MDL Reference

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Summary of Contents

Detailed Contents

1 Objects

1.1 Summary

Name	Description
dataObj	Data object
designObj	Design object
mdlObj	Model object
mogObj	Model Object Group object
parObj	Parameter object
priorObj	Prior object
taskObj	Task object

1.2 Object: mdlObj

Model object

Blocks

Name	Description
COVARIATES	Defined covariates
FUNCTIONS	
GROUP_VARIABLES	Defines group variables
IDV	Defines the individual variable of the model
INDIVIDUAL_VARIABLES	Defines individual parameters
MODEL_PREDICTION	Defines the model prediction
OBSERVATION	Defines observations
POPULATION_PARAMETERS	Defines population parameters
RANDOM_VARIABLE_DEFINITION	Defines random variables
STRUCTURAL_PARAMETERS	Defines structural parameters
VARIABILITY_LEVELS	Defines variability levels
VARIABILITY_PARAMETERS	Defines variability parameters

1.3 Object: dataObj

Data object

Blocks

Name	Description
DATA_DERIVED_VARIABLES	Defines addition column mappings
DATA_INPUT_VARIABLES	Defines data columns
DECLARED_VARIABLES	Declares variables defined in another object
FUNCTIONS	
SOURCE	

1.4 Object: priorObj

Prior object

Blocks

Name	Description
NON_CANONICAL_DISTRIBUTION	
PRIOR_PARAMETERS	
PRIOR_VARIABLE_DEFINITION	

1.5 Object: taskObj

Task object

Blocks

Name	Description
ESTIMATE	
EVALUATE	
OPTIMISE	
SIMULATE	

1.6 Object: designObj

Design object

Blocks

Name	Description
DECLARED_VARIABLES	Declares variables defined in another object
DESIGN_PARAMETERS	
DESIGN_SPACES	
INTERVENTION	
POPULATION	
SAMPLING	
STUDY_DESIGN	

1.7 Object: parObj

Parameter object

Blocks

Name	Description
STRUCTURAL	
VARIABILITY	

1.8 Object: mogObj

Model Object Group object

Blocks

Name	Description
INFO	Contains information about the model.
OBJECTS	

2 Block Definitions

2.1 COMPARTMENT

Constraints

Number of blocks in object $(0, \infty)$
Number of statements in block $(0, \infty)$

Permitted statement types

- List definition
- Anonymous list

Lists

List	Key Attribute	Key Value
CmtDirect	type	direct
Compartment	type	compartment
Depot	type	depot
Distribution	type	distribution
Effect	type	effect
Elimination	type	elimination
Transfer	type	transfer

2.2 COVARIATES

Defined covariates

Arguments

Attribute	Type	Optional	Description
type	covArgEnumType	true	

Constraints

Number of blocks in object $(0, \infty)$
Number of statements in block $(0, \infty)$

Permitted statement types

- Variable definition (no RHS)
- Variable definition (with RHS)
- Categorical parameter definition
- Random variable definition

2.3 DATA_DERIVED_VARIABLES

Defines addition column mappings

Constraints

Number of blocks in object $(0, \infty)$
Number of statements in block $(0, \infty)$

Permitted statement types

- List definition

Lists

List	Key Attribute	Key Value
DDCatCovariate	use	catCov
DDCovariate	use	covariate
DDVariable	use	variable
DoseInterval	use	doseInterval
DoseTime	use	doseTime

2.4 DATA_INPUT_VARIABLES

Defines data columns

Constraints

Number of blocks in object $(0, \infty)$
Number of statements in block $(1, \infty)$

Permitted statement types

- List definition

Lists

List	Key Attribute	Key Value
Amt	use	amt
CatCovariate	use	catCov
CensCol	use	cens
Cmt	use	cmt
Cmt	use	cmt
Covariate	use	covariate
DataVarLevel	use	varLevel
DataVariable	use	variable
Dv	use	dv
Dvid	use	dvid
Evid	use	evid
Id	use	id
Idv	use	idv
Mdv	use	mdv
addl	use	addl
ignore	use	ignore
ii	use	ii
rate	use	rate
ss	use	ss

2.5 DECLARED_VARIABLES

Declares variables defined in another object

Constraints

Number of blocks in object $(0, \infty)$
Number of statements in block $(0, \infty)$

Permitted statement types

- Variable definition (no RHS)
- Categorical parameter definition

2.6 DEQ

Constraints

Number of blocks in object $(0, \infty)$
Number of statements in block $(0, \infty)$

Permitted statement types

- List definition
- Variable definition (no RHS)
- Variable definition (with RHS)

Lists

List	Key Attribute	Key Value
DerivList	N/A	N/A

2.7 DESIGN_PARAMETERS

Constraints

Number of blocks in object $(0, \infty)$
Number of statements in block $(0, \infty)$

Permitted statement types

- Variable definition (no RHS)
- Variable definition (with RHS)

2.8 DESIGN_SPACES

Constraints

Number of blocks in object $(0, \infty)$
Number of statements in block $(0, \infty)$

Permitted statement types

- List definition

Lists

List	Key Attribute	Key Value
DesignSpaceArmSize	element	armSize
DesignSpaceBolusAmt	element	bolusAmt
DesignSpaceCov	element	covariate
DesignSpaceDoseTime	element	doseTime
DesignSpaceDuration	element	duration
DesignSpaceInfAmt	element	infAmt
DesignSpaceNumArms	element	numberArms
DesignSpaceNumTimes	element	numberTimes
DesignSpaceParam	element	parameter
DesignSpaceSampleTimes	element	sampleTime

2.9 ESTIMATE

Constraints

Number of blocks in object (0, 1)
Number of statements in block (0, ∞)

Permitted statement types

- Property statement
- List definition

Sub-Blocks

Name	Description
TARGET_SETTINGS	

Lists

List	Key Attribute	Key Value
BlqList	N/A	N/A

Properties

Name	Type	Optional
algo	estAlgo	F

2.10 EVALUATE

Constraints

Number of blocks in object (0, 1)
Number of statements in block (0, ∞)

Permitted statement types

- Property statement

Sub-Blocks

Name	Description
TARGET_SETTINGS	

Properties

Name	Type	Optional
amount	real	T
armSize	int	T
armSize	int	T
doseTime	real	T
duration	real	T
equivalenceRange	vector	T
features	vector [sampleElement]	T
fim	string	T
graphInfA	vector	T
graphLogical	boolean	T
graphOnly	boolean	T
graphSupA	vector	T
identicalTimes	boolean	T
iterPrint	boolean	T
logLogical	boolean	T
lowerA	vector	T
maxIter	int	T
nSubjectsComparison	boolean	T
nSubjectsEquivalence	boolean	T
namesDataX	vector [string]	T
namesDataY	vector [string]	T
numberArms	vector [int]	T
numberArms	vector [int]	T
numberSamples	vector [int]	T
numberTimes	int	T
powerComparison	boolean	T
powerEquivalence	boolean	T
previousFim	string	T
rcTol	real	T
sampleTime	real	T
simplexParameter	real	T
subjectsOpt	boolean	T
totalCost	real	T
totalSize	int	T
typeIError	real	T
typeIIError	real	T
upperA	vector	T

