**DSSLibrary and Intrinsics Documentation**

- **DSSLibrary:** Defines an interface for delivering or generating intrinsic functions in related groupings. Each function is returned in a map where the name should be used to call the function from a DSS program, and the function object is used as a Java object that extends the DSSFunction. An ExecutionContext is also available within the interpreter maintaining variables and certain functions. The following definitions in this document include the intrinsic functions belonging to DSSLibrary.

- **AnnotatedDSSLibrary:** The programmer annotates methods and arguments in a subclass of AnnotatedDSSLibrary which uses reflection to read these annotations and generate DSSFunctions.

The following conversions should be supported (meaning that methods should

generally restrict arguments/return values to the types on the right hand side.)

DSS Type Java type

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integer <-> long

float <-> double

boolean <-> boolean

date <-> java.util.Date

string <-> java.lang.String

list <-> java.util.List<DSSValue>

object <-> java.util.Map<String, DSSValue>

- **DSSDateLibrary:** All intrinsic functions that are time oriented.

currenttime() – return current time; e.g., Tue Nov 06 10:33:56 PST 2012

recentTimeItem(list) – return the item with the most recent time

oldestTimeItem(list) – return the item with the oldest time  
before(time1,time2) – return true if time1 is before time2

time(v) – return time associated with v

addDays(time,numDays) - return a new time based on numDays

addMonths(time,numMonths) - return a new time based on numMonths

The default format for date and time follows: yyyy-MM-dd hh:mm:ss

e.g.

System Date: 2013-04-11

System Time: 09:07:32

- **ListLibrary:** Included in ListLibrary are functions that help sort and organize items.

merge(list1, list2) – list1 or list2 could be a single item; this returns a new list, sorted in chronological order

sortTime(list) – returns a list sorted based on *time* of items (from oldest to newest)

sortData(list) – returns a list sorted based on *values* of items

last(list) – return the last item in the list

first(list) – return the first item in the list

- **DSSLengthAndWithinLibrary:** The length function simply returns either the list or the string, and the within function checks if the first item of the list is between the second and the third items.

within(v,a,b) – returns true if v is between a and b, inclusive; e.g., within(3,2,5) is true

length(v) – length of either list or string

- **IsLibrary:** A class that includes the various “is” intrinsics for type checking.

isString(var)

isInt(var)

isFloat(var)

isBoolean(var)

isDate(var)

isObject(var)

isList(var)

- **ReadLibrary:** Used for reading ID’s and encounters of the patient.

read(patientId,conceptName) - returns a list of observations from db; consider lab vs other encounters; only retrieve items not voided  
readInitialEncounter(patientId,conceptName) - returns a list of observations from db, only from the **initial** encounter

readLatestEncounter(patientId,conceptName) - returns a list of observations from db, only from the **latest** encounter