Package 'mcparallelDo'

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Type Package

Title A Simplified Interface for Running Commands on Parallel Processes

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Description Provides a function that wraps mcparallel() and mccollect() from 'parallel' with temporary variables and a task handler. Wrapped in this way the results of an mcparallel() call can be returned to the R session when the fork is complete without explicitly issuing a specific mccollect() to retrieve the value. Outside of top-level tasks, multiple mcparallel() jobs can be retrieved with a single call to mcparallelDoCheck().

License GPL-2

Suggests testthat, covr

RoxygenNote 5.0.1

Imports parallel, R.utils, checkmate (>= 1.6.3), R6

URL https://github.com/drknexus/mcparallelDo

BugReports https://github.com/drknexus/mcparallelDo/issues

NeedsCompilation no

Repository CRAN

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R topics documented:

`mcparallelDo-package` *mcparallelDo-package placeholder*

Description

Asynchronous Exploritory Data Analysis

Details

The primary function of this package is mcparallelDo(). To use mcparallelDo(), simply invoke the function with a curly braced wrapped code and the character element name to which you want to assign the results.

`checkIfJobStillRunning` *checkIfJobStillRunning*

Description

checkIfJobStillRunning

Usage

```
checkIfJobStillRunning(targetJob, targetValue, verbose, targetEnvironment)
```

Arguments

`targetJob`	(character) The job name
`targetValue`	(character) The return variable name
`verbose`	(logical) Whether a message will be generated when complete
`targetEnvironment`	(environment) Target environment

Value

logical; TRUE if still running; FALSE if not running

jobCompleteSelfDestructingHandler *jobCompleteDestructingHandler*

Description

Creates a callback handler function that can be added via addTaskCallback(). These functions run at the end of each completed R statement. This particular handler watches for the completion of the target job, which is created via mcparallel()

Usage

```
jobCompleteSelfDestructingHandler(targetJob, targetValue, verbose,
  targetEnvironment)
```

Arguments

`targetJob`	(character) Name of the mcparallel job variable that is waiting for a result
`targetValue`	A character element indicating the variable that the result of that job should be assigned to targetEnvironment
`verbose`	A boolean element; if TRUE the completion of the fork expr will be accompanied by a message
