Class.inverseOfSubtypes	
The attributes or properties of the class, in the order in which they should be presented _ (<i>List of <u>Attributes</u> value O_O</i>)	
Attribute.inverseOfAttributes	
additional attributes or properties of the class, grouped for clarity and elaboration. _ (<i>List of <u>AttributeSections</u> value O_O</i>)	
AttributeSection.inverseOfAttributeSections	
Any constraints, rules, or validations specific to this class _ (<i>List of <u>Constraints</u> value O_O</i>)	
Constraints may be expressed on either the <code>Class</code> or the <code>Attribute</code> . Always?	
Any behaviors or operations associated with this class _ (<i>List of <u>Methods</u> value O_O</i>)	
Method.inverseOfMethods	
the <code>Classes</code> which are basedOn this <code>Class</code> (<i>Optional Set of <u>Classes</u> value O_O</i>)	
Class.basedOn	
(<i>Optional Set of <u>UniqueKeys</u> value O_O</i>)	
UniqueKey.basedOn	
Inverse attribute for <code>LiterateModel.allSubjects</code> from which this was implied. (<i><u>LiterateModel</u> value M_1</i>)	
LiterateModel.allSubjects	
Inverse attribute for <code>LiterateModel.allClasses</code> from which this was implied. (<i><u>LiterateModel</u> value M_1</i>)	
LiterateModel.allClasses	
Inverse attribute for <code>Subject.classes</code> from which this was implied. (<i><u>Subject</u> value M_1</i>)	

[Subject.classes](#)

Inverse attribute for Class.basedOn from which this was implied.

([Class](#) value M_1)

[Class.basedOn](#)

Inverse attribute for Class.supertypes from which this was implied.

([Class](#) value M_1)

[Class.supertypes](#)

Inverse attribute for Class.subtypes from which this was implied.

([Class](#) value M_1)

[Class.subtypes](#)

Inverse attribute for Subtyping.classes from which this was implied.

([Subtyping](#) value M_1)

[Subtyping.classes](#)

Inverse attribute for SimpleDataTypeSubtpeOfDataType.coreClass from which this was implied.

([SimpleDataTypeSubtpeOfDataType](#) value M_1)

[SimpleDataTypeSubtpeOfDataType.coreClass](#)

Mermaid ER Diagram for Class_ - Inert

erDiagram

Class_ ||--|| Component : subtype_of

Class_ }o--o| Class_ : basedOn

Subtyping }o--|| Class_ : based_on

ReferenceType ||--|| Class_ : subtype_of

Key ||--|| Component : subtype_of

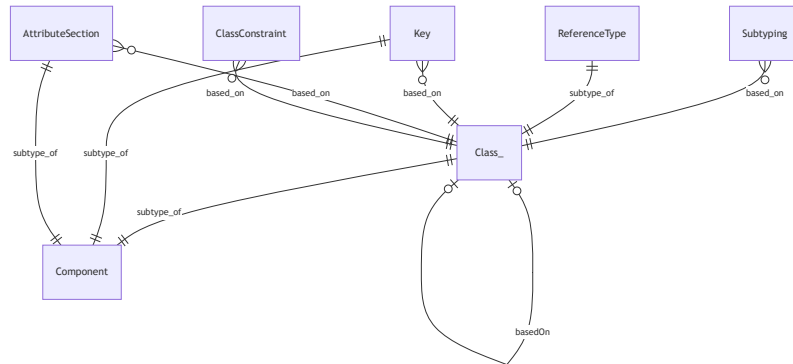
Key }o--|| Class_ : based_on

AttributeSection ||--|| Component : subtype_of

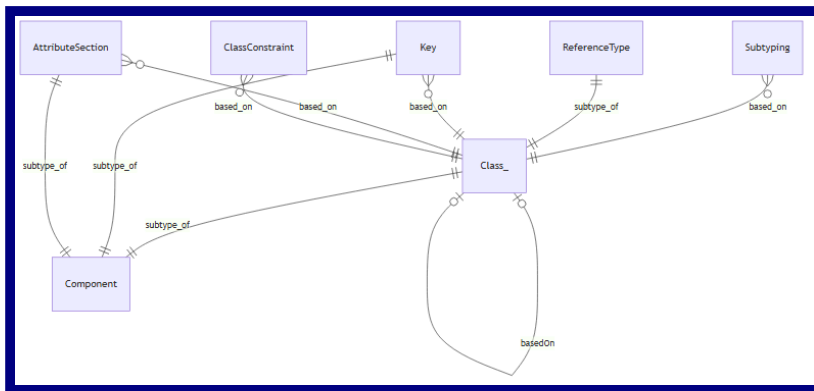
AttributeSection }o--|| Class_ : based_on

ClassConstraint }o--|| Class_ : based_on

Mermaid ER Diagram for Class_ - Live!



Mermaid ER Diagram for Class_ - PNG for mermaid



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

Subtypings
Subtypings
[Class](#)

(LowerCamel value O_O)
--

(Boolean value O_O)

true

(Boolean value O_O)

true

(List of Classes value O_O)

DSL : Shown in the DSL as

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

every class can have an unnamed subtyping.
[Class.inverseOfClasses](#)

created for Subtyping

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

[Class.subtypings](#)

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

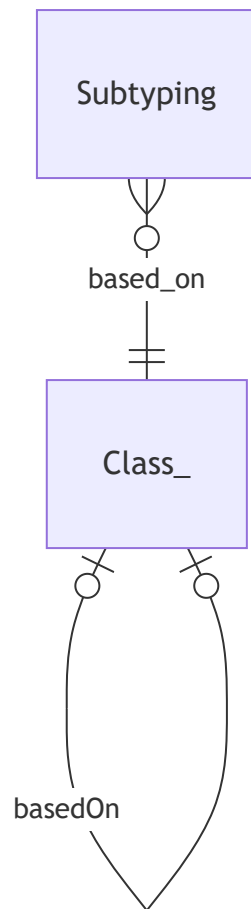
Mermaid ER Diagram for Subtyping - Inert

