Changes made to Arden grammar to develop the new expression syntax

- Defined id (variable name) to optionally include a dot separator (e.g. cough.critical_time.low)
- Defined function call to be id.id(...) (e.g., Math.sin(3.14159))
- We do *not* yet have a way of declaring a class and its members. We believe it is necessary to have input from others on this.
- Got rid of interval as basic type. It can be reincarnated as a built-in class of the expression language
- Got rid of months and year as duration units but duration is still a basic type
- Extract <duration> functions will be moved to duration class
- Got rid of many synonyms from Arden
- Got rid of many temporal operators like latest, earliest, is before, was before, are before, were before etc. Some of these could become member functions of the relevant class(es).
- Replaced list operators and functions with List class functions
- Made "is Boolean", etc to "is instance of"
- Added let statement
- We have nested lists
- Removed unit from number type. We do not know how to convert between different units. Perhaps, need a subclass for physical quantity. Units were added on by InterMed; they were NOT part of Arden anyways.

Example

Old incorrect expression syntax:

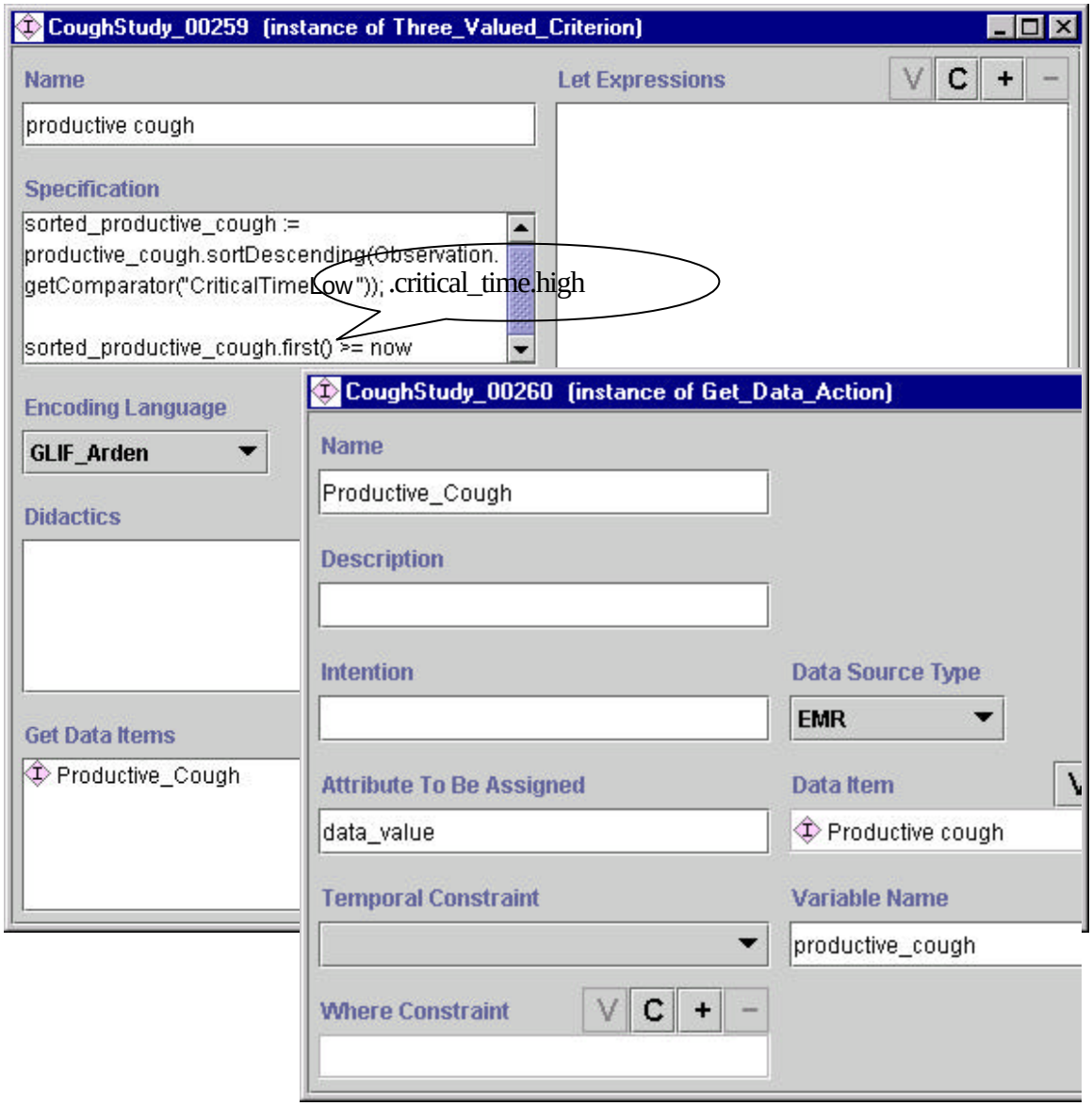
```
latest Productive_Cough.critical_time.high >= now
```