2.11 FUNCTIONS

Constraints

Number of blocks in object $(0, \infty)$
Number of statements in block $(0, \infty)$

Permitted statement types

- Variable definition (no RHS)

2.12 GROUP_VARIABLES

Defines group variables

Constraints

Number of blocks in object $(0, \infty)$
Number of statements in block $(0, \infty)$

Permitted statement types

- Variable definition (with RHS)
- Variable definition (no RHS)

2.13 IDV

Defines the individual variable of the model

Constraints

Number of blocks in object (1, 1)
Number of statements in block (1, 1)

Permitted statement types

- Variable definition (no RHS)

2.14 INDIVIDUAL_VARIABLES

Defines individual parameters

Constraints

Number of blocks in object $(0, \infty)$
Number of statements in block $(0, \infty)$

Permitted statement types

- Variable definition (with RHS)
- Equation with LHS transformation and RHS
- List definition (conditional lists permitted)
- Anonymous list

Lists

List	Key Attribute	Key Value
IndivParamGeneral	type	general
IndivParamLinear	type	linear
IndivRvList	type	rv

2.15 INFO

Contains information about the model.

Constraints

Number of blocks in object $(0, \infty)$
Number of statements in block $(0, \infty)$

Permitted statement types

- Property statement

Properties

Name	Type	Optional
name	string	T
problemStmt	string	T

2.16 INPUT_PRIOR_DATA

Constraints

Number of blocks in object $(0, \infty)$
Number of statements in block $(0, \infty)$

Permitted statement types

- Anonymous list

Lists

List	Key Attribute	Key Value
PriorMatrixInput	matrixVar	N/A
PriorVectorInput	vectorVar	N/A

2.17 INTERVENTION

Constraints

Number of blocks in object $(1, \infty)$
Number of statements in block $(0, \infty)$

Permitted statement types

- List definition

Lists

List	Key Attribute	Key Value
AdminBolusList	type	bolus
AdminComplexList	type	combi
AdminInfusionList	type	infusion
AdminResetAllList	type	resetAll
AdminResetList	type	reset

2.18 MODEL_PREDICTION

Defines the model prediction

Constraints

Number of blocks in object $(0, \infty)$
Number of statements in block $(0, \infty)$

Permitted statement types

- Variable definition (no RHS)
- Variable definition (with RHS)
- List definition

Sub-Blocks

Name	Description
COMPARTMENT	
DEQ	

Lists

List	Key Attribute	Key Value
DerivList	N/A	N/A

2.19 NON_CANONICAL_DISTRIBUTION

Constraints

Number of blocks in object $(0, \infty)$
Number of statements in block $(0, \infty)$

Permitted statement types

- Variable definition (no RHS)

Sub-Blocks

Name	Description
INPUT_PRIOR_DATA	
PRIOR_SOURCE	

2.20 OBJECTS

Constraints

Number of blocks in object (1, 1)
Number of statements in block (4, 5)

Permitted statement types

- List definition

Lists

List	Key Attribute	Key Value
MdlObjInMog	N/A	N/A

2.21 OBSERVATION

Defines observations

Constraints

Number of blocks in object $(0, \infty)$
Number of statements in block $(0, \infty)$

Permitted statement types

- Variable definition (with RHS)
- Equation with LHS transformation and RHS
- List definition (conditional lists permitted)
- Anonymous list

Lists

List	Key Attribute	Key Value
CatObs	type	categorical
ContinuousObsList	type	continuous
CountObs	type	count
DiscreteObs	type	discrete
TteObs	type	tte
UserDefinedObsList	type	userDefined
additiveErrorList	type	additiveError
combinedError1List	type	combinedError1
combinedError2List	type	combinedError2
proportionalErrorList	type	proportionalError

2.22 OPTIMISE

Constraints

Number of blocks in object (0, 1)
Number of statements in block (0, ∞)

Permitted statement types

- Property statement

Sub-Blocks

Name	Description
TARGET_SETTINGS	

Properties

Name	Type	Optional
amount	real	T
armSize	int	T
armSize	int	T
doseTime	real	T
duration	real	T
equivalenceRange	vector	T
features	vector [sampleElement]	T
fim	string	T
graphInfA	vector	T
graphLogical	boolean	T
graphOnly	boolean	T
graphSupA	vector	T
identicalTimes	boolean	T
iterPrint	boolean	T
logLogical	boolean	T
lowerA	vector	T
maxIter	int	T
nSubjectsComparison	boolean	T
nSubjectsEquivalence	boolean	T
namesDataX	vector [string]	T
namesDataY	vector [string]	T
numberArms	vector [int]	T
numberArms	vector [int]	T
numberSamples	vector [int]	T
numberTimes	int	T
optAlgo	OptAlgoType	T
powerComparison	boolean	T
powerEquivalence	boolean	T
previousFim	string	T
rcTol	real	T
sampleTime	real	T
simplexParameter	real	T
subjectsOpt	boolean	T
totalCost	real	T
totalSize	int	T
typeIError	real	T
typeIIError	real	T
upperA	vector	T

2.23 POPULATION

Constraints

Number of blocks in object $(0, \infty)$
Number of statements in block $(0, \infty)$

Permitted statement types

- List definition

Lists

List	Key Attribute	Key Value
PopulationTemplate	type	template

2.24 POPULATION_PARAMETERS

Defines population parameters

Constraints

Number of blocks in object $(0, \infty)$
Number of statements in block $(0, \infty)$

Permitted statement types

- Anonymous list

Lists

List	Key Attribute	Key Value
PopnCategoricalList	type	categorical
PopnContinuousList	type	continuous

2.25 PRIOR_PARAMETERS

Constraints

Number of blocks in object $(0, \infty)$
Number of statements in block $(0, \infty)$

Permitted statement types

- Variable definition (no RHS)
- Variable definition (with RHS)

2.26 PRIOR_SOURCE

Constraints

Number of blocks in object $(0, \infty)$
Number of statements in block $(0, \infty)$

Permitted statement types

- List definition

Lists

List	Key Attribute	Key Value
PriorSourceCsv	inputFormat	csv

2.27 PRIOR_VARIABLE_DEFINITION

Constraints

Number of blocks in object $(0, \infty)$
Number of statements in block $(0, \infty)$

Permitted statement types

- Variable definition (no RHS)
- Variable definition (with RHS)
- Random variable definition

2.28 RANDOM_VARIABLE_DEFINITION

Defines random variables

Arguments

Attribute	Type	Optional	Description
level	varLevel	false	Variability level

Constraints

Number of blocks in object $(0, \infty)$
Number of statements in block $(0, \infty)$

Permitted statement types

- Random variable definition
- Categorical parameter definition
- Anonymous list

Lists

List	Key Attribute	Key Value
CorrelationList	type	correlation
CovarianceList	type	covariance

2.29 SAMPLING

Constraints

Number of blocks in object $(0, \infty)$
Number of statements in block $(0, \infty)$