erDiagram

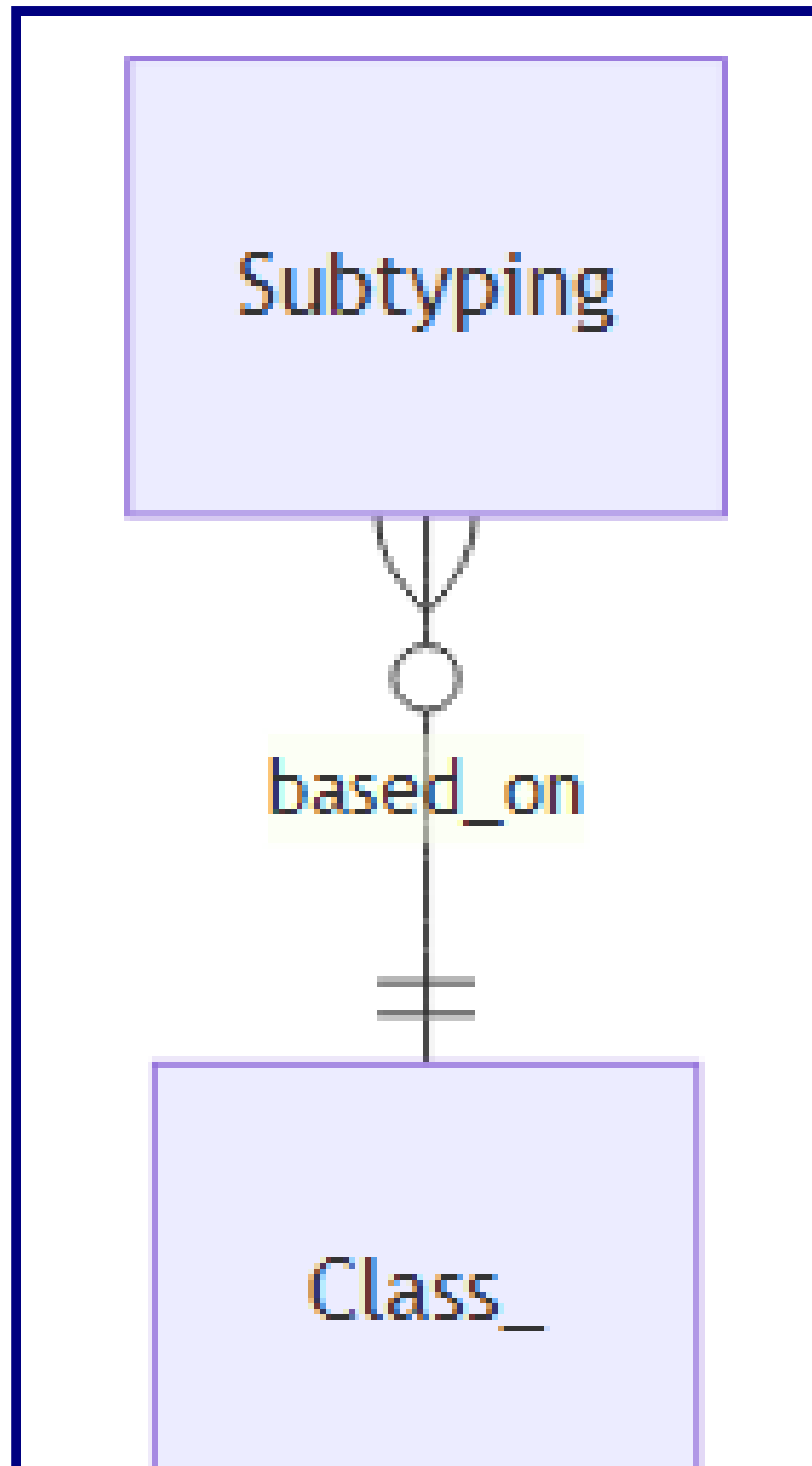
Class_ |o--o| Class_ : basedOn

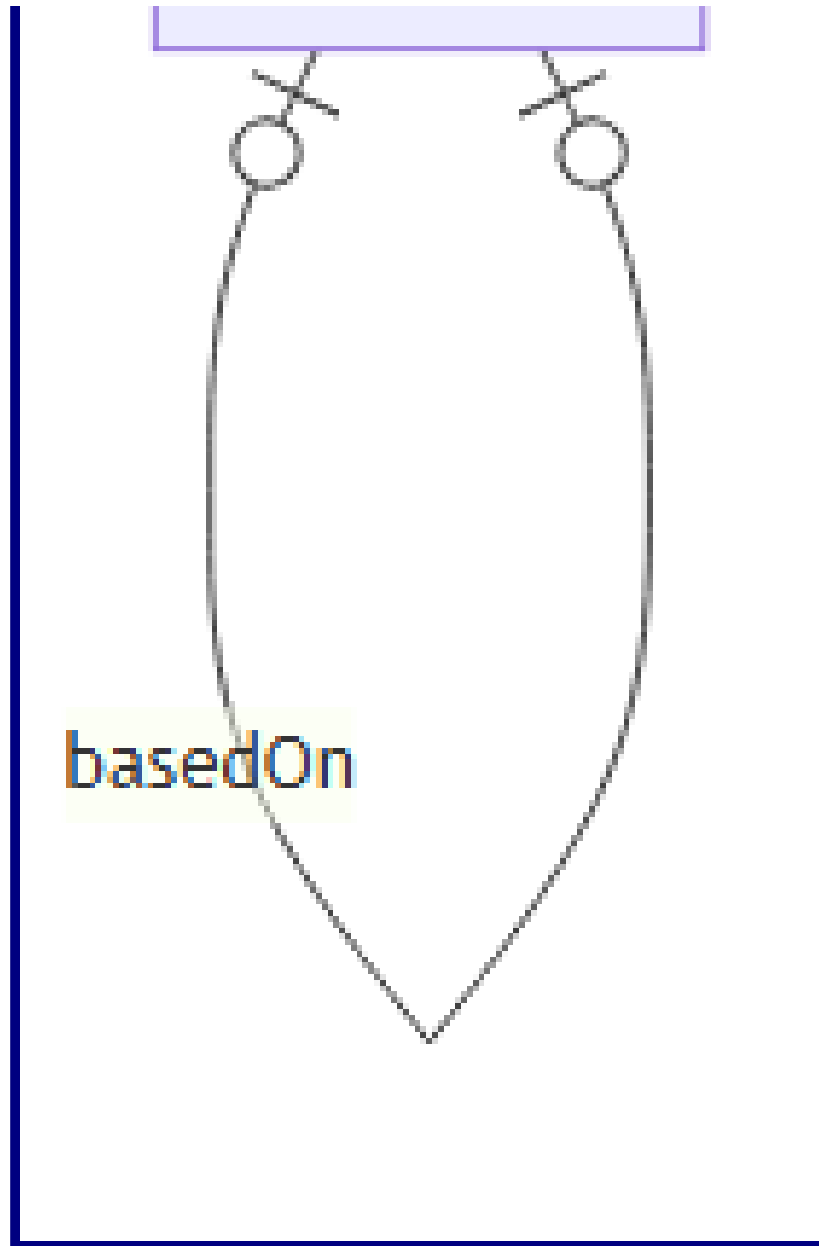
Subtyping }o--|| Class_ : based_on

Mermaid ER Diagram for Subtyping - Live!



Mermaid ER Diagram for Subtyping - PNG for mermaid





ReferenceType

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

ReferenceTypes
ReferenceTypes
[Class](#)

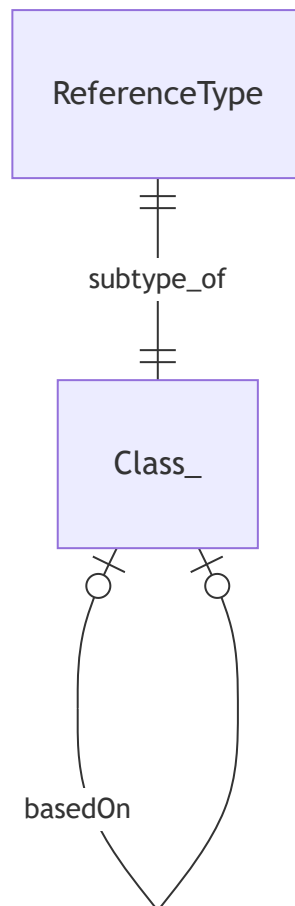
Mermaid ER Diagram for ReferenceType - Inert

erDiagram

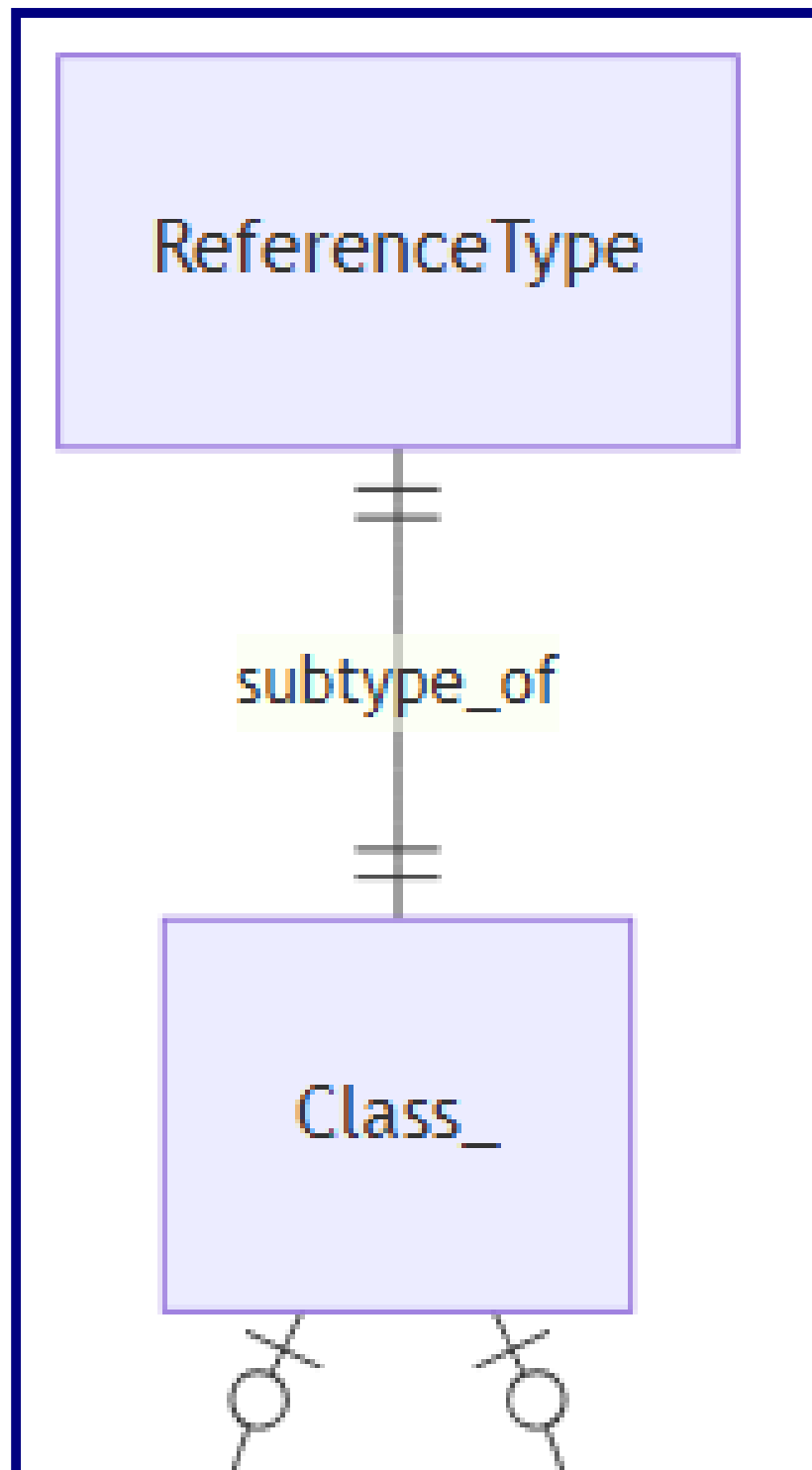
Class_ ||o--o| Class_ : basedOn

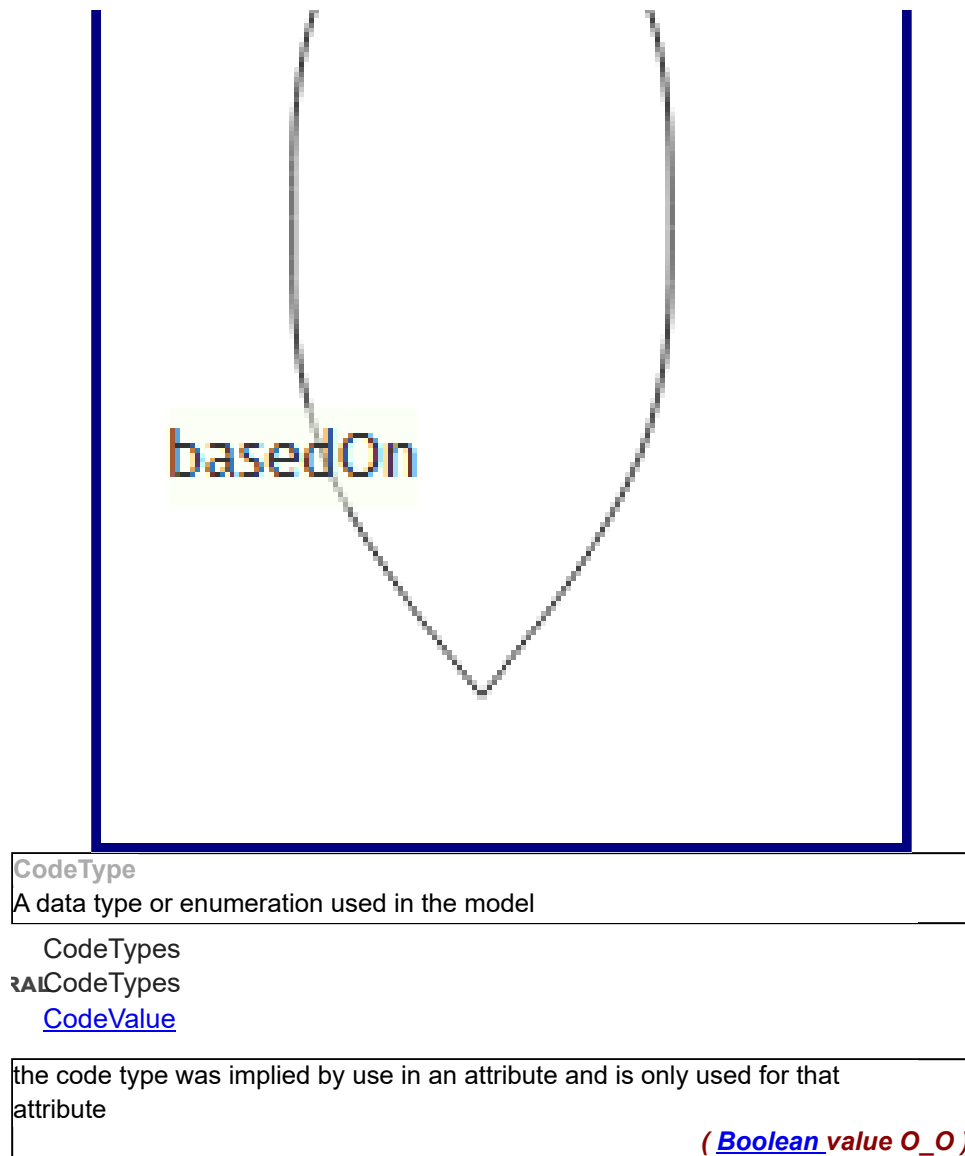
ReferenceType ||--|| Class_ : subtype_of

Mermaid ER Diagram for ReferenceType - Live!