New unproven expression syntax:

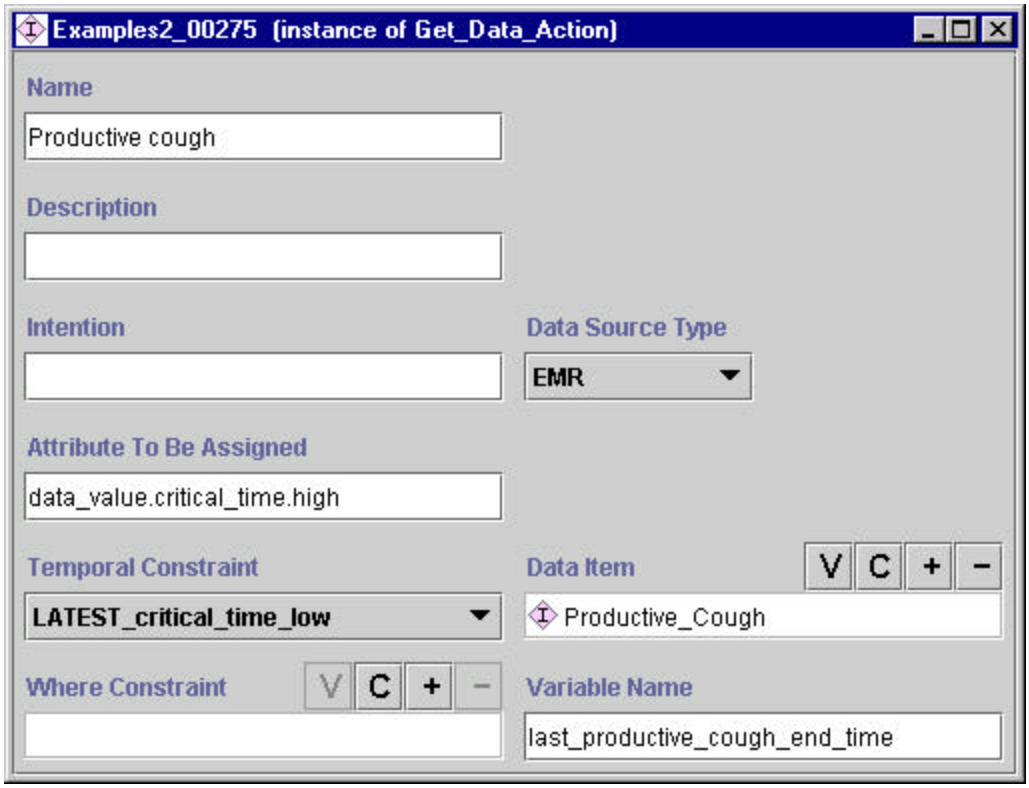
```
sorted_productive_cough :=
Productive_Cough.sortDescending(Observation.getComparator("CriticalTime
High"));

sorted_productive_cough.first() >= now
```

Notes:

Productive_Cough is of class List (a newly defined class in the "GLIF.USAM package") containing elements of class Observation as defined in USAM. A list can sort its elements in ascending or descending order based on a comparator defined in the class of its member elements. The comparator can be retrieved by the getComparator function of a class. Observation has a member variable called critical_time which has member variables called high and low. Observation provides comparators for sorting on these high and low variables.



An alternative way that uses Arden Syntax is shown below.


Examples2_00275 (instance of Get_Data_Action)
Name
Productive cough
Description
Intention
Data Source Type
EMR
Attribute To Be Assigned
data_value.critical_time.high
Temporal Constraint
LATEST_critical_time_low
Data Item
V
C
+
−
Productive_Cough
Where Constraint
V
C
+
−
Variable Name
last_productive_cough_end_time