Permitted statement types

- List definition

Lists

List	Key Attribute	Key Value
DerivedSamplingList	type	combi
SimpleSamplingList	type	simple

2.30 SIMULATE

Constraints

Number of blocks in object (0, 1)
Number of statements in block (0, ∞)

Permitted statement types

- Property statement

Sub-Blocks

Name	Description
TARGET_SETTINGS	

Properties

Name	Type	Optional
solver	solverType	T

2.31 SOURCE

Constraints

Number of blocks in object (1, 1)
Number of statements in block (1, 1)

Permitted statement types

- List definition

Lists

List	Key Attribute	Key Value
Source	N/A	N/A

2.32 STRUCTURAL

Constraints

Number of blocks in object $(0, \infty)$
Number of statements in block $(0, \infty)$

Permitted statement types

- List definition

Lists

List	Key Attribute	Key Value
StructuralEstimateMatrix	matrixValue	N/A
StructuralEstimateReal	value	N/A
StructuralEstimateVector	vectorValue	N/A

2.33 STRUCTURAL_PARAMETERS

Defines structural parameters

Constraints

Number of blocks in object $(0, \infty)$
Number of statements in block $(0, \infty)$

Permitted statement types

- Variable definition (no RHS)
- Variable definition (with RHS)

2.34 STUDY_DESIGN

Constraints

Number of blocks in object $(0, \infty)$
Number of statements in block $(0, \infty)$

Permitted statement types

- List definition

Lists

List	Key Attribute	Key Value
StudyDesign	N/A	N/A

Properties

Name	Type	Optional
armSize	int	T
numberArms	vector [int]	T
numberSamples	vector [int]	T
sameTimes	boolean	T
totalCost	real	T
totalSize	int	T

2.35 TARGET_SETTINGS

Arguments

Attribute	Type	Optional	Description
settingsFile	vector [string]	true	
target	string	false	

Constraints

Number of blocks in object $(0, \infty)$
Number of statements in block $(0, \infty)$

Permitted statement types

- Property statement

2.36 VARIABILITY

Constraints

Number of blocks in object $(0, \infty)$
Number of statements in block $(0, \infty)$

Permitted statement types

- List definition

Lists

List	Key Attribute	Key Value
VarEstimateMatrix	matrixValue	N/A
VarEstimateReal	value	N/A
VarEstimateVector	vectorValue	N/A

2.37 VARIABILITY_LEVELS

Defines variability levels

Arguments

Attribute	Type	Optional	Description
reference	varLevel	true	Variability level to use as reference (typically BSV)

Constraints

Number of blocks in object (0, 1)
Number of statements in block (0, ∞)

Permitted statement types

- List definition

Lists

List	Key Attribute	Key Value
varLevel	N/A	N/A

2.38 VARIABILITY_PARAMETERS

Defines variability parameters

Constraints

Number of blocks in object $(0, \infty)$
Number of statements in block $(0, \infty)$

Permitted statement types

- Variable definition (no RHS)
- Variable definition (with RHS)

3 List Definitions

3.1 AdminBolusList

Options:

extends AdminSuperList

anonymous false

can define categories false

Attribute	Type	Description
amount	real	
doseIntervalVar	reference	
doseTime	vector	
input	reference [dosingTarget]	
lastDoseTimeVar	reference	
p	real	
ssInterval	real	
timeLastSSDose	real	
type	AdminTypeType	

Signatures
(type, input, amount, p?, doseTime, doseIntervalVar?, lastDoseTimeVar?)
(type, input, amount, p?, ssInterval?, timeLastSSDose)

3.2 AdminComplexList

Options:

extends AdminSuperList

anonymous false

can define categories false

Attribute	Type	Description
combination	vector [AdminSuperList]	
end	vector	
start	vector	
type	AdminTypeType	

Signatures
(type, combination, start?, end?)

3.3 AdminInfusionList

Options:

extends AdminSuperList

anonymous false

can define categories false

Attribute	Type	Description
amount	real	
doseIntervalVar	reference	
doseTime	vector	
duration	vector	
input	reference [dosingTarget]	
lastDoseTimeVar	reference	
p	real	
rate	vector	
ssInterval	real	
timeLastSSDose	real	
timeStopSSInfusion	real	
type	AdminTypeType	

Signatures
(type, input, amount, p?, doseTime, rate, doseIntervalVar?, lastDoseTimeVar?)
(type, input, amount, p?, doseTime, duration)
(type, input, amount, p?, rate, ssInterval?, timeLastSSDose)
(type, input, amount, p?, duration, ssInterval?, timeLastSSDose)
(type, input, rate, p?, timeStopSSInfusion)

3.4 AdminResetAllList

Options:

extends AdminSuperList

anonymous false

can define categories false

Attribute	Type	Description
type	AdminTypeType	

Signatures
(type)

3.5 AdminResetList

Options:

extends AdminSuperList

anonymous false

can define categories false

Attribute	Type	Description
reset	vector [ResetSublist]	
type	AdminTypeType	

Signatures
(type, reset)

3.6 AdminSuperList

Options:

anonymous false

can define categories false

List Super Type

3.7 Amt

Options:

extends DataColumn

anonymous false

can define categories false

Attribute	Type	Description
define	DoseMapping	
use	divUse	
variable	reference [dosingTarget]	

Signatures
(use, define)
(use, variable)

3.8 BlqList

Options:

anonymous false

can define categories false

Attribute	Type	Description
blqMethod	blkType	
lloq	real	

Signatures
(blqMethod, lloq)

3.9 CatCovariate

Options:

extends DataColumn

anonymous false

can define categories true

supports category mapping with type int

category mapping optional false

Attribute	Type	Description
use	divUse	

Signatures
(use)

3.10 CatObs

Options:

extends observation

anonymous true

can define categories false

Attribute	Type	Description
type	obstype	
variable	randomVariable [genericEnum]	

Signatures
(type, variable)

3.11 CensCol

Options:

extends DataColumn

anonymous false

can define categories false

Attribute	Type	Description
use	divUse	

Signatures
(use)

3.12 Cmt

Options:

extends DataColumn

anonymous false

can define categories false

Attribute	Type	Description
use	divUse	

Signatures
(use)

3.13 CmtDirect

Options:

anonymous false

can define categories false

alternate type real

Attribute	Type	Description
finput	real	
modelCmt	int	
modelDur	real	
tlag	real	
to	reference [dosingTarget]	
type	cmtType	

Signatures
(type, modelCmt?, to, modelDur?, tlag?, finput?)

3.14 Compartment

Options:

extends dosingTarget

anonymous false

can define categories false

alternate type real

Attribute	Type	Description
modelCmt	int	
type	cmtType	

Signatures
(type, modelCmt?)