Mermaid ER Diagram for ReferenceType - PNG for mermaid



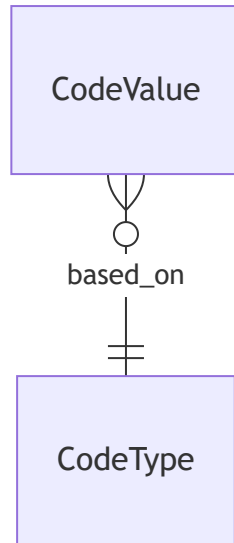


Mermaid ER Diagram for CodeType - Inert

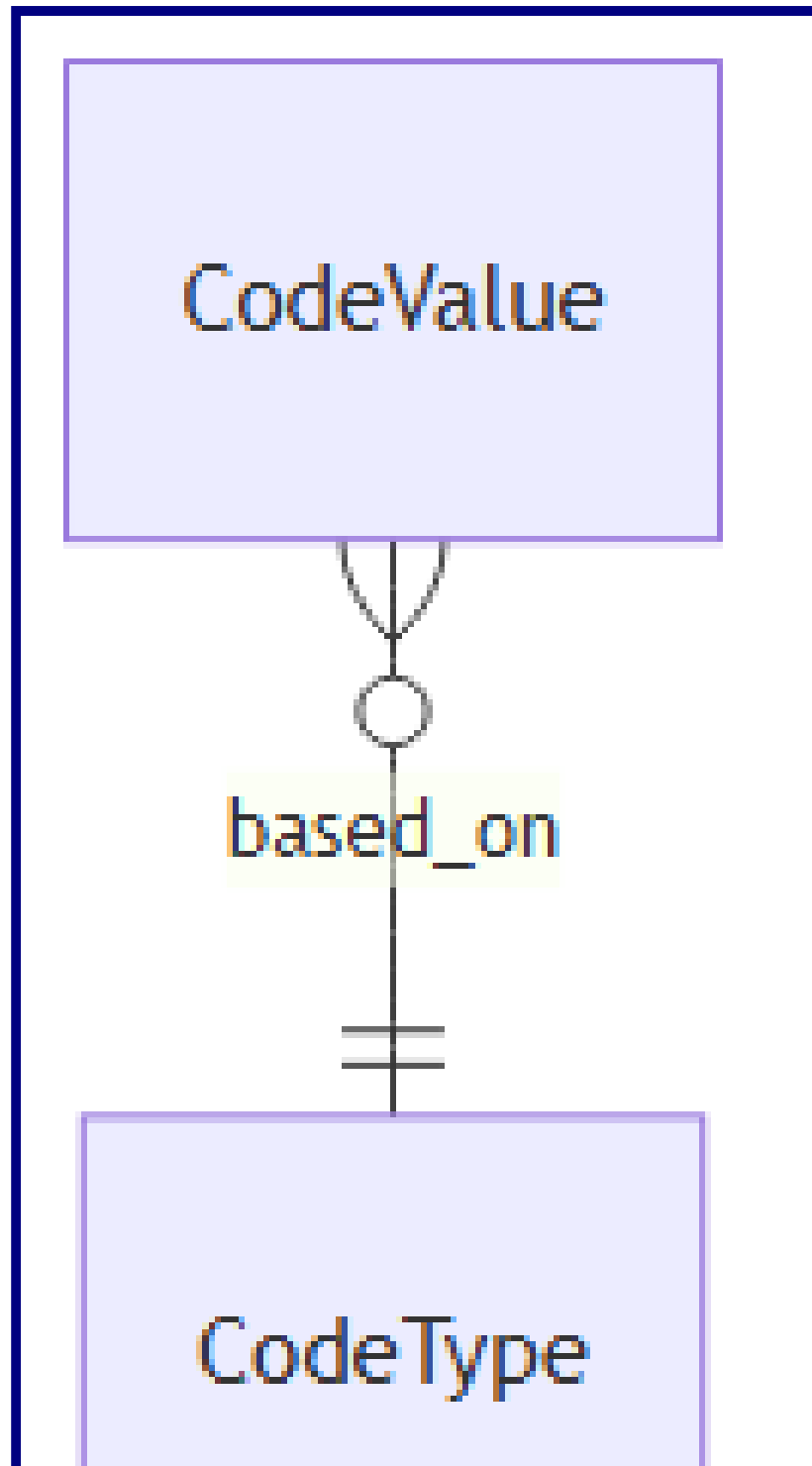
erDiagram

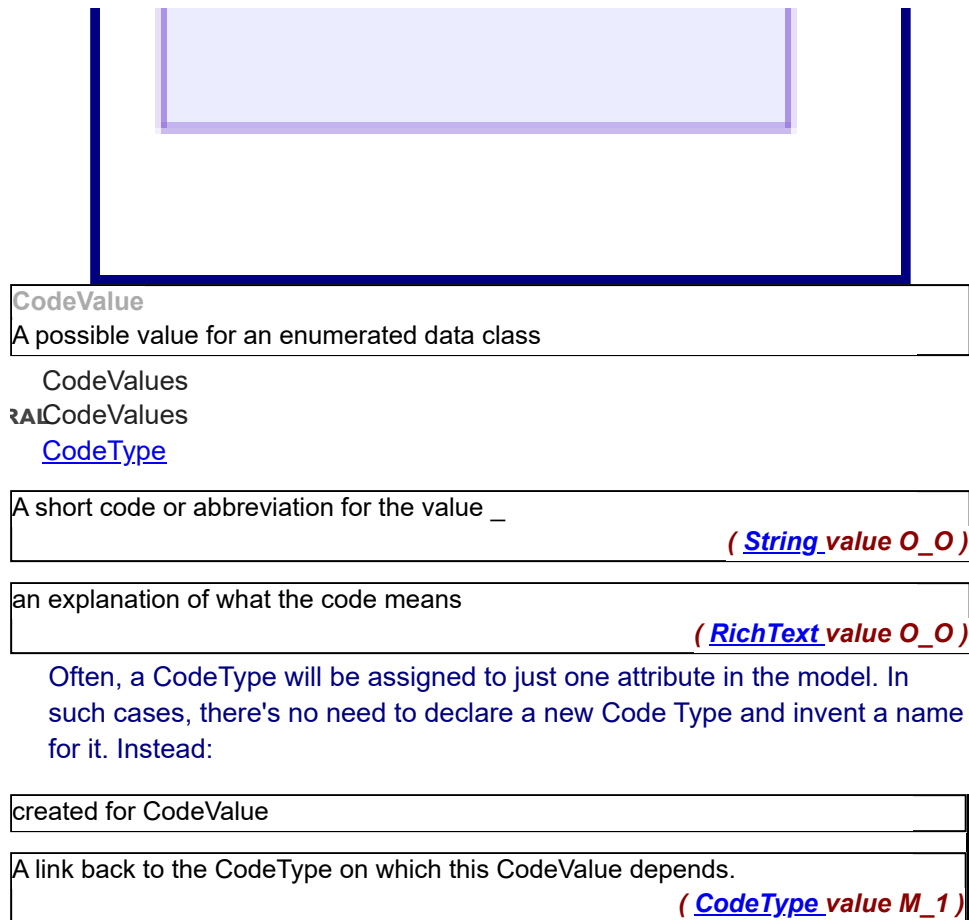
CodeValue }o--|| CodeType : based_on

Mermaid ER Diagram for CodeType - Live!



Mermaid ER Diagram for CodeType - PNG for mermaid





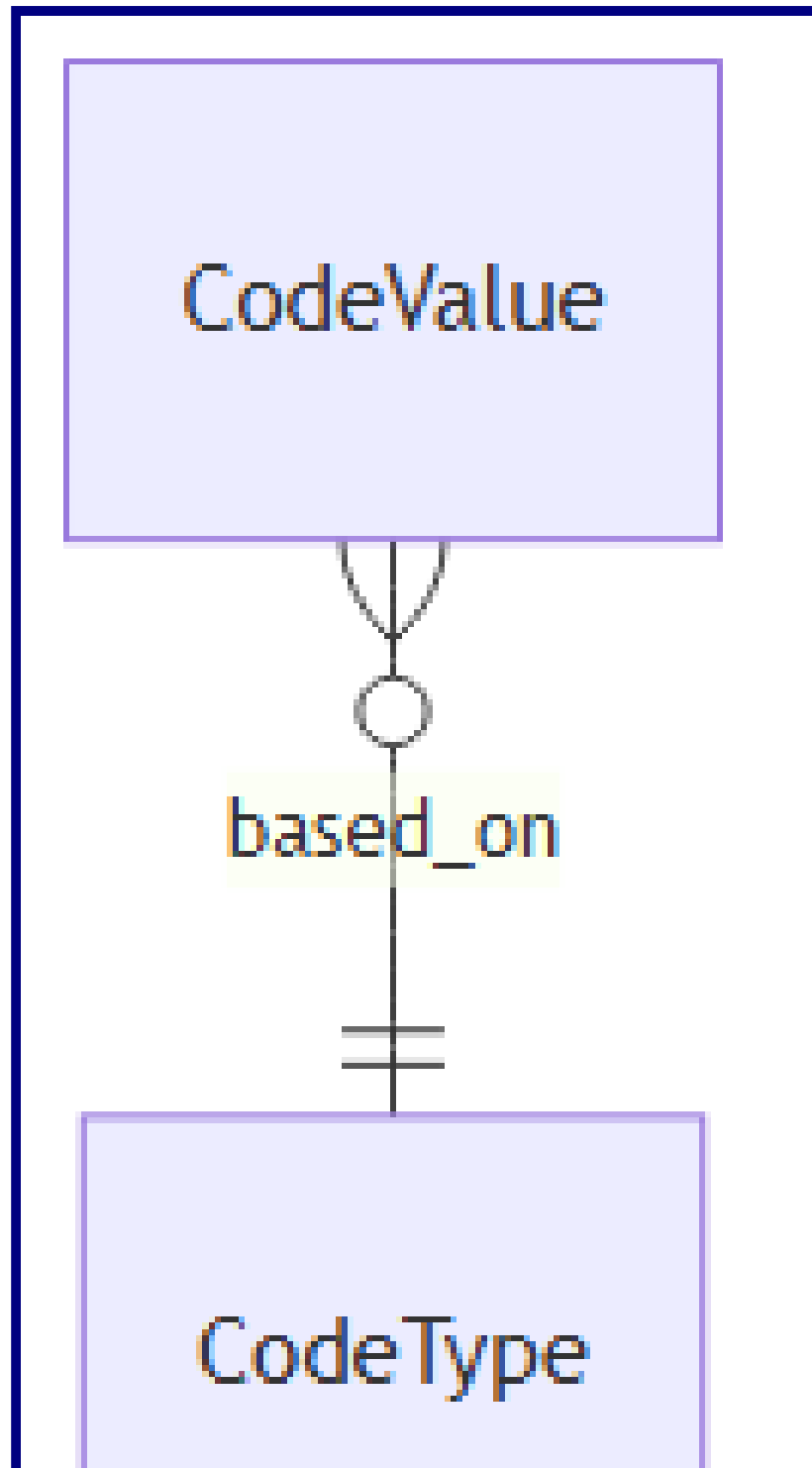
Mermaid ER Diagram for CodeValue - Inert

