

Package ‘rxode2parse’

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Title Parsing and Code Generation Functions for 'rxode2'

Version 2.0.13

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Description Provides the parsing needed for 'rxode2' (Wang, Hallow and James (2016) <[doi:10.1002/psp4.12052](https://doi.org/10.1002/psp4.12052)>). It also provides the 'stan' based advan linear compartment model solutions with gradients (Carpenter et al (2015), <[arXiv:1509.07164](https://arxiv.org/abs/1509.07164)>) needed in 'nlmixr2' (Fidler et al (2019) <[doi:10.1002/psp4.12445](https://doi.org/10.1002/psp4.12445)>).
This split will reduce computational burden of recompiling 'rxode2'.

License GPL (>= 3)

URL <https://nlmixr2.github.io/rxode2parse/>,
<https://github.com/nlmixr2/rxode2parse/>

BugReports <https://github.com/nlmixr2/rxode2parse/issues/>

Depends R (>= 4.0.0)

Imports checkmate, crayon, dparser, knitr, qs, Rcpp (>= 1.0.8), utils

Suggests testthat (>= 3.0.0), devtools

LinkingTo BH (>= 1.78.0.0), dparser, Rcpp (>= 1.0.8), RcppEigen (>= 0.3.3.9.2), StanHeaders (>= 2.21.0.7)

Biarch true

Config/testthat/edition 3

Encoding UTF-8

Language en-US

NeedsCompilation yes

RoxygenNote 7.2.1

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print.rxModelVars	<i>Print Values</i>
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Description

print prints its argument and returns it *invisibly* (via `invisible(x)`). It is a generic function which means that new printing methods can be easily added for new `classes`.

Usage

```
## S3 method for class 'rxModelVars'
print(x, ...)
```

Arguments

x	an object used to select a method.
...	further arguments passed to or from other methods.

Details

The default method, `print.default` has its own help page. Use `methods("print")` to get all the methods for the print generic.

`print.factor` allows some customization and is used for printing `ordered` factors as well.

`print.table` for printing `tables` allows other customization. As of R 3.0.0, it only prints a description in case of a table with 0-extents (this can happen if a classifier has no valid data).

See `noquote` as an example of a class whose main purpose is a specific print method.

Value

This returns invisibly the model variables object

References

Chambers, J. M. and Hastie, T. J. (1992) *Statistical Models in S*. Wadsworth & Brooks/Cole.

See Also

The default method `print.default`, and help for the methods above; further `options`, `noquote`.

For more customizable (but cumbersome) printing, see `cat`, `format` or also `write`. For a simple prototypical print method, see `.print.via.format` in package `tools`.

Examples

```
require(stats)

ts(1:20) #-- print is the "Default function" --> print.ts(.) is called
for(i in 1:3) print(1:i)

## Printing of factors
attenu$station ## 117 levels -> 'max.levels' depending on width

## ordered factors: levels "l1 < l2 < .."
esoph$agegp[1:12]
esoph$alcgp[1:12]

## Printing of sparse (contingency) tables
set.seed(521)
t1 <- round(abs(rt(200, df = 1.8)))
t2 <- round(abs(rt(200, df = 1.4)))
table(t1, t2) # simple
print(table(t1, t2), zero.print = ".") # nicer to read

## same for non-integer "table":
T <- table(t2,t1)
T <- T * (1+round(rlnorm(length(T)))/4)
print(T, zero.print = ".") # quite nicer,
print.table(T[,2:8] * 1e9, digits=3, zero.print = ".")
## still slightly inferior to Matrix::Matrix(T) for larger T

## Corner cases with empty extents:
table(1, NA) # < table of extent 1 x 0 >
```

 rxode2parse

Internal translation to get model variables list

Description

Internal translation to get model variables list

Usage

```
rxode2parse(model)
```

Arguments

`model` Model (either file name or string)