3.15 ContinuousObsList

Options:

extends observation

anonymous true

can define categories false

Attribute	Type	Description
type	obstype	
variable	randomVariable [real]	

Signatures
(type, variable)

3.16 CorrelationList

Options:

anonymous true

can define categories false

Attribute	Type	Description
matrix	matrix	
rv1	randomVariable	
rv2	randomVariable	
type	CorrelationEnumType	
value	real	

Signatures
(type, matrix)
(type, rv1, rv2, value)

3.17 CountObs

Options:

extends observation

anonymous true

can define categories false

Attribute	Type	Description
type	obstype	
variable	randomVariable [int]	

Signatures
(type, variable)

3.18 CovarianceList

Options:

anonymous true

can define categories false

Attribute	Type	Description
matrix	matrix	
rv1	randomVariable	
rv2	randomVariable	
type	CorrelationEnumType	
value	real	

Signatures
(type, matrix)
(type, rv1, rv2, value)

3.19 Covariate

Options:

extends DataColumn

anonymous false

can define categories false

alternate type real

Attribute	Type	Description
interp	reference [function (real, real, real, real, real)real]	
use	divUse	

Signatures
(use, interp?)

3.20 DDCatCovariate

Options:

anonymous false

can define categories true

supports category mapping with type int

category mapping optional false

Attribute	Type	Description
use	ddvUse	

Signatures
(use)

3.21 DDCovariate

Options:

anonymous false

can define categories false

Attribute	Type	Description
column	reference [DataColumn]	
use	ddvUse	

Signatures
(use, column)

3.22 DDVariable

Options:

anonymous false

can define categories false

Attribute	Type	Description
column	reference [DataColumn]	
use	ddvUse	

Signatures
(use, column)

3.23 DataColumn

Options:

anonymous false

can define categories false

List Super Type

3.24 DataVarLevel

Options:

extends DataColumn

anonymous false

can define categories false

Attribute	Type	Description
use	divUse	

Signatures
(use)

3.25 DataVariable

Options:

extends DataColumn

anonymous false

can define categories false

Attribute	Type	Description
interp	reference [function (real, real, real, real, real)real]	
use	divUse	

Signatures
(use, interp?)

3.26 Depot

Options:

anonymous false

can define categories false

alternate type real

Attribute	Type	Description
finput	real	
ka	real	
ktr	real	
modelCmt	int	
modelDur	real	
mtt	real	
tlag	real	
to	reference [dosingTarget]	
type	cmtType	

Signatures
(type, modelCmt?, to, ka, tlag?, finput?)
(type, modelCmt?, to, ka, ktr, mtt)
(type, modelCmt?, to, modelDur, ktr, mtt)
(type, modelCmt?, to, modelDur, tlag?, finput?)

3.27 DerivList

Options:

extends dosingTarget

anonymous false

can define categories false

alternate type deriv

Attribute	Type	Description
deriv	real	
init	real	
wrt	reference [real]	
x0	real	

Signatures
(deriv, init?, x0?, wrt?)

3.28 DerivedSamplingList

Options:

extends SamplingSuper

anonymous false

can define categories false

Attribute	Type	Description
combination	vector [reference [SamplingSuper]]	
numberTimes	int	
relative	boolean	
start	vector [real]	
type	sampletype	

Signatures
(type, combination, numberTimes?, start?, relative?)

3.29 DesignSpaceArmSize

Options:

anonymous false

can define categories false

Attribute	Type	Description
discrete	vector	
element	sampleElement	
objRef	vector [reference [StudyDesign]]	
range	vector	

Signatures
(objRef, element, discrete)
(objRef, element, range)

3.30 DesignSpaceBolusAmt

Options:

anonymous false

can define categories false

Attribute	Type	Description
discrete	vector	
element	sampleElement	
objRef	vector [reference [AdminBolusList]]	
range	vector	

Signatures
(objRef, element, discrete)
(objRef, element, range)

3.31 DesignSpaceCov

Options:

anonymous false

can define categories false

Attribute	Type	Description
discrete	vector	
element	sampleElement	
objRef	vector [reference [real]]	
range	vector	

Signatures
(objRef, element, discrete)
(objRef, element, range)

3.32 DesignSpaceDoseTime

Options:

anonymous false

can define categories false

Attribute	Type	Description
discrete	vector	
element	sampleElement	
objRef	vector [reference [AdminBolusList]]	
range	vector	

Signatures
(objRef, element, discrete)
(objRef, element, range)

3.33 DesignSpaceDuration

Options:

anonymous false

can define categories false

Attribute	Type	Description
discrete	vector	
element	sampleElement	
objRef	vector [reference [AdminInfusionList]]	
range	vector	

Signatures
(objRef, element, discrete)
(objRef, element, range)

3.34 DesignSpaceInfAmt

Options:

anonymous false

can define categories false

Attribute	Type	Description
discrete	vector	
element	sampleElement	
objRef	vector [reference [AdminInfusionList]]	
range	vector	

Signatures
(objRef, element, discrete)
(objRef, element, range)

3.35 DesignSpaceNumArms

Options:

anonymous false

can define categories false

Attribute	Type	Description
discrete	vector	
element	sampleElement	
objRef	vector [reference [StudyDesign]]	
range	vector	

Signatures
(objRef, element, discrete)
(objRef, element, range)

3.36 DesignSpaceNumTimes

Options:

anonymous false

can define categories false

Attribute	Type	Description
discrete	vector	
element	sampleElement	
objRef	vector [reference [SamplingSuper]]	
range	vector	

Signatures
(objRef, element, discrete)
(objRef, element, range)

3.37 DesignSpaceParam

Options:

anonymous false

can define categories false

Attribute	Type	Description
discrete	vector	
element	sampleElement	
objRef	vector [reference [real]]	
range	vector	

Signatures
(objRef, element, discrete)
(objRef, element, range)

3.38 DesignSpaceSampleTimes

Options:

anonymous false

can define categories false

Attribute	Type	Description
discrete	vector	
element	sampleElement	
objRef	vector [reference [SamplingSuper]]	
range	vector	

Signatures
(objRef, element, discrete)
(objRef, element, range)

3.39 DiscreteObs

Options:

extends observation

anonymous true

can define categories false

Attribute	Type	Description
type	obstype	
variable	randomVariable [genericEnum]	

Signatures
(type, variable)

3.40 Distribution

Options:

anonymous false

can define categories false

Attribute	Type	Description
from	reference [dosingTarget]	
kin	real	
kout	real	
modelCmt	int	
type	cmtType	

Signatures
(type, modelCmt?, kin, kout, from)

3.41 DoseInterval

Options:

anonymous false

can define categories false

Attribute	Type	Description
amtColumn	reference [Amt]	
idvColumn	reference [Idv]	
use	ddvUse	

Signatures
(use, idvColumn, amtColumn)

3.42 DoseTime

Options:

anonymous false

can define categories false

Attribute	Type	Description
amtColumn	reference [Amt]	
idvColumn	reference [Idv]	
use	ddvUse	

Signatures
(use, idvColumn, amtColumn)

3.43 Dv

Options:

extends DataColumn

anonymous false

can define categories false

Attribute	Type	Description
define	ObsMapping	
use	divUse	
variable	reference [observation]	

Signatures
(use, define)
(use, variable)

3.44 Dvid

Options:

extends DataColumn

anonymous false

can define categories false

Attribute	Type	Description
use	divUse	

Signatures
(use)