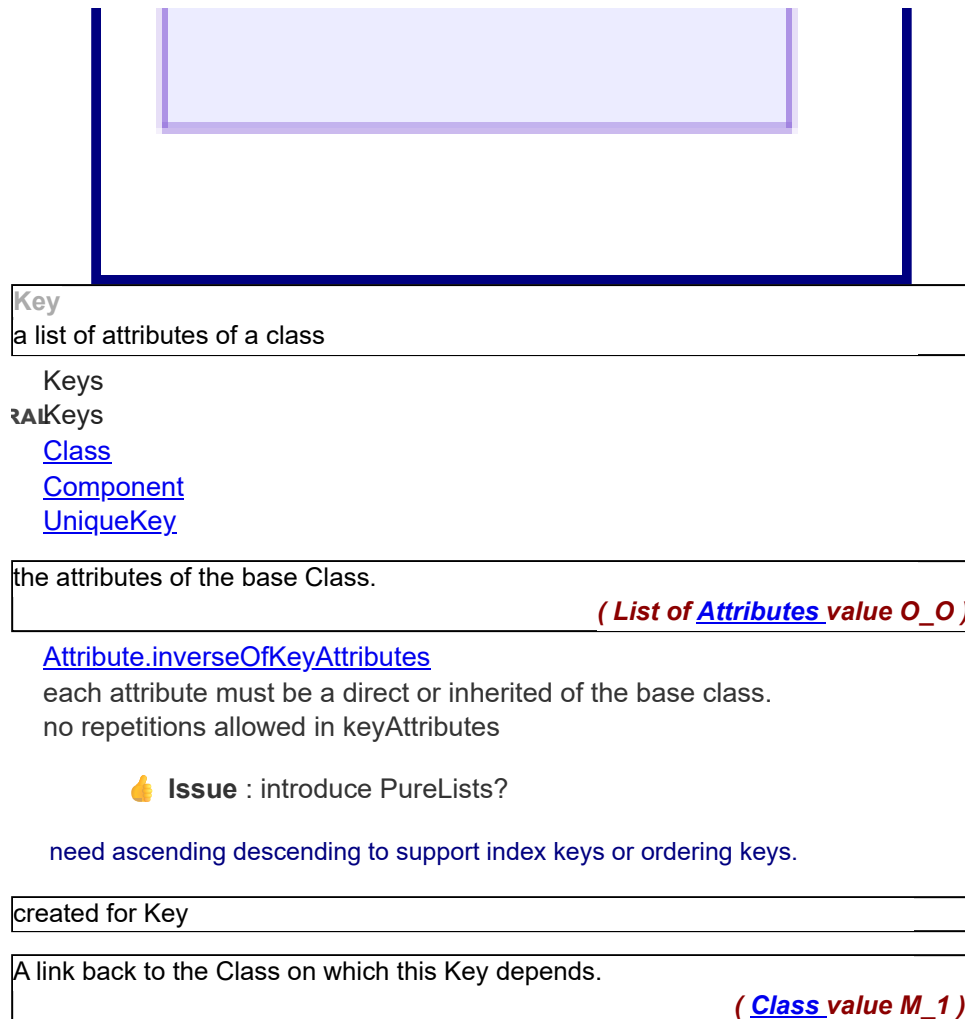
erDiagram

CodeValue }o--|| CodeType : based_on

Mermaid ER Diagram for CodeValue - Live!

Mermaid ER Diagram for CodeValue - PNG for mermaid





Mermaid ER Diagram for Key - Inert

erDiagram

```

Class_ ||--|| Component : subtype_of
Class_ ||--o| Class_ : basedOn
Key ||--|| Component : subtype_of
Key }o--|| Class_ : based_on
UniqueKey ||--|| Key : subtype_of
  
```

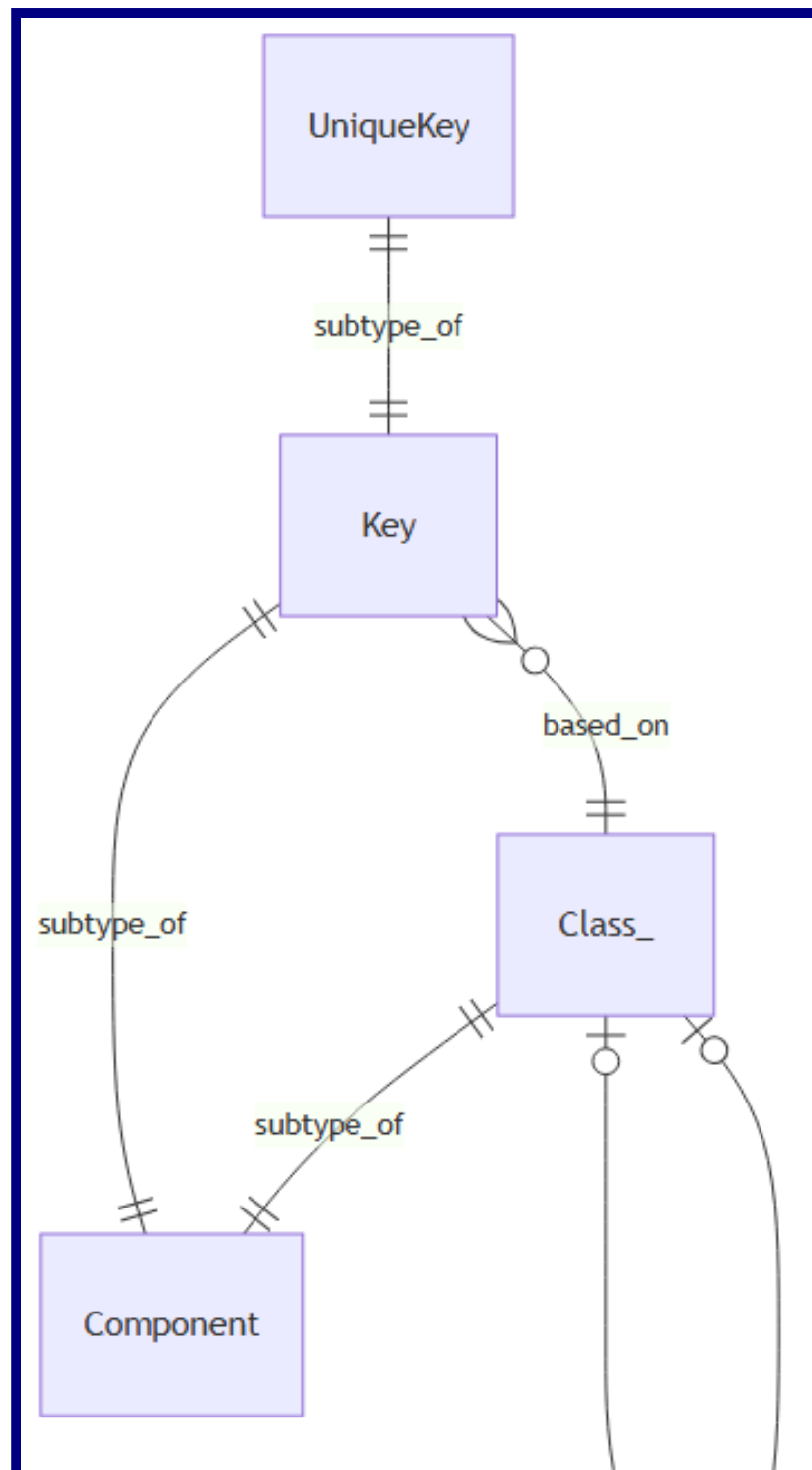
Mermaid ER Diagram for Key - Live!

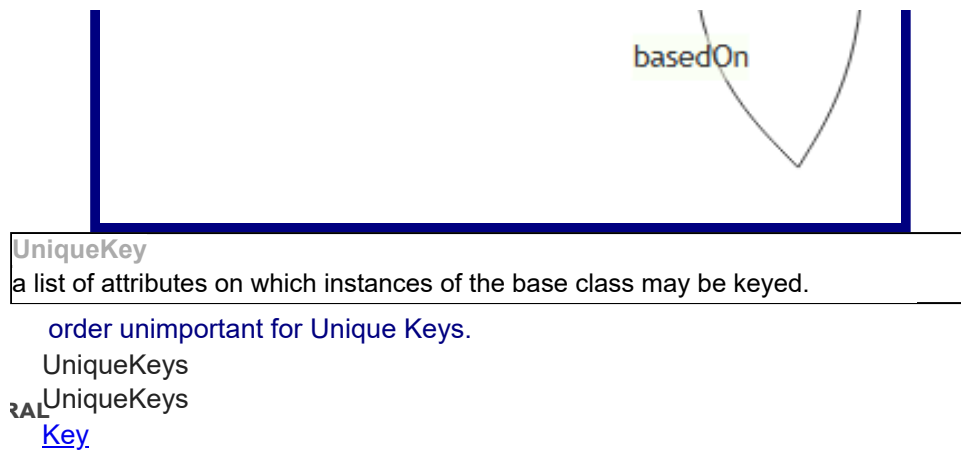
```

erDiagram
    Class_ ||--|| Component : subtype_of
    Class_ ||--o| Class_ : basedOn
    Key ||--|| Component : subtype_of
    Key }o--|| Class_ : based_on
  