Value

A rxModelVars object that has the model variables of a rxode2 syntax expression

Examples

```
rxode2parse("a=3")
```

```
rxode2parseAssignTranslation
```

This assigns the c level linkages for a roxde2 model

Description

This assigns the c level linkages for a roxde2 model

Usage

```
rxode2parseAssignTranslation(df)
```

Arguments

df data frame containing the character column names rxFun, fun, type, package, packageFun and the integer column names argMin and argMax

Value

Nothing called for side effects

Author(s)

Matthew L. Fidler

Examples

```
rxode2parseAssignTranslation(rxode2parseGetTranslation())
```

`rxode2parseD`*This gives the derivative table for rxode2*

Description

This will help allow registration of functions in rxode2

Usage

```
rxode2parseD()
```

Details

This environment is a derivative table;

For example:

```
Derivative(f(a,b,c), a) = fa() Derivative(f(a,b,c), b) = fb() Derivative(f(a,b,c), c) = fc()
```

Then the derivative table for f would be:

```
assign("f", list(fa(a,b,c), fb(a,b,c), fc(a,b,c)), rxode2parseD())
```

fa translates the arguments to the derivative with respect to a fb translates the arguments to the derivative with respect to b

If any of the list is NULL then rxode2 won't know how to take a derivative with respect to the argument.

If the list is shorter than the length of the arguments then the argument then the derivative of arguments that are not specified cannot be taken.

Value

Derivative table environment for rxode2

Author(s)

Matthew L. Fidler

`rxode2parseGetPackagesToLoad`*Control the packages that are loaded when a rxode2 model dll is loaded*

Description

Control the packages that are loaded when a rxode2 model dll is loaded

Usage

```
rxode2parseGetPackagesToLoad()
```

```
rxode2parseAssignPackagesToLoad(pkgs = rxode2parseGetPackagesToLoad())
```

Arguments

pkgs The packages to make sure are loaded every time you load an rxode2 model.

Value

List of packages to load

Author(s)

Matthew Fidler

Examples

```
rxode2parseGetPackagesToLoad()
```

```
rxode2parseAssignPackagesToLoad(rxode2parseGetPackagesToLoad())
```

```
rxode2parseGetPointerAssignment
```

This function gets the currently assigned function pointer assignments

Description

This function gets the currently assigned function pointer assignments

Usage

```
rxode2parseGetPointerAssignment()
```

Value

The currently assigned pointer assignments

Author(s)

Matthew L. Fidler

Examples

```
rxode2parseGetTranslation()
```

rxode2parseGetTranslation

This function gets the currently assigned translations

Description

This function gets the currently assigned translations

Usage

```
rxode2parseGetTranslation()
```

Value

The currently assigned translations

Author(s)

Matthew L. Fidler

Examples

```
rxode2parseGetTranslation()
```

rxode2parseMd5

Get the MD5 hash of the current language revision

Description

Get the MD5 hash of the current language revision

Usage

```
rxode2parseMd5()
```

Value

md5 hash of language revision

Author(s)

Matthew L. Fidler

Examples

```
rxode2parseMd5()
```

rxParseSuppressMsg *Respect suppress messages*

Description

This turns on the silent Rprintf in C when suppressMessages() is turned on. This makes the Rprintf act like messages in R, they can be suppressed with suppressMessages()

Usage

```
rxParseSuppressMsg()
```

Value

Nothing

Author(s)

Matthew Fidler

Examples

```
# rxParseSuppressMsg() is called with rxode2()

# Note the errors are output to the console

try(rxode2parse("d/dt(matt)=/3"), silent = TRUE)

# When using suppressMessages, the output is suppressed

suppressMessages(try(rxode2parse("d/dt(matt)=/3"), silent = TRUE))

# In rxode2, we use Rprintf so that interrupted threads do not crash R
# if there is a user interrupt. This isn't captured by R's messages, but
# This interface allows the `suppressMessages()` to suppress the C printing
# as well

# If you want to suppress messages from rxode2 in other packages, you can use
# this function
```


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