3.45 Effect

Options:

anonymous false

can define categories false

alternate type real

Attribute	Type	Description
from	reference [dosingTarget]	
keq	real	
modelCmt	int	
type	cmtType	

Signatures
(type, modelCmt?, from, keq)

3.46 Elimination

Options:

anonymous true

can define categories false

Attribute	Type	Description
cl	real	
from	reference [dosingTarget]	
k	real	
km	real	
modelCmt	int	
type	cmtType	
v	real	
vm	real	

Signatures
(type, modelCmt?, from, v?, k)
(type, modelCmt?, from, v?, cl)
(type, modelCmt?, from, vm, km)

3.47 Evid

Options:

extends DataColumn

anonymous false

can define categories false

Attribute	Type	Description
use	divUse	

Signatures
(use)

3.48 Id

Options:

extends DataColumn

anonymous false

can define categories false

Attribute	Type	Description
use	divUse	

Signatures
(use)

3.49 Idv

Options:

extends DataColumn

anonymous false

can define categories false

Attribute	Type	Description
use	divUse	

Signatures
(use)

3.50 IndivAbstractList

Options:

anonymous false

can define categories false

alternate type real

List Super Type

3.51 IndivParamGeneral

Options:

extends IndivAbstractList

anonymous false

can define categories false

alternate type real

Attribute	Type	Description
grp	real	
ranEff	vector [randomVariable]	
trans	transType	
type	IndivTypeType	

Signatures
(type, trans?, grp, ranEff)

3.52 IndivParamLinear

Options:

extends IndivAbstractList

anonymous false

can define categories false

alternate type real

Attribute	Type	Description
fixEff	vector [fixEffAtts]	
pop	real	
ranEff	vector [randomVariable]	
trans	transType	
type	IndivTypeType	

Signatures
(type, trans?, pop, fixEff?, ranEff)

3.53 IndivRvList

Options:

extends IndivAbstractList

anonymous true

can define categories false

Attribute	Type	Description
type	IndivTypeType	
variable	randomVariable [real]	

Signatures
(type, variable)

3.54 IndivUserDefined

Options:

extends IndivAbstractList

anonymous false

can define categories false

alternate type real

Attribute	Type	Description
type	IndivTypeType	
value	real	

Signatures
(type, value)

3.55 MdlObjInMog

Options:

anonymous false

can define categories false

Attribute	Type	Description
type	objType	

Signatures
(type)

3.56 Mdv

Options:

extends DataColumn

anonymous false

can define categories false

Attribute	Type	Description
use	divUse	

Signatures
(use)

3.57 PopnCategoricalList

Options:

anonymous true

can define categories false

Attribute	Type	Description
type	PopnTypeType	
variable	randomVariable [genericEnum]	

Signatures
(type, variable)

3.58 PopnContinuousList

Options:

anonymous true

can define categories false

Attribute	Type	Description
type	PopnTypeType	
variable	randomVariable [real]	

Signatures
(type, variable)

3.59 PopulationTemplate

Options:

anonymous false

can define categories false

Attribute	Type	Description
covariate	vector [PopTmpltCovSublist]	
type	PopnType	

Signatures
(type, covariate)

3.60 PriorMatrixInput

Options:

anonymous true

can define categories false

Attribute	Type	Description
column	vector [string]	
matrixVar	reference [matrix [[real]]]	
src	PriorSourceCsv	

Signatures
(matrixVar, src, column)

3.61 PriorSourceCsv

Options:

extends PriorTabularSource

anonymous false

can define categories false

Attribute	Type	Description
column	vector [string]	
file	string	
inputFormat	priorInput	

Signatures
(file, inputFormat, column)

3.62 PriorTabularSource

Options:

anonymous false

can define categories false

List Super Type

3.63 PriorVectorInput

Options:

anonymous true

can define categories false

Attribute	Type	Description
column	string	
src	PriorSourceCsv	
vectorVar	reference [vector [real]]	

Signatures
(vectorVar, src, column)

3.64 SamplingSuper

Options:

anonymous false

can define categories false

List Super Type

3.65 SimpleSamplingList

Options:

extends SamplingSuper

anonymous false

can define categories false

Attribute	Type	Description
blq	real	
deltaTime	real	
numberTimes	int	
outcome	reference [observation]	
sampleTime	vector	
type	sampletype	
ulq	real	

Signatures
(type, outcome, sampleTime?, numberTimes?, deltaTime?, blq?, ulq?)

3.66 Source

Options:

anonymous false

can define categories false

Attribute	Type	Description
file	string	
inputFormat	input	

Signatures
(file, inputFormat)

3.67 StructuralEstimateMatrix

Options:

anonymous false

can define categories false

alternate type matrix

Attribute	Type	Description
fix	boolean	
matrixValue	matrix	

Signatures
(matrixValue, fix?)

3.68 StructuralEstimateReal

Options:

anonymous false

can define categories false

alternate type real

Attribute	Type	Description
fix	boolean	
hi	real	
lo	real	
value	real	

Signatures
(value, lo?, hi?, fix?)

3.69 StructuralEstimateVector

Options:

anonymous false

can define categories false

alternate type vector

Attribute	Type	Description
fix	boolean	
vectorValue	vector	

Signatures
(vectorValue, fix?)

3.70 StudyDesign

Options:

anonymous false

can define categories false

Attribute	Type	Description
armSize	int	
interventionSequence	vector [intSeqAtts]	
occasionSequence	vector [OccSeqSubList]	
population	reference [PopulationTemplate]	
sameTimes	boolean	
samplingSequence	vector [sampSeqAtts]	

Signatures
(interventionSequence, samplingSequence, occasionSequence?, armSize?, sameTimes?, population?)

3.71 Transfer

Options:

anonymous true

can define categories false

Attribute	Type	Description
from	reference [dosingTarget]	
kt	real	
modelCmt	int	
to	reference [dosingTarget]	
type	cmtType	

Signatures
(type, modelCmt?, to, from, kt)

3.72 TteObs

Options:

extends observation

anonymous false

can define categories false

Attribute	Type	Description
hazard	reference [real]	
maxEvent	real	
type	obstype	

Signatures
(type, hazard, maxEvent?)

3.73 UserDefinedObsList

Options:

extends observation

anonymous false

can define categories false

Attribute	Type	Description
prediction	real	
type	obstype	
value	real	
weight	real	

Signatures
(type, value, prediction, weight)

3.74 VarEstimateMatrix

Options:

anonymous false

can define categories false

alternate type matrix

Attribute	Type	Description
fix	boolean	
matrixValue	matrix	
type	varType	

Signatures
(type?, matrixValue, fix?)

3.75 VarEstimateReal

Options:

anonymous false

can define categories false

alternate type real

Attribute	Type	Description
fix	boolean	
hi	real	
lo	real	
type	varType	
value	real	

Signatures
(type?, value, lo?, hi?, fix?)

3.76 VarEstimateVector

Options:

anonymous false

can define categories false

alternate type vector

Attribute	Type	Description
fix	boolean	
type	varType	
vectorValue	vector	

Signatures
(type?, vectorValue, fix?)