```

Class_ : based_on UniqueKey ||--|| Key : subtype_of

Mermaid ER Diagram for Key - PNG for mermaid





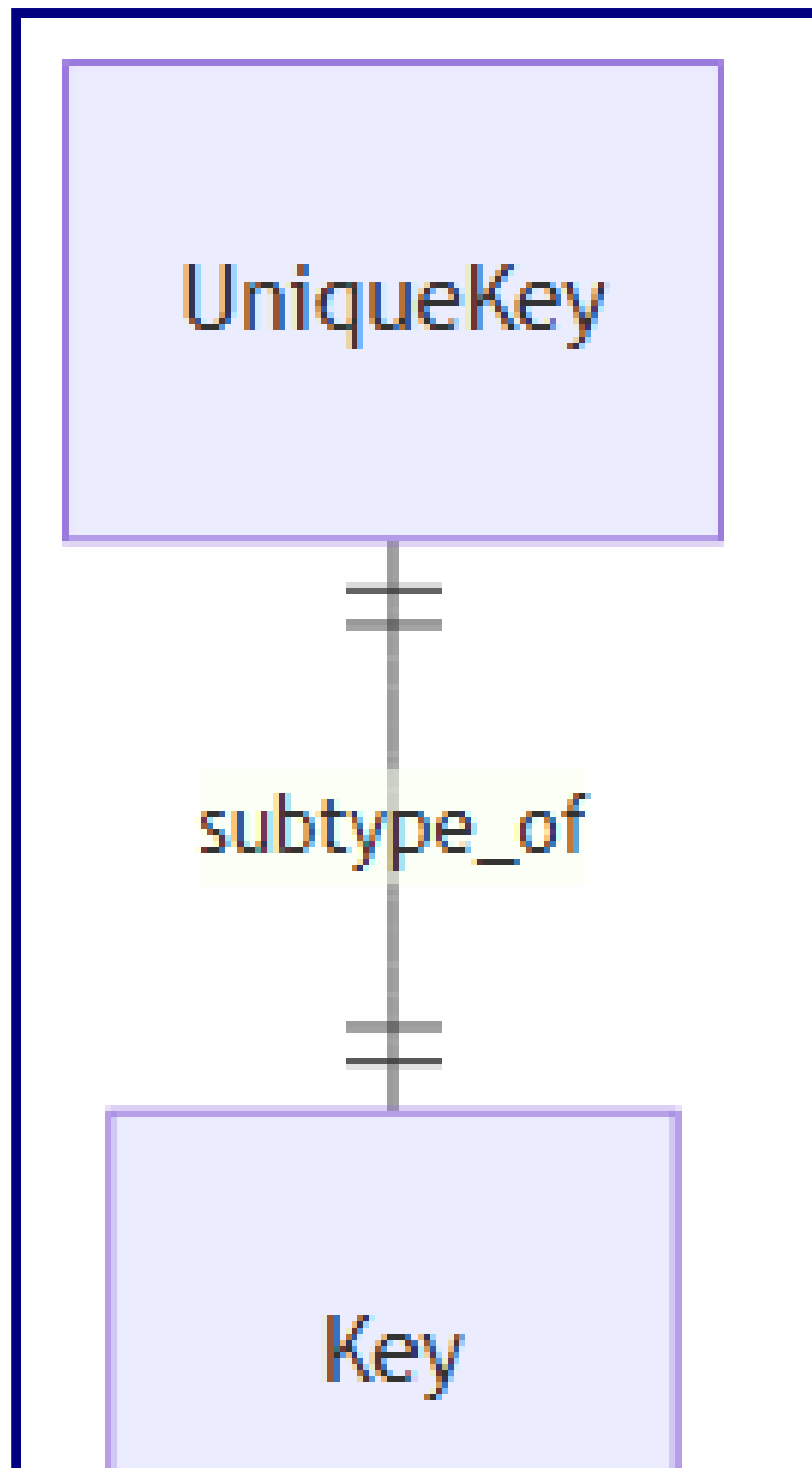
Mermaid ER Diagram for UniqueKey - Inert

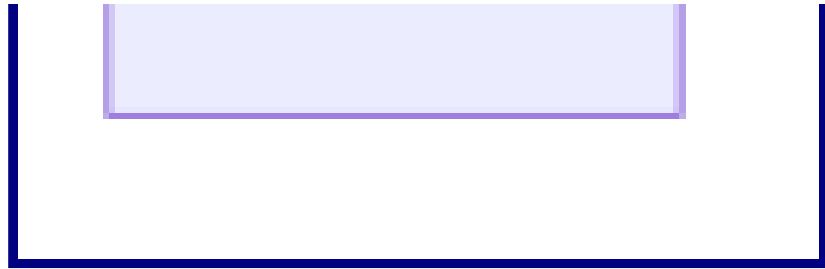
erDiagram
UniqueKey ||--|| Key : subtype_of

Mermaid ER Diagram for UniqueKey - Live!

erDiagram UniqueKey ||--|| Key : subtype_of

Mermaid ER Diagram for UniqueKey - PNG for mermaid





Attributes

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

AttributeSections
RAIAttributeSections
[Class](#)
[Attribute](#)
[Component](#)

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 section is optional or required, depending on how it is marked.

-
- But if the Attribute Section is optional each attribute in the section is only required if any attribute in the section is present.

created for AttributeSection
inverse attribute for Class.attributeSections from which this was implied. (Class value M_1) Class.attributeSections
A link back to the Class on which this AttributeSection depends. (Class value M_1)

Mermaid ER Diagram for AttributeSection - Inert

erDiagram

```

Class_ ||--|| Component : subtype_of
Class_ |o--o| Class_ : basedOn
AttributeSection ||--|| Component : subtype_of
AttributeSection }o--|| Class_ : based_on
Attribute ||--|| Component : subtype_of
Attribute }o--|| AttributeSection : based_on

```

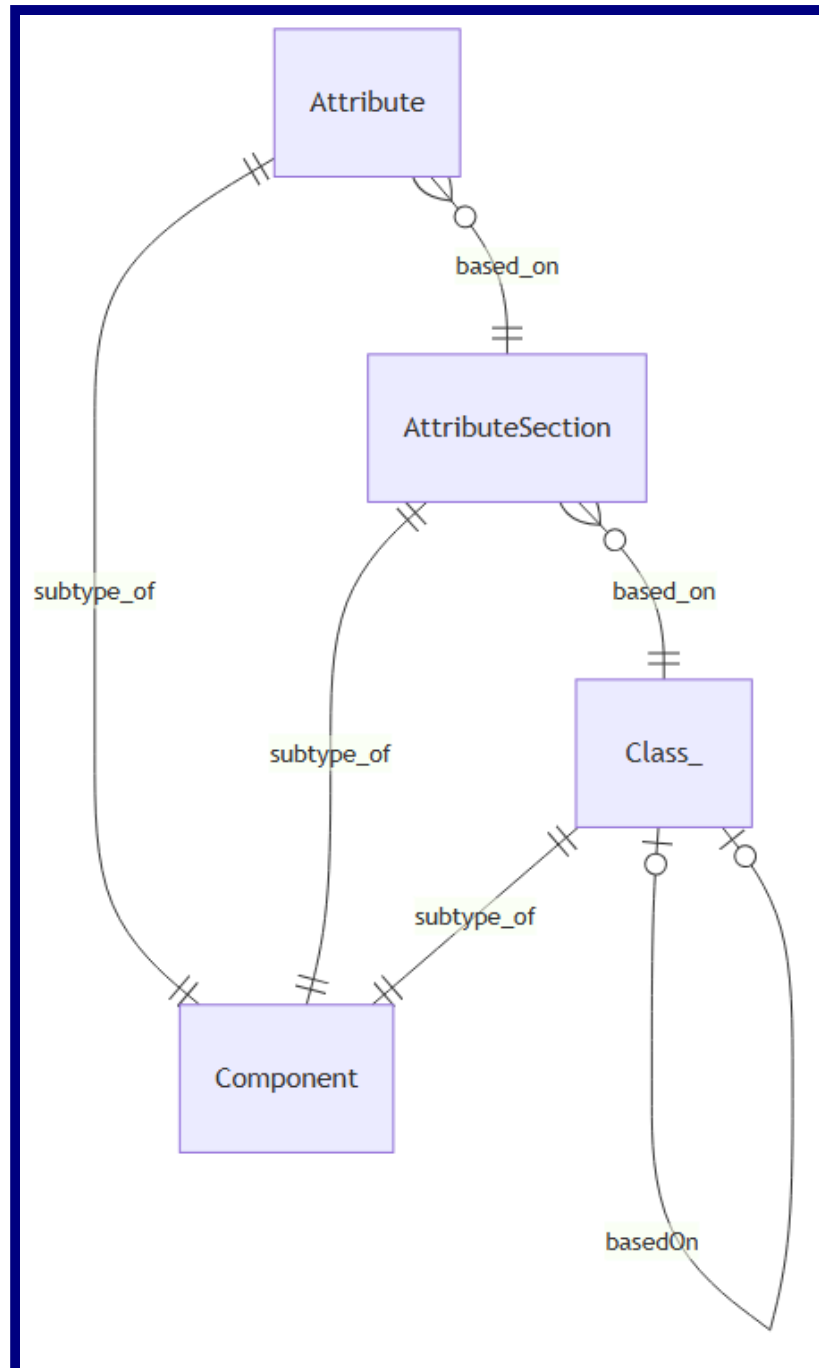
Mermaid ER Diagram for AttributeSection - Live!

```

erDiagram
Class_ ||--|| Component : subtype_of
Class_ |o--o| Class_ : basedOn
AttributeSection ||--|| Component : subtype_of
AttributeSection }o--|| Class_ : based_on
Attribute ||--|| Component : subtype_of
Attribute }o--|| AttributeSection : based_on

```

Mermaid ER Diagram for AttributeSection - PNG for mermaid



Attribute
A property or characteristic of a class

Attributes

[AttributeSection](#)

[AttributeConstraint](#)

[Component](#)

([LowerCamel](#) value O_O)
[Component.name](#)

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

But,

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

[the section below on Data Type Specifiers.](#)

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

*** False

The cardinality of the relationship represented by the attribute _
([Cardinality](#) value O_O)

*** 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.

[how this works with optionality](#)

([Boolean](#) value O_O)
true if the data type is a class or a simple collection of members of a class.

the class which contains, or would contain the inverse attribute	(<i>Optional</i> Class value O_O)
from the data type. Null unless attribute is invertible.	
	(<i>Optional</i> Attribute value O_O)
	(<i>Optional</i> Attribute value O_O)
The rule or formula for calculating the value, if no value is supplied Now running to a second line with the parenthetical on yet a third line	(<i>Optional</i> Derivation value O_O)
even when an Attribute has a default derivation, there's no guarantee that every instance will have an assigned value. Example needed.	
For derived attributes, the rule or formula for calculating the value _	(<i>Optional</i> Derivation value O_O)
on insert vs on access?	
Any validation rules specific to this attribute _	(<i>List of</i> Constraints value O_O)
from Class.constraints	
created for Attribute	
Inverse attribute for Class.attributes from which this was implied.	(Class value M_1)
Class.attributes	
Inverse attribute for Key.keyAttributes from which this was implied.	(Key value M_1)
Key.keyAttributes	
A link back to the AttributeSection on which this Attribute depends.	(AttributeSection value M_1)

