GLIF

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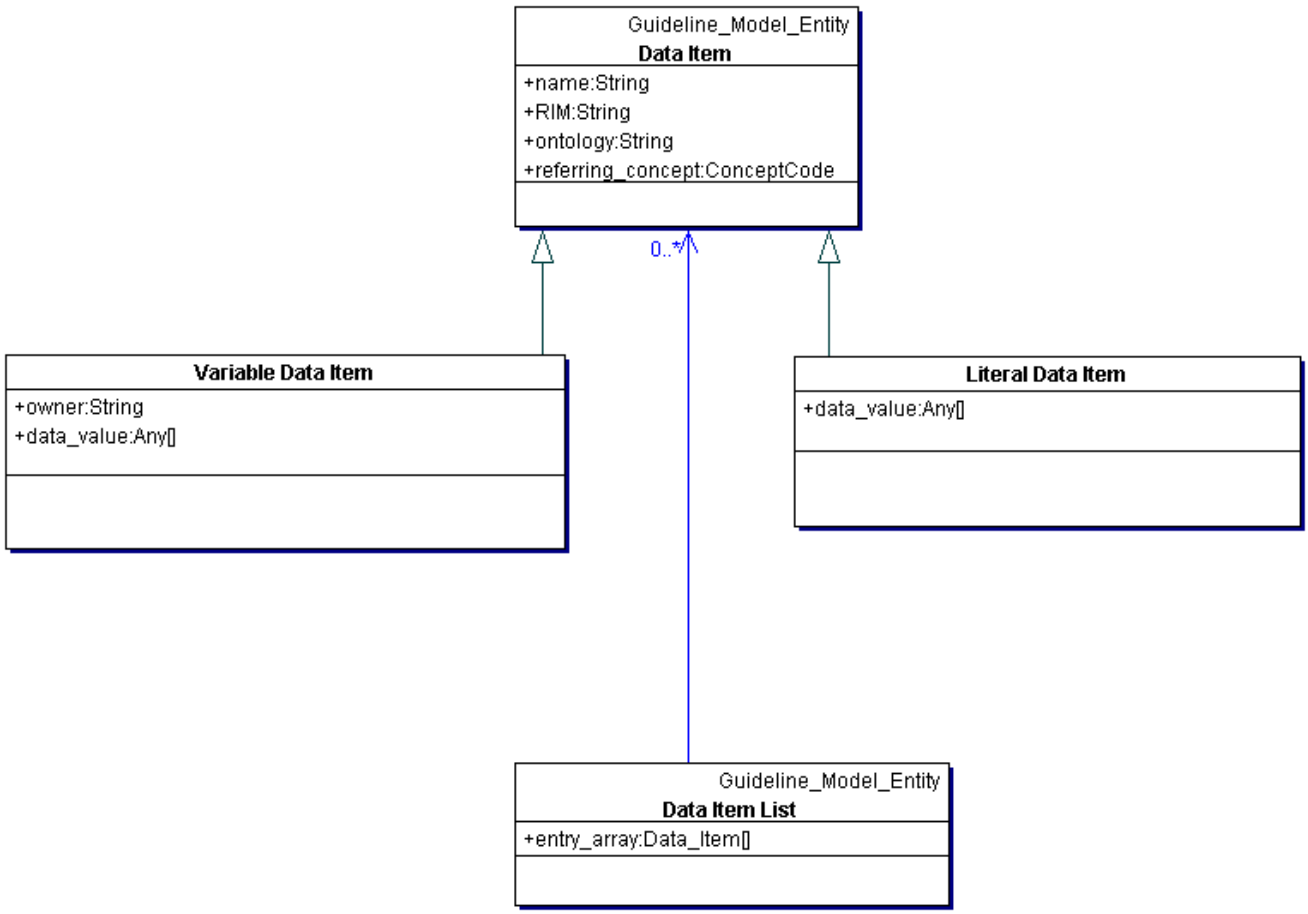
Package *Data*

Classes

class Data.Data_Item
class Data.Literal_Data_Item
class Data.Data_Item_List
class Data.Variable_Data_Item

Class Diagram



Description:
Decision steps direct flow from one *guideline step* to another. A *decision step* may link a *guideline step* to any other *guideline step*. A *decision step* contains a condition, which is an expression. The *condition's* value determines the control flow to one of a set of possible *guideline steps*, which are specified by the *options* of the *decision step*. The *condition* is compared, using an *operator* to the *options.condition_value*. If the *condition* matches one of the *decision options* then the control can flow, in the case of a choice step, and must flow, in the case of case step, to the *guideline step* that is specified by that *decision option's destination*. If the *condition* does not match any of the set of values specified by the *decision options*, or, if available data do not allow evaluation of the *condition*, then the control flows to the default destination *guideline step*.

When a guideline step finished its execution and the control flow is about to pass to the next step, then, if the next step has associated triggering events, then this next step is executed only after one of its triggering event occurred.

Purpose:
The *conditional step* used an extended Boolean model. This made it cumbersome and error-prone to represent criteria that do not have a true-or-false outcome (e.g., what is the patient's age category: neonate, infant, toddler, child, adolescence, adult, elderly). Therefore, the *case step* replaced the *conditional step* by allowing a conditional choice to be made among several alternative *guideline steps*.