3.77 additiveErrorList

Options:

extends observation

anonymous false

can define categories false

Attribute	Type	Description
additive	real	
eps	randomVariable [real]	
lhsTrans	boolean	
prediction	real	
trans	transType	
type	obstype	

Signatures
(type, trans?, lhsTrans?, additive, prediction, eps)

3.78 addl

Options:

extends DataColumn

anonymous false

can define categories false

Attribute	Type	Description
use	divUse	

Signatures
(use)

3.79 blkDefn

Options:

anonymous false

can define categories false

Attribute	Type	Description
llq	real	
type	blkMethodType	

Signatures
(type, llq)

3.80 combinedError1List

Options:

extends observation

anonymous false

can define categories false

Attribute	Type	Description
additive	real	
eps	randomVariable [real]	
lhsTrans	boolean	
prediction	real	
proportional	real	
trans	transType	
type	obstype	

Signatures
(type, trans?, lhsTrans?, additive, proportional, prediction, eps)

3.81 combinedError2List

Options:

extends observation

anonymous false

can define categories false

Attribute	Type	Description
additive	real	
eps	randomVariable [real]	
lhsTrans	boolean	
prediction	real	
proportional	real	
trans	transType	
type	obstype	

Signatures
(type, trans?, lhsTrans?, additive, proportional, prediction, eps)

3.82 dosingTarget

Options:

anonymous false

can define categories false

List Super Type

3.83 dosingVar

Options:

extends dosingTarget

anonymous false

can define categories false

alternate type real

Attribute	Type	Description
value	real	

Signatures
(value)

3.84 ignore

Options:

anonymous false

can define categories false

Attribute	Type	Description
use	divUse	

Signatures
(use)

3.85 ii

Options:

extends DataColumn

anonymous false

can define categories false

Attribute	Type	Description
use	divUse	

Signatures
(use)

3.86 observation

Options:

anonymous false

can define categories false

List Super Type

3.87 proportionalErrorList

Options:

extends observation

anonymous false

can define categories false

Attribute	Type	Description
eps	randomVariable [real]	
lhsTrans	boolean	
prediction	real	
proportional	real	
trans	transType	
type	obstype	

Signatures
(type, trans?, lhsTrans?, proportional, prediction, eps)

3.88 rate

Options:

extends DataColumn

anonymous false

can define categories false

Attribute	Type	Description
use	divUse	

Signatures
(use)

3.89 ss

Options:

extends DataColumn

anonymous false

can define categories false

Attribute	Type	Description
use	divUse	

Signatures
(use)

3.90 varLevel

Specifies a variability level Options:

anonymous false

can define categories false

Attribute	Type	Description
level	int	The position in the variability hierarchy.
type	varLvlType	The type of variability level

Signatures
(type, level)

4 Sublist Definitions

4.1 fixEffAtts

Attribute	Type	Description
catCov	reference [genericCategoryValue]	Categorical covariate
coeff	reference [real]	Fixed effect coefficient
cov	reference [real]	Covariate

Signatures
(cov, coeff)
(catCov, coeff)

4.2 priorFormat

Attribute	Type	Description
element	string	
type	priorElementType	

Signatures
(element, type)

4.3 ResetSublist

Attribute	Type	Description
resetTime	real	
value	real	
variable	reference [dosingTarget]	

Signatures
(variable, resetTime?, value?)

4.4 intSeqAtts

Attribute	Type	Description
admin	vector [reference [AdminSuperList]]	
start	vector	

Signatures
(admin, start?)

4.5 sampSeqAtts

Attribute	Type	Description
sample	vector [reference [SamplingSuper]]	
start	vector	

Signatures
(sample, start)

4.6 OccSeqSubList

Attribute	Type	Description
level	reference [varLevel]	
occasion	vector [int]	
start	vector	

Signatures
(occasion, level, start?)

4.7 PopTmpltCovSublist

Attribute	Type	Description
catCov	reference [genericEnum]	
catCovValue	reference [genericCategoryValue]	
cov	reference [real]	
discreteRv	randomVariable [genericEnum]	
rv	randomVariable [real]	
value	real	

Signatures
(catCovValue)
(cov, value)
(cov, rv)
(catCov, discreteRv)

5 Function Definitions

5.1 Bernoulli1

Bernoulli distributions

Returns pmf

Named Arguments

Argument	Type	Description
probability	real	

Signatures
(probability)

5.2 Beta1

Beta distribution

Returns pdf

Named Arguments

Argument	Type	Description
alpha	real	shape
beta	real	shape

Signatures
(alpha, beta)

5.3 Binomial1

Bernouli distributon with parameters n and p

Returns pmf

Named Arguments

Argument	Type	Description
numberOfTrials	real	number of trial
probability	real	success probability in each trial

Signatures
(probability, numberOfTrials)

5.4 CategoricalNonordered1

Returns pmf

Named Arguments

Argument	Type	Description
categoryProb	vector [real]	

Signatures
(categoryProb)

5.5 CategoricalOrdered1

Returns pmf

Named Arguments

Argument	Type	Description
categoryProb	vector [real]	

Signatures
(categoryProb)

5.6 Empirical

Returns pdf

Named Arguments

Argument	Type	Description
data	vector	

Signatures
(data)

5.7 Gamma1

Returns pdf

Named Arguments

Argument	Type	Description
scale	real	
shape	real	

Signatures
(shape, scale)

5.8 Gamma2

Returns pdf

Named Arguments

Argument	Type	Description
rate	real	
shape	real	

Signatures
(shape, rate)

5.9 InverseGamma1

Inverse Gamma 1

Returns pdf

Named Arguments

Argument	Type	Description
scale	real	scale
shape	real	shape

Signatures
(shape, scale)

5.10 InverseWishart1

Inverse Wishart

Returns matrix [[pdf]]

Named Arguments

Argument	Type	Description
degreesOfFreedom	real	degrees of freedom
scaleMatrix	matrix	scale matrix

Signatures
(scaleMatrix, degreesOfFreedom)

5.11 LogNormal1

Log Normal distribution 1

Returns pdf

Named Arguments

Argument	Type	Description
meanLog	real	mean of log
stdevLog	real	shape

Signatures
(meanLog, stdevLog)

5.12 LogNormal2

Log Normal distribution 2

Returns pdf

Named Arguments

Argument	Type	Description
meanLog	real	mean of log
varLog	real	shape

Signatures
(meanLog, varLog)

5.13 LogNormal3

Log Normal distribution 3

Returns pdf

Named Arguments

Argument	Type	Description
median	real	median / geometric mean
stdevLog	real	shape

Signatures
(median, stdevLog)

5.14 LogNormal4

Log Normal distribution 4

Returns pdf

Named Arguments

Argument	Type	Description
coefVar	real	coefficient of variation
median	real	median / geometric mean

Signatures
(median, coefVar)

5.15 LogNormal5

Log Normal distribution 5

Returns pdf

Named Arguments

Argument	Type	Description
meanLog	real	mean of log(x)
precision	real	precision

Signatures
(meanLog, precision)

5.16 MixtureDistribution

Returns pdf

Named Arguments

Argument	Type	Description
distributions	vector [pdf]	
weight	vector	mixing coefficients