Mermaid ER Diagram for Attribute - Inert

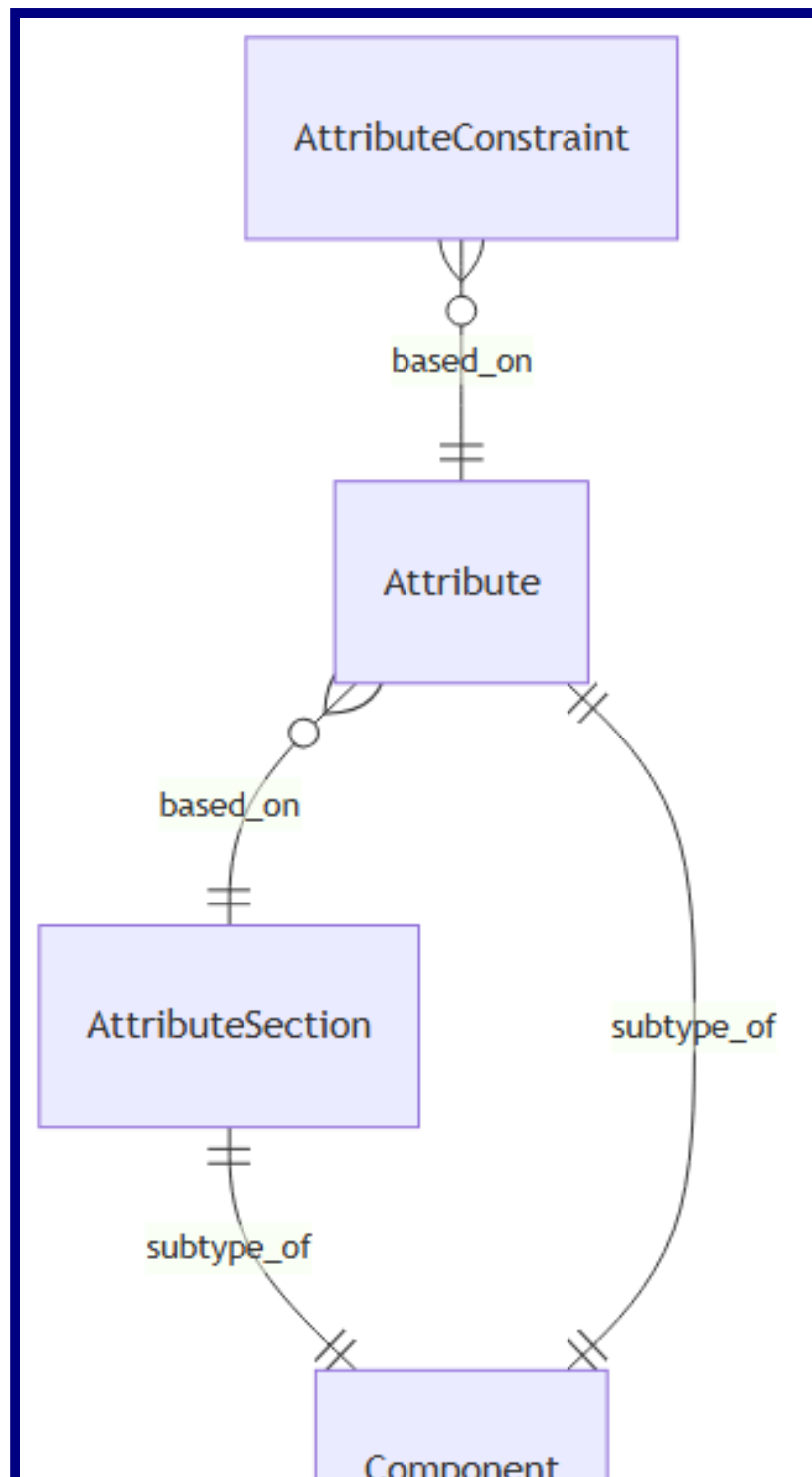
erDiagram

**AttributeSection ||--|| Component : subtype_of
Attribute ||--|| Component : subtype_of
Attribute }o--|| AttributeSection : based_on
AttributeConstraint }o--|| Attribute : based_on**

Mermaid ER Diagram for Attribute - Live!

```
erDiagram
    AttributeSection ||--|| Component : subtype_of
    Attribute ||--|| Component : subtype_of
    Attribute }o--|| AttributeSection : based_on
    AttributeConstraint }o--|| Attribute : based_on
```

Mermaid ER Diagram for Attribute - PNG for mermaid



Derivation
A rule or formula for deriving the value of an attribute
Derivations
An English language statement of the derivation rule _
(*RichText* value O_O)
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
Constraints
[Component](#)
[ClassConstraint](#) , [AttributeConstraint](#)
An English language statement of the constraint _
(*RichText* value O_O)
The formal expression of the constraint in a programming language, for example: OCL or Python. _
(*CodeExpression* value O_O)
(*Code* value O_O)

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

Mermaid ER Diagram for Constraint - Inert

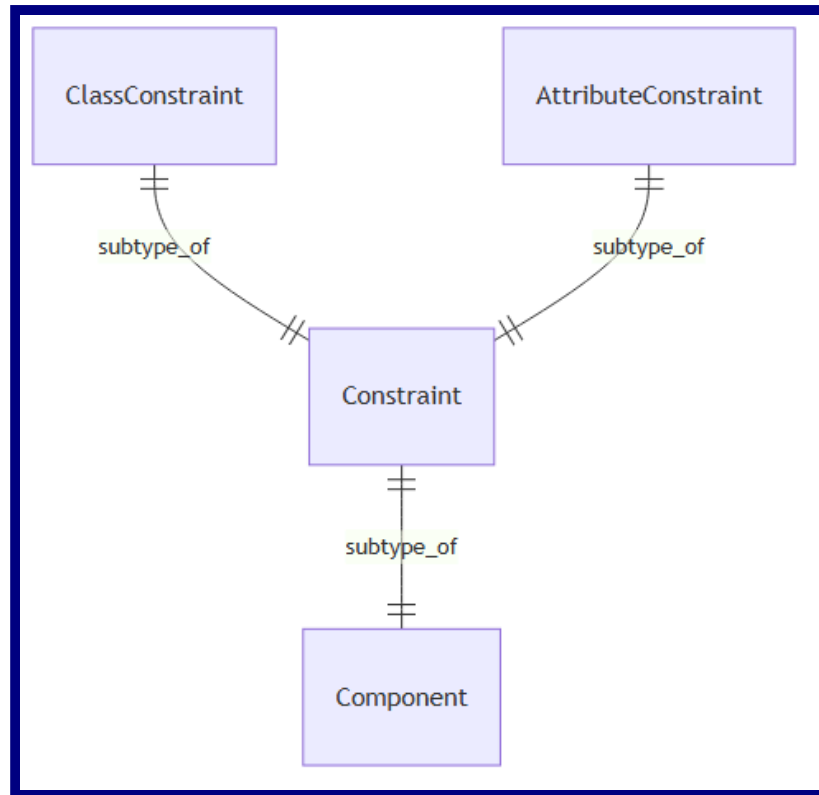
erDiagram

Constraint ||--|| Component : subtype_of
ClassConstraint ||--|| Constraint : subtype_of
AttributeConstraint ||--|| Constraint : subtype_of

Mermaid ER Diagram for Constraint - Live!

erDiagram Constraint ||--|| Component : subtype_of
ClassConstraint ||--|| Constraint : subtype_of
AttributeConstraint ||--|| Constraint : subtype_of

Mermaid ER Diagram for Constraint - PNG for mermaid



ClassConstraint

ClassConstraints
 3A1ClassConstraints
[Class](#)
[Constraint](#)

created for ClassConstraint

A link back to the Class on which this ClassConstraint depends.

([Class value M_1](#))

Mermaid ER Diagram for ClassConstraint - Inert

erDiagram

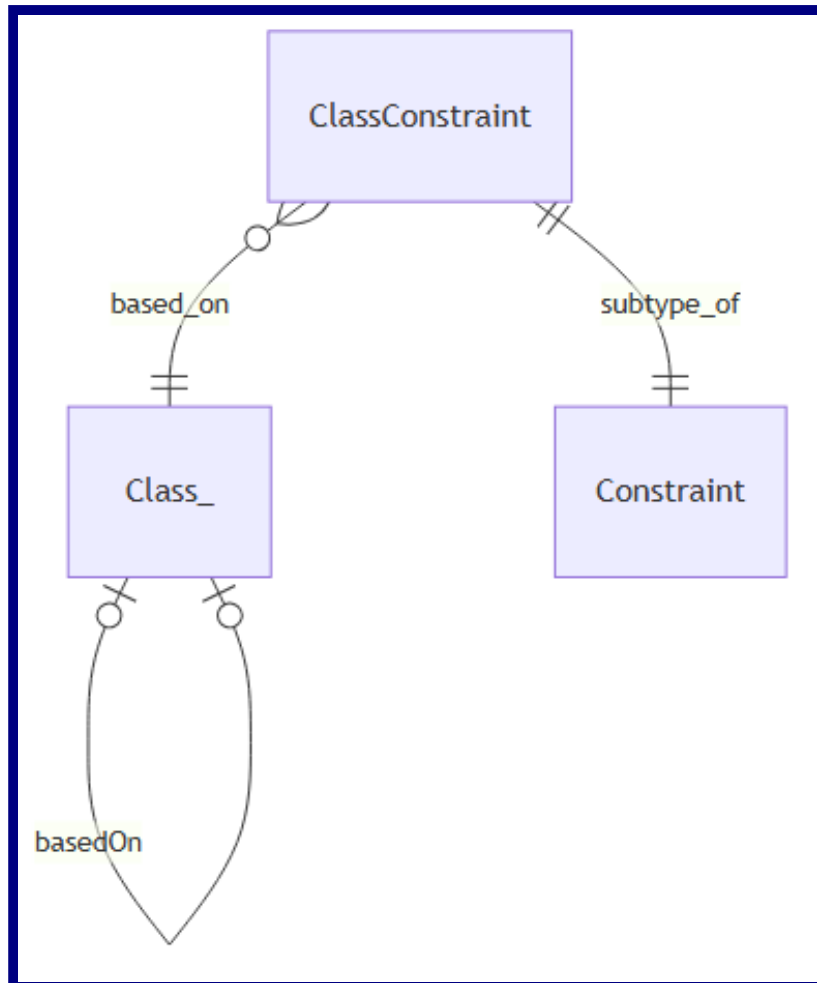
```

Class_ ||--o| Class_ : basedOn
ClassConstraint ||--|| Constraint : subtype_of
ClassConstraint }o--|| Class_ : based_on
  
```

Mermaid ER Diagram for ClassConstraint - Live!

```
erDiagram
    Class_ ||--o| Class_ : basedOn
    ClassConstraint ||--o| Class_ : based_on
    Constraint ||--o| Class_ : subtype_of
```

Mermaid ER Diagram for ClassConstraint - PNG for mermaid



AttributeConstraint

AttributeConstraints
 AttributeConstraints
[Attribute](#)
[Constraint](#)

created for AttributeConstraint

A link back to the Attribute on which this AttributeConstraint depends.
([Attribute value M_1](#))

