Package 'codetools'

November 4, 2020

Version 0.2-18

Priority recommended

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Description Code analysis tools for R.

Title Code Analysis Tools for R

Depends R (>= 2.1)

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URL https://gitlab.com/luke-tierney/codetools

License GPL

NeedsCompilation no

Repository CRAN

Date/Publication 2020-11-04 17:12:32 UTC

R topics documented:

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checkUsage *Check R Code for Possible Problems*

Description

Check R code for possible problems.

Usage

```
checkUsage(fun, name = "<anonymous>", report = cat, all = FALSE,
           suppressLocal = FALSE, suppressParamAssigns = !all,
           suppressParamUnused = !all, suppressFundefMismatch = FALSE,
           suppressLocalUnused = FALSE, suppressNoLocalFun = !all,
           skipWith = FALSE, suppressUndefined = dfltSuppressUndefined,
           suppressPartialMatchArgs = TRUE)
checkUsageEnv(env, ...)
checkUsagePackage(pack, ...)
```

Arguments

fun	closure.
name	character; name of closure.
env	environment containing closures to check.
pack	character naming package to check.
...	options to be passed to checkUsage.
report	function to use to report possible problems.
all	logical; report all possible problems if TRUE.
suppressLocal	suppress all local variable warnings.
suppressParamAssigns	suppress warnings about assignments to formal parameters.
suppressParamUnused	suppress warnings about unused formal parameters.
suppressFundefMismatch	suppress warnings about multiple local function definitions with different formal argument lists
suppressLocalUnused	suppress warnings about unused local variables
suppressNoLocalFun	suppress warnings about using local variables as functions with no apparent local function definition
skipWith	logical; if true, do no examine code portion of with expressions.
suppressUndefined	suppress warnings about undefined global functions and variables.
suppressPartialMatchArgs	suppress warnings about partial argument matching

Details

checkUsage checks a single R closure. Options control which possible problems to report. The default settings are moderately verbose. A first pass might use suppressLocal=TRUE to suppress all information related to local variable usage. The suppressXYZ values can either be scalar logicals or character vectors; then they are character vectors they only suppress problem reports for the variables with names in the vector.

checkUsageEnv and checkUsagePackage are convenience functions that apply checkUsage to all closures in an environment or a package. checkUsagePackage requires that the package be loaded. If the package has a name space then the internal name space frame is checked.

Author(s)

Luke Tierney

Examples

```
checkUsage(checkUsage)
checkUsagePackage("codetools",all=TRUE)
## Not run: checkUsagePackage("base",suppressLocal=TRUE)
```

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codetools *Low Level Code Analysis Tools for R*

Description

These functions provide some tools for analysing R code. Mainly intended to support the other tools in this package and byte code compilation.

Usage

```
collectLocals(e, collect)
collectUsage(fun, name = "<anonymous>", ...)
constantFold(e, env = NULL, fail = NULL)
findFuncLocals(formals, body)
findLocals(e, envir = .BaseEnv)
findLocalsList(elist, envir = .BaseEnv)
flattenAssignment(e)
getAssignedVar(e)
isConstantValue(v, w)
makeCodeWalker(..., handler, call, leaf)
makeLocalsCollector(..., leaf, handler, isLocal, exit, collect)
makeUsageCollector(fun, ..., name, enterLocal, enterGlobal, enterInternal,
                   startCollectLocals, finishCollectLocals, warn,
                   signal)
walkCode(e, w = makeCodeWalker())
```

Arguments

e	R expression.
elist	list of R expressions.
v	R object.
fun	closure.
formals	formal arguments of a closure.

body	body of a closure.
name	character.
env	character.
envir	environment.
w	code walker.
...	extra elements for code walker.
collect	function.
fail	function.
handler	function.
call	function.
leaf	function.
isLocal	function.
exit	function.
enterLocal	function.
enterGlobal	function.
enterInternal	function.
startCollectLocals	function.
finishCollectLocals	function.
warn	function.
signal	function.

Author(s)

Luke Tierney

`findGlobals` *Find Global Functions and Variables Used by a Closure*

Description

Finds global functions and variables used by a closure.

Usage

```
findGlobals(fun, merge = TRUE)
```

Arguments

fun	function object; usually a closure.
merge	logical

Details

The result is an approximation. R semantics only allow variables that might be local to be identified (and event that assumes no use of `assign` and `rm`).

Value

Character vector if `merge` is true; otherwise, a list with `functions` and `variables` character vector components. Character vectors are of length zero For non-closures.

Author(s)

Luke Tierney

Examples

```
findGlobals(findGlobals)
findGlobals(findGlobals, merge = FALSE)
```

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showTree *Print Lisp-Style Representation of R Expression*

Description

Prints a Lisp-style representation of R expression. This can be useful for understanding how some things are parsed.

Usage

```
showTree(e, write = cat)
```

Arguments

`e`	R expression.
`write`	function of one argument to write the result.

Author(s)

Luke Tierney

Examples

```
showTree(quote(-3))
showTree(quote("x"<-1))
showTree(quote("f"(x)))
```

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