Signatures
(weight, distributions)

5.17 MultiEmpirical

Returns vector [pdf]

Named Arguments

Argument	Type	Description
data	matrix	

Signatures
(data)

5.18 MultiNonParametric

Returns vector [pdf]

Named Arguments

Argument	Type	Description
bins	matrix	
probability	vector	

Signatures
(bins, probability)

5.19 MultivariateNormal1

Multivariate normal distribution

Returns vector [pdf]

Named Arguments

Argument	Type	Description
covarianceMatrix	matrix	covariance matrix
mean	vector	location

Signatures
(mean, covarianceMatrix)

5.20 MultivariateNormal2

Multivariate normal distribution

Returns vector [pdf]

Named Arguments

Argument	Type	Description
mean	vector	location
precisionMatrix	matrix	inverse of the covariance matrix

Signatures
(mean, precisionMatrix)

5.21 MultivariateStudentT1

Multivariate (Student) T distribution

Returns vector [pdf]

Named Arguments

Argument	Type	Description
covarianceMatrix	matrix	covariance matrix
degreesOfFreedom	real	degrees of freedom
mean	vector	location

Signatures
(mean, covarianceMatrix, degreesOfFreedom)

5.22 MultivariateStudentT2

Multivariate (Student) T distribution

Returns vector [pdf]

Named Arguments

Argument	Type	Description
degreesOfFreedom	real	degrees of freedom
mean	vector	location
precisionMatrix	matrix	inverse of the covariance matrix

Signatures
(mean, precisionMatrix, degreesOfFreedom)

5.23 NegativeBinomial2

Negative Binomial

Returns pmf

Named Arguments

Argument	Type	Description
overdispersion	real	over-dispersion
rate	real	Poisson intensity

Signatures
(rate, overdispersion)

5.24 NonParametric

Returns pdf

Named Arguments

Argument	Type	Description
bins	vector	
probability	vector	

Signatures
(bins, probability)

5.25 Normal

Normal distribution with varying parameterisation

Returns pdf

Named Arguments

Argument	Type	Description
mean	real	mean
sd	real	standard deviation
var	real	variance

Signatures
(mean, sd)
(mean, var)

5.26 Normal1

Normal distribution with s.d.

Returns pdf

Named Arguments

Argument	Type	Description
mean	real	mean
stdev	real	standard deviation

Signatures
(mean, stdev)

5.27 Normal2

Normal distribution with variance

Returns pdf

Named Arguments

Argument	Type	Description
mean	real	mean
var	real	variance

Signatures
(mean, var)

5.28 Normal3

Normal distribution with precision

Returns pdf

Named Arguments

Argument	Type	Description
mean	real	mean
precision	real	precision

Signatures
(mean, precision)

5.29 Poisson1

Poisson distribution

Returns pmf

Named Arguments

Argument	Type	Description
rate	real	Poisson intensity

Signatures
(rate)

5.30 StandardNormal1

Standard normal distribution

Returns pdf

Named Arguments

Argument	Type	Description
mean	real	mean
stdev	real	standard deviation

Signatures
(mean, stdev)

5.31 StandardUniform1

Standard uniform distribution

Returns pdf

Named Arguments

Argument	Type	Description
maximum	real	maximum
minimum	real	minimum

Signatures
(minimum, maximum)

5.32 StudentT1

Student's t-distribution

Returns pdf

Named Arguments

Argument	Type	Description
degreesOfFreedom	real	

Signatures
(degreesOfFreedom)

5.33 StudentT2

Student's t-distribution

Returns pdf

Named Arguments

Argument	Type	Description
degreesOfFreedom	real	
mean	real	mean
scale	real	scale

Signatures
(mean, scale, degreesOfFreedom)

5.34 Uniform1

Uniform distribution

Returns pdf

Named Arguments

Argument	Type	Description
maximum	real	maximum
minimum	real	minimum

Signatures
(minimum, maximum)

5.35 Wishart1

Wishart distribution

Returns matrix [[pdf]]

Named Arguments

Argument	Type	Description
degreesOfFreedom	real	degrees of freedom
scaleMatrix	matrix	scale matrix

Signatures
(scaleMatrix, degreesOfFreedom)

5.36 Wishart2

Wishart distribution

Returns matrix [[pdf]]

Named Arguments

Argument	Type	Description
degreesOfFreedom	real	degrees of freedom
inverseScaleMatrix	matrix	inverse scale matrix

Signatures
(inverseScaleMatrix, degreesOfFreedom)

5.37 ZeroInflatedPoisson1

Sero-inflated Poisson

Returns pdf

Named Arguments

Argument	Type	Description
probabilityOfZero	real	probability of zero
rate	real	Poisson intensity

Signatures
(rate, probabilityOfZero)

5.38 abs

Returns real

Arguments

Argument	Type	Description
x	real	

5.39 acos

Returns real

Arguments

Argument	Type	Description
x	real	

5.40 acosh

Returns real

Arguments

Argument	Type	Description
x	real	

5.41 asVector

Returns vector

Arguments

Argument	Type	Description
x	matrix	

5.42 asin

Returns real

Arguments

Argument	Type	Description
x	real	

5.43 asinh

Returns real

Arguments

Argument	Type	Description
x	real	

5.44 atan

Returns real

Arguments

Argument	Type	Description
x	real	

5.45 atanh

Returns real

Arguments

Argument	Type	Description
x	real	

5.46 ceiling

Returns real

Arguments

Argument	Type	Description
x	real	

5.47 chol

Cholsky decomposition

Returns matrix

Arguments

Argument	Type	Description
A	matrix	

5.48 constInterp

Returns real

Arguments

Argument	Type	Description
t0	real	
t1	real	
x	real	
x0	real	
x1	real	

5.49 cos

Returns real

Arguments

Argument	Type	Description
x	real	

5.50 cosh

Returns real

Arguments

Argument	Type	Description
x	real	

5.51 cubicInterp

Returns real

Arguments

Argument	Type	Description
t0	real	
t1	real	
x	real	
x0	real	
x1	real	

5.52 det

Determinant

Returns real

Arguments

Argument	Type	Description
A	matrix	

5.53 diagonal

Returns matrix

Arguments

Argument	Type	Description
x	vector	

5.54 dseq

Create a sequence of integers.