Mermaid ER Diagram for AttributeConstraint - Inert

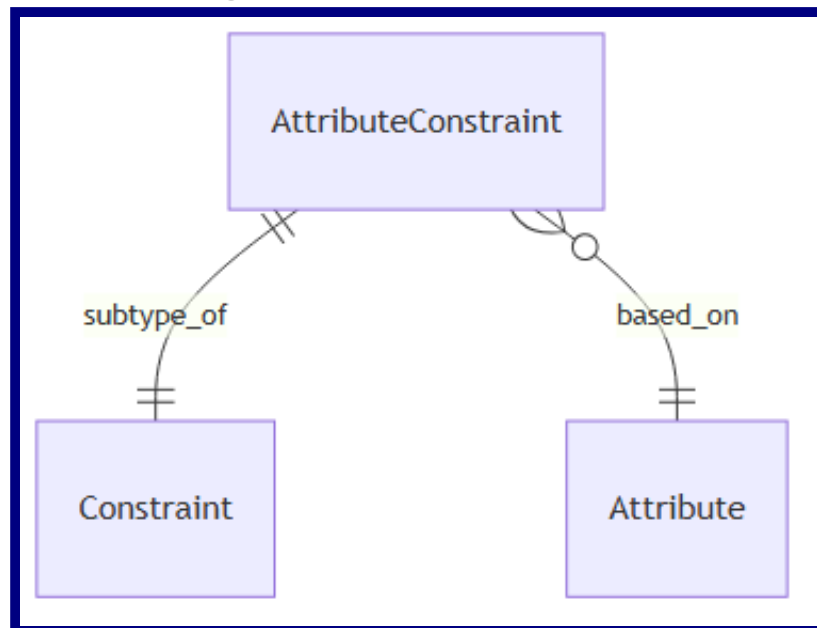
erDiagram

AttributeConstraint ||--|| Constraint : subtype_of
AttributeConstraint }o--|| Attribute : based_on

Mermaid ER Diagram for AttributeConstraint - Live!

erDiagram AttributeConstraint ||--|| Constraint : subtype_of
AttributeConstraint }o--|| Attribute : based_on

Mermaid ER Diagram for AttributeConstraint - PNG for mermaid



Methods

Method
A behavior or operation associated with a class
Methods Component
The input parameters of the method _ (<i>List of Parameters value O_O</i>) Parameter.inverseOfParameters
The data type of the value returned by the method _ (<i>DataType value O_O</i>)
created for Method
Inverse attribute for Class.methods from which this was implied. (<i>Class value M_1</i>) Class.methods

Mermaid ER Diagram for Method - Inert

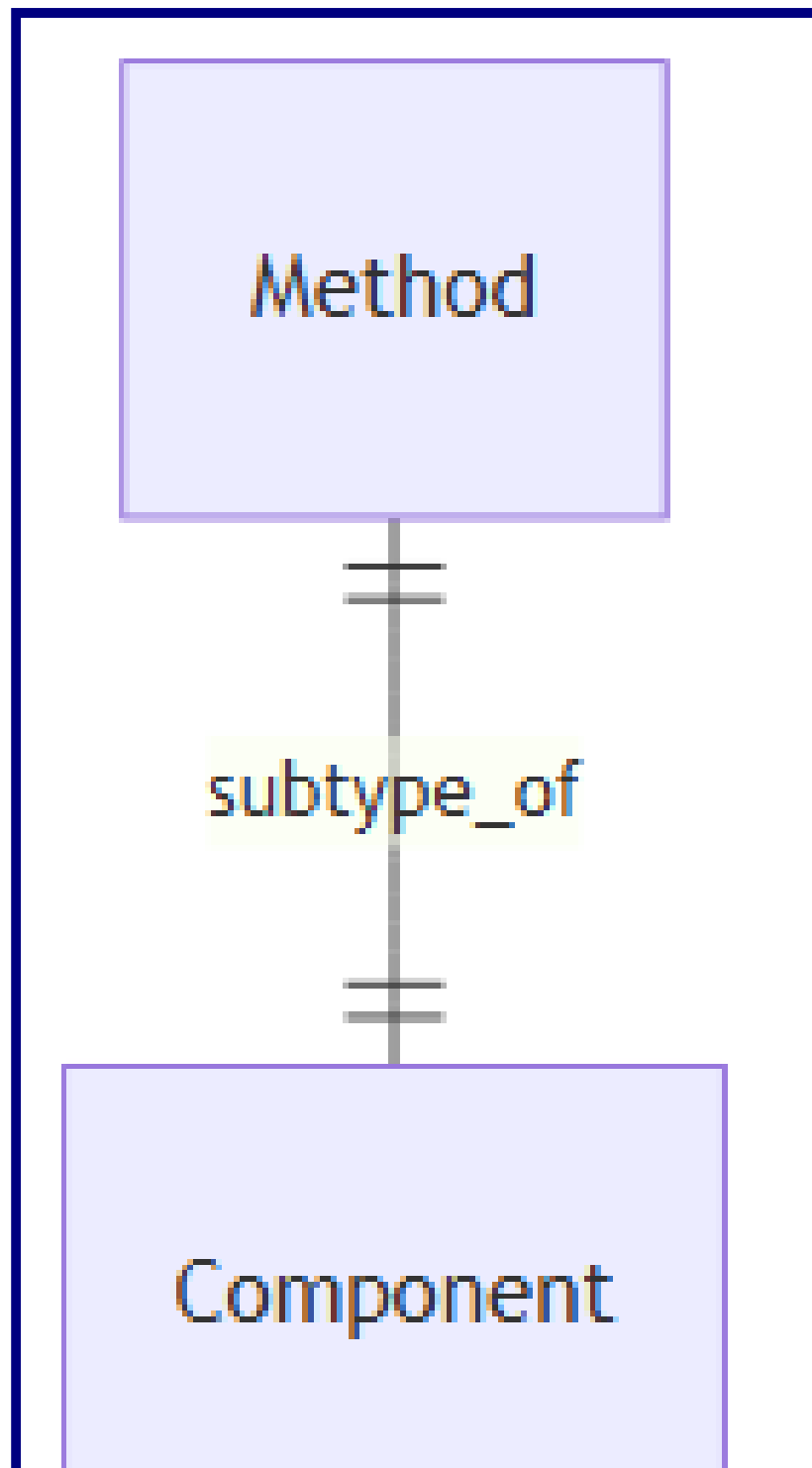
erDiagram

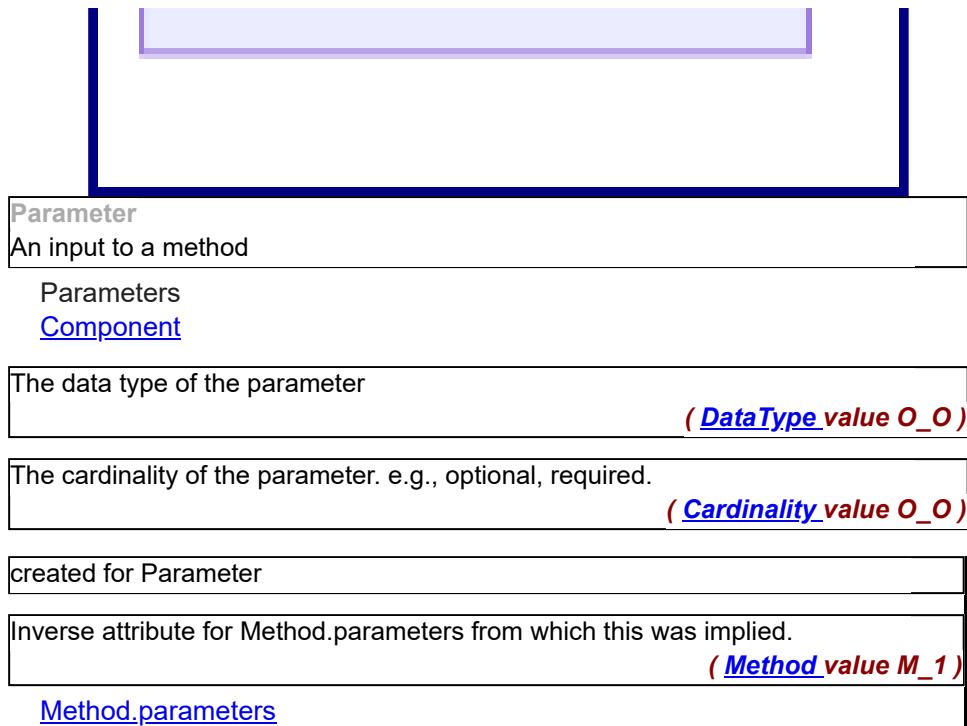
Method ||--|| Component : subtype_of

Mermaid ER Diagram for Method - Live!