Considerations:
1.The operator was added so that different comparisons would be possible. For example the operator may be "=", or may be "in" to represent a comparison to an interval (age in (30,40) as opposed to age eq > 30)

Class Detail

Class *Data.Data_Item*

Inherits from:

Guideline_Model_Entity

Description:
Data Item is a symbol which stores value that may be patient data reffered to by the guideline or data computed or created by guidelines.

Purpose:
Data items are needed for the expression in *decision step* and the action spec in *action step*. Operands in expressions can be data items and data items can be created/instancianted in *get and assignment statements*.

Considerations:
Data item is a supr class for *variable data item* and *literal data item*. This class was created to capture the common attributes shared by the *variable data item* and *literal data item*.

Attributes

name
ontology
referring_concept
RIM

Attribute Detail

name

Data type: String
Multiplicity: 1
description: Name is what users want to refer to a data item. Referring to the same concept, users may choose different names for a data item. For example, in medical record, 'sex' and 'gender' can refer to the same concept. Also, sometimes, a user may want to use a abbreviation instead of the whole concept name.
Level: A, B, C

ontology

Data type: String
Multiplicity: 1
description: Ontology indicates what onotlogy the concepts which are referred to by the data item belong to. When no Ontology is used or no map can be found for the name of the data item, this attribute will take the default value of "unknown". Otherwise the value of the attribute will be the identifier of the ontology.
Level: B, C

referring_concept

Data type: ConceptCode
Multiplicity: 1
description: Referring concept indicates what concept the data item refers to. Each data item should refer to some concept. The concept can represent simple data types such as integer or it can be more complex types like 'medication order'. The concepts will be referred to by their codes. The term dictionary in the medical ontology will determine the code of a concept.One data item can only refer to one concept, but multiple data items may refer to the same concept. When no Ontology is used or no map can be found for the name of the data item, this attribute will take the default value of "unknown". Otherwise the value of the attribute will be the identifier of the cocnept.
Level: B, C

RIM

Data type: String
Multiplicity: 1
description: RIM indicates what data model the data item will use for value representation. When no RIM is used, this attribute will take the default value of "unknown". Otherwise the value of the attribute will be the identifier of the RIM model.
Level: B, C

Class *Data.Data_Item_List*

Inherits from:

Guideline_Model_Entity

Description:
Data Item List is a list of data items used by the guideline.

Purpose:
Data item list is used to store all the data items in a guideline. Putting all data items in list makes it easier to access and update data items.

Considerations:
Each *data item* need to be stored in the guideline. Having a list instead of placing the *data items* before where they are used

Attributes

entry_array

Attribute Detail

entry_array

Data type: Array of data items
Multiplicity: 1
description: this is a simple array and the elements in the array are data items.
Level: B, C

Class *Data.Literal_Data_Item*

Inherits from:

Data.Data_Item

Description:
Literal data Item is a *data Item* with fixed values.

Purpose:
Literal data item is one way to refer to a absract concept object with no specific instance. Although this does not imply the concept can not have any instance, the *Literal data item* that refers to the concept will not have any data value. It can also be used represent a specific instance of a concept.

Considerations:
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Attributes

data_value

Attribute Detail

data_value

Data type: Any (Data type must be the type specified by the referring_concept)
Multiplicity: 0...n
description: Data value stores the value of the literal data item. Data value of a data item will be modeled by zero or one instance of data model objects in the RIM model. The data model object of the instance is that of the concept the data item refers to. No all literal data items has instance. In some cases, a literal represents an instance of a concept instead of the concept itself. So, in such cases, a literal can have a data value of one instance. For example, in 'height > 5 foot 4 inch' 5 foot 4 inch refers to a concept 'length', but it is an instance of the concept instead of the concept itself. When no value is specified, this attribute will be an empty list.
Level: B, C

Class *Data.Variable_Data_Item*

Inherits from:

Data.Data_Item

Description:
Variable data Item is a *data Item* with mutable values.

Purpose:
Variable data item is used to store patient data such as lab test results for calculation or evaluation. It can also be used store data such 'risk' which are created and computed by the guideline.

Considerations:
The same symbol may be used through a guideline and its value may change as a result of retrieval of new data and new assigment.

Attributes

data_value
owner

Attribute Detail

data_value

Data type: Any (Data type must be the type specified by the referring_concept)
Multiplicity: 0...n
description: Data value stores the value of the variable data item. Data value of a variable data item will be modeled by a list of instances of data model objects in the RIM model. The data model object of the instance is that of the concept the data item refers to. For example, a variable data item 'albumin' may refer to 'Serum Albumin Test Result'. So the data value is list of instances of 'Serum Albumin Test Result' object in the RIM. When no value is specified, this attribute will be an empty list.
Level: B, C

owner

Data type: String
Multiplicity: 1
description: Owner indicates who the patient is when patient data or other data specific to a particular patient. The reason to specify this is because sometimes even in one guideline, data from multiple patient will be mentioned although most guideline we have seen so far are specific for one patient. For example, clinical trial guidelines sometimes refer to a group of patients. For individual patients, we may be able to use some kind of MRN to distinguish one patient from another. For groups of patient, since we may not know or need to know each patient's identity, we propose to use free text to describe such groups. When no owner is specified, this attribute will take the default value of "unknown". Otherwise the value of the attribute will be the identifier of the owner.
Level: B, C