Returns vector [int]

Arguments

Argument	Type	Description
from	int	
interval	int	
to	int	

5.55 eigen

Eigen Value

Returns real

Arguments

Argument	Type	Description
A	vector	

5.56 exp

Returns real

Arguments

Argument	Type	Description
x	real	

5.57 factorial

Returns real

Arguments

Argument	Type	Description
x	real	

5.58 floor

Returns real

Arguments

Argument	Type	Description
x	real	

5.59 gInv

Inversion (Pseudo/general Inverse)

Returns matrix

Arguments

Argument	Type	Description
A	matrix	

5.60 invLogit

Returns real

Arguments

Argument	Type	Description
x	real	

5.61 invProbit

Returns real

Arguments

Argument	Type	Description
x	real	

5.62 inverse

Returns matrix

Arguments

Argument	Type	Description
x	matrix	

5.63 lastValueInterp

Returns real

Arguments

Argument	Type	Description
t0	real	
t1	real	
x	real	
x0	real	
x1	real	

5.64 linearInterp

Returns real

Arguments

Argument	Type	Description
t0	real	
t1	real	
x	real	
x0	real	
x1	real	

5.65 ln

Returns real

Arguments

Argument	Type	Description
x	real	

5.66 lnFactorial

Returns real

Arguments

Argument	Type	Description
x	real	

5.67 log

Returns real

Arguments

Argument	Type	Description
x	real	
y	real	

5.68 log10

Returns real

Arguments

Argument	Type	Description
x	real	

5.69 log2

Returns real

Arguments

Argument	Type	Description
x	real	

5.70 logit

Returns real

Arguments

Argument	Type	Description
x	real	

5.71 matrix

Returns matrix

Named Arguments

Argument	Type	Description
byRow	boolean	
ncol	real	
vector	vector	

Signatures
(vector, ncol, byRow)

5.72 max

Returns real

Arguments

Argument	Type	Description
x	real	
y	real	

5.73 mean

Returns real

Arguments

Argument	Type	Description
x	vector	

5.74 median

Returns real

Arguments

Argument	Type	Description
x	vector	

5.75 min

Returns real

Arguments

Argument	Type	Description
x	real	
y	real	

5.76 nearestInterp

Returns real

Arguments

Argument	Type	Description
t0	real	
t1	real	
x	real	
x0	real	
x1	real	

5.77 pchipInterp

Returns real

Arguments

Argument	Type	Description
t0	real	
t1	real	
x	real	
x0	real	
x1	real	

5.78 probit

Returns real

Arguments

Argument	Type	Description
x	real	

5.79 rep

Repeats vector, similar to the R function.

Returns vector

Arguments

Argument	Type	Description
each	int	Each element is repeated n times.
times	int	Number of times to repeat the vector
x	vector	

5.80 seq

Create a sequence of real numbers with given interval until to is reached.

Returns vector

Arguments

Argument	Type	Description
from	real	
interval	real	
to	real	

5.81 seqby

Create a sequence of real numbers repeated n times

Returns vector

Arguments

Argument	Type	Description
by	real	
from	real	
to	real	

5.82 sin

Returns real

Arguments

Argument	Type	Description
x	real	

5.83 sinh

Returns real

Arguments

Argument	Type	Description
x	real	

5.84 splineInterp

Returns real

Arguments

Argument	Type	Description
t0	real	
t1	real	
x	real	
x0	real	
x1	real	

5.85 sqrt

Returns real

Arguments

Argument	Type	Description
x	real	

5.86 sum

Returns real

Arguments

Argument	Type	Description
x	vector	

5.87 tan

Returns real

Arguments

Argument	Type	Description
x	real	

5.88 tanh

Returns real

Arguments

Argument	Type	Description
x	real	

5.89 toInt

Returns int

Arguments

Argument	Type	Description
x	real	

5.90 toMatrixByCol

Returns matrix

Arguments

Argument	Type	Description
cols	vector [vector [real]]	

5.91 toMatrixByRow

Returns matrix

Arguments

Argument	Type	Description
rows	vector [vector [real]]	

5.92 transpose

Returns matrix

Arguments

Argument	Type	Description
x	matrix	

5.93 triangle

Returns matrix

Arguments

Argument	Type	Description
diagonalFlag	boolean	
dim	int	
x	vector	

6 Standard Types

Name	Type Class	Description
Mapping	_mapping	Mapping type
boolean	_bool	Boolean type
deriv	_deriv	Derivative type
function	_function	Function type
genericCategoryValue	_categoryValue	Generic categorical type
genericEnum	_category	Generic categorical type
int	_int	Integer type
matrix	_matrix	Matrix type
pdf	_pdf	Probability Density Function type
pmf	_pmf	Probability Mass Function type
randomVariable	_rv	Random variable type
real	_real	Real number type
reference	_reference	Reference type
string	_str	String type
undefined	_undef	Undefined type
vector	_vector	Vector type

7 Mapping Types

Name	Data Type	Variable Type	Description
DoseMapping	Cmt	int	
ObsMapping	Dvid	int	

8 Builtin Enumeration Types

8.1 AdminTypeType

Enumeration	Description
bolus	
infusion	
combi	
resetAll	
reset	

8.2 CorrelationEnumType

Enumeration	Description
covariance	
correlation	

8.3 IndivTypeType

Enumeration	Description
linear	
general	
rv	

8.4 OptAlgoType

Enumeration	Description
simplex	
fw	

8.5 PopnType

Enumeration	Description
template	

8.6 PopnTypeType

Enumeration	Description
continuous	
categorical	

8.7 blkMethodType

Enumeration	Description
m1	
m2	
m3	
m4	

8.8 blkType

Enumeration	Description
m1	
m2	
m3	
m4	

8.9 cmtType

Enumeration	Description
depot	
compartment	
elimination	
transfer	
distribution	
direct	
effect	

8.10 covArgEnumType

Enumeration	Description
constant	
idvDependent	

8.11 ddvUse

Enumeration	Description
doseTime	
doseInterval	
covariate	
catCov	
variable	
dvid	

8.12 divUse

Column use in DIV block

Enumeration	Description
covariate	continuous covariate
variable	variable
amt	Dosing amount
dv	Dependent variable
dvid	Dependent variable identifier
cmt	Compartment
mdv	Dependent variable not used
idv	Independent variable
id	Individual identifier
rate	Rate of infusion
ignore	Ignore column
varLevel	Variability level
catCov	Categorical covariate
ss	Steady state
ii	Steady state interval
addl	Additional dose
evid	Event id
cens	Censoring flag

8.13 estAlgo

Enumeration	Description
saem	
foce	
fo	
focei	
mcmc	

8.14 estimateType

Enumeration	Description
scalar	
vector	
matrix	

8.15 input

Enumeration	Description
nonmemFormat	

8.16 objType

Enumeration	Description
mdlObj	
dataObj	
parObj	
taskObj	
designObj	
priorObj	

8.17 obstype

Enumeration	Description
combinedError1	
combinedError2	
additiveError	
proportionalError	
categorical	
count	
discrete	
tte	
continuous	
userDefined	

8.18 priorElementType

Prior element

Enumeration	Description
matrix	Matrix
vector	Vector

8.19 priorInput

Enumeration	Description
csv	

8.20 sampleElement

Enumeration	Description
bolusAmt	
infAmt	
duration	
sampleTime	
numberTimes	
covariate	
numberArms	
armSize	
parameter	
doseTime	

8.21 sampletype

Enumeration	Description
simple	
combi	

8.22 solverType

Enumeration	Description
stiff	
nonStiff	

8.23 transType

Transformation type

Enumeration	Description
none	No transformation
ln	Natural log
logit	Logit
probit	Probit

8.24 varLvlType

Enumeration	Description
parameter	
observation	

8.25 varType

Enumeration	Description
cov	
corr	
sd	
var	