erDiagram Method ||--|| Component : subtype_of

Mermaid ER Diagram for Method - PNG for mermaid





Mermaid ER Diagram for Parameter - Inert

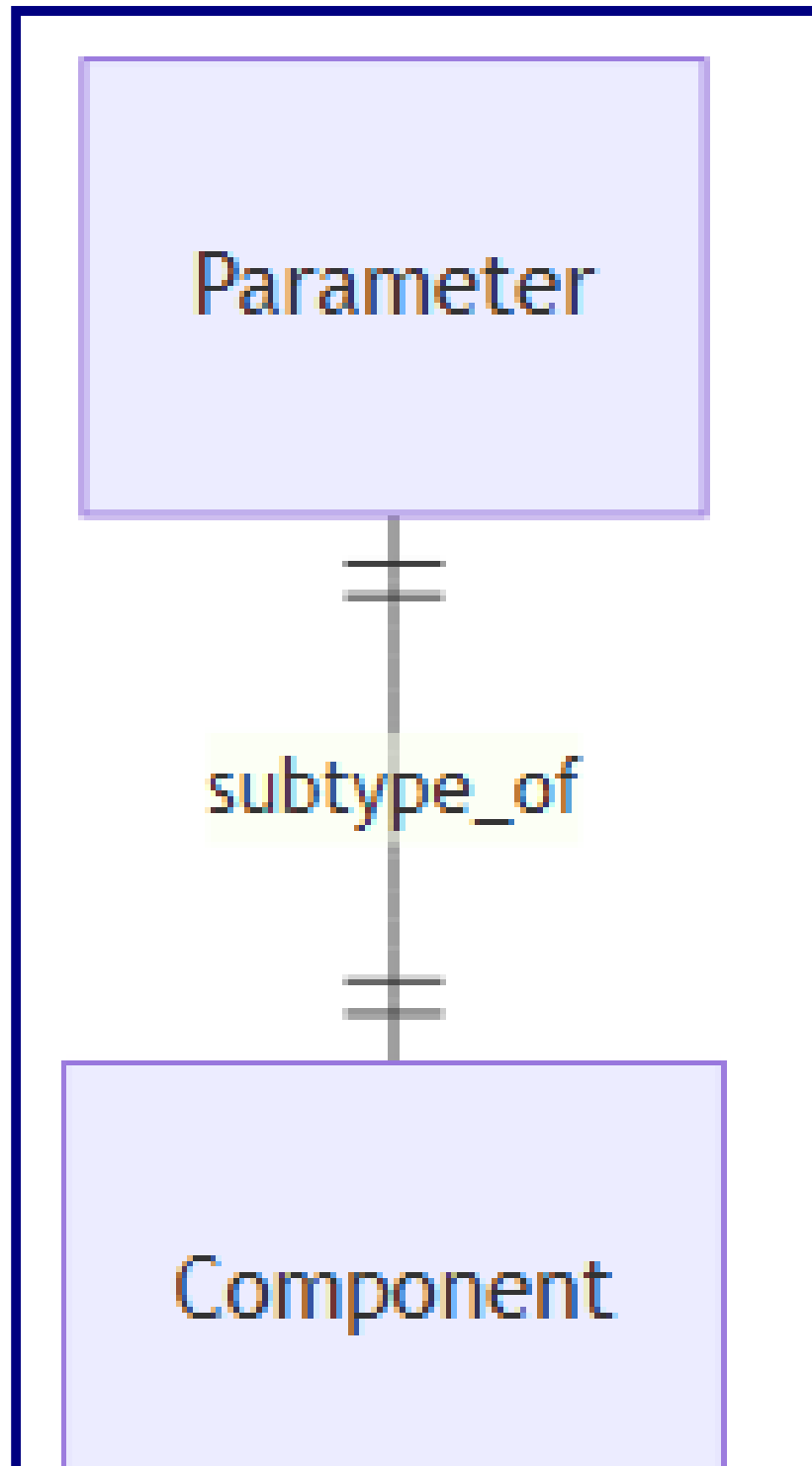
erDiagram

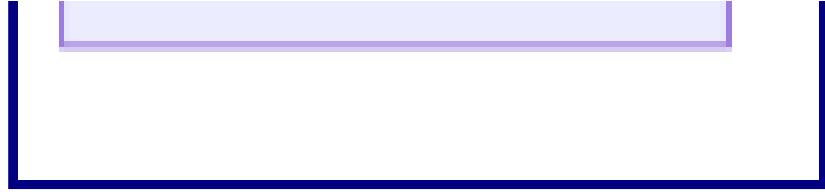
Parameter ||--|| Component : subtype_of

Mermaid ER Diagram for Parameter - Live!

erDiagram Parameter ||--|| Component : subtype_of

Mermaid ER Diagram for Parameter - PNG for mermaid





Trivial Data Types

Message

Messages
❗ Messages

Message is trivial; no diagram

CodeExpression

CodeExpressions
❗ CodeExpressions

the programming language
([Code](#) value O_O)

❗ OCL, Object Constraint Language
Java, Java

([String](#) value O_O)

CodeExpression is trivial; no diagram

DataType

DataTypes
❗ DataTypes

DataType is trivial; no diagram

SimpleDataTypeSubtpeOfDataType

SimpleDataTypeSubtpeOfDataTypes
❗ SimpleDataTypeSubtpeOfDataTypes

([Class](#) value O_O)

[Class.inverseOfCoreClass](#)

SimpleDataTypeSubtpeOfDataType is trivial; no diagram

ComplexDataType

ComplexDataTypes
❗ ComplexDataTypes

([AggregatingOperator](#) value O_O)

([List of DataTypes](#) value O_O)

ComplexDataType is trivial; no diagram

AggregatingOperator

AggregatingOperators
RAIAggregatingOperators

([Code](#) value O_O)

SetOf
ListOf
Mapping

([Integer](#) value O_O)

([Template](#) value O_O)

AggregatingOperator is trivial; no diagram

Trivial Low level Data Types

insert Camel Case.md

Emoji

Emojis
RAIEmojis

Emoji is trivial; no diagram

String

Strings
RAIStrings

String is trivial; no diagram

CamelName

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

CamelNames
RAICamelNames

[String](#)
[UpperCamel](#), [LowerCamel](#)

([String_value O_O](#))

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

- *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.

CamelName is trivial; no diagram

UpperCamel

a CamelName that begins with a capital letter

[_ "Customer", "ProductCategory", "PaymentMethod"](#)
content begins with an upper case letter.
UpperCamels
RAIUpperCamels
[CamelName](#)

UpperCamel is trivial; no diagram

LowerCamel

a CamelName that begins with a lower case letter

"firstName", "orderTotal", "shippingAddress"

content begins with a lower case letter.

LowerCamels

RAI LowerCamels

[CamelName](#)

LowerCamel is trivial; no diagram

QualifiedCamel

an expression consisting of Camel Names separated by periods

QualifiedCamels

RAI QualifiedCamels

[String](#)

content consists of CamelNames, separated by periods. Each of the camel names must be Upper Camel except, possibly, the first.

QualifiedCamel is trivial; no diagram

RichText

A string with markup for block level formatting.

RichTexts

RAI RichTexts

[String](#)

[OneLiner](#)

the string content

([String](#) *value* **O_O**)

the rich text coding language used

([Code](#) *value* **O_O**)

HTML
Markdown

RichText is trivial; no diagram

OneLiner

String with markup for line level formatting.

OneLiners
↻AllOneLiners
[RichText](#)

the string content

([String_value O_O](#))

[RichText.value](#)
must not contain a line break or new line character
A line can't span two lines

OneLiner is trivial; no diagram

PrimitiveType

A basic, built-in data type

PrimitiveTypes
↻AllPrimitiveTypes
[String](#), [Integer](#), [Decimal](#), [Boolean](#), [Date](#), [Time](#), [DateTime](#)

PrimitiveType is trivial; no diagram

String

Strings
↻AllStrings
[PrimitiveType](#)
[CamelName](#), [QualifiedCamel](#), [RichText](#)

String is trivial; no diagram

Integer

Integers
↻AllIntegers
[PrimitiveType](#)

Integer is trivial; no diagram

Decimal

Decimals
↻AllDecimals
[PrimitiveType](#)

Decimal is trivial; no diagram

Boolean

Booleans
rAIBooleans
[PrimitiveType](#)

Boolean is trivial; no diagram

Date

Dates
rAIDates
[PrimitiveType](#)

Date is trivial; no diagram

Time

Times
rAITimes
[PrimitiveType](#)

Time is trivial; no diagram

DateTime

DateTimes
rAIDateTimes
[PrimitiveType](#)

DateTime is trivial; no diagram

CodingLanguage

CodingLanguages
rAICodingLanguages

CodingLanguage is trivial; no diagram

Cardinality

Cardinalities
rAICardinalities

Cardinality is trivial; no diagram

TemplateLanguage

TemplateLanguages

RAITemplateLanguages

TemplateLanguage is trivial; no diagram

Template

Templates
RAITemplates

Template is trivial; no diagram

Code

Codes
RAICodes

Code is trivial; no diagram

Annotation Types Used

These are the recognized Annotation Types for the LDM model.

And this is how you register the AnnotationType 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."

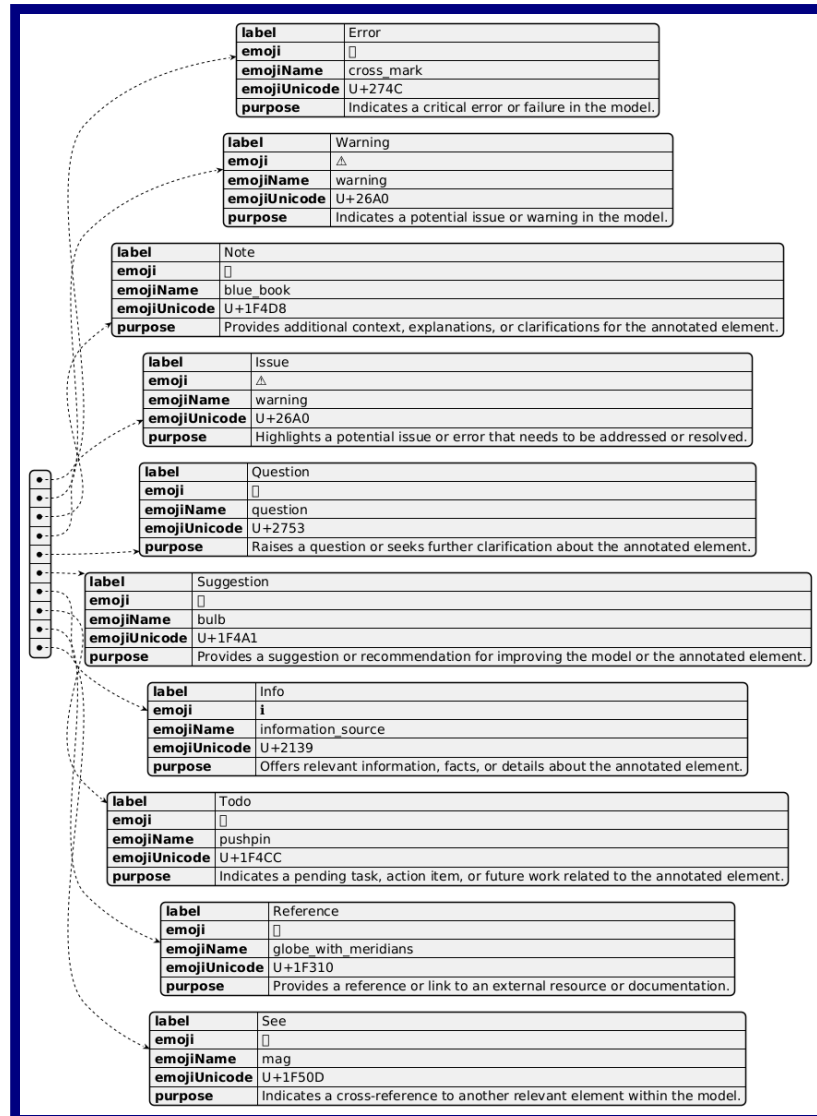

},
{
"label": "Question",
"emoji": "❓",
"emojiName": "question",
"emojiUnicode": "U+2753",
"purpose": "Raises a question or seeks further clarification about the annotated element."
},
{
"label": "Suggestion",
"emoji": "💡",
"emojiName": "bulb",
"emojiUnicode": "U+1F4A1",
"purpose": "Provides a suggestion 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 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,📘,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 or error that needs to be addressed or resolved.
4	Question	❓	question	U+2753	Raises a question or seeks further clarification about the annotated element.
5	Suggestion	💡	bulb	U+1F4A1	Provides a suggestion or recommendation for improving the model or the annotated element.
6	Info	📘	information_source	U+2139	Offers relevant information, facts, or details about the annotated element.
7	Todo	📌	pushpin	U+1F4CC	Indicates a pending task, action item, or future work related to the annotated element.
8	Reference	🌐	globe_with_meridians	U+1F310	Provides a reference or link to an external resource or documentation.
9	See	🔍	mag	U+1F50D	Indicates a cross-reference to another relevant element within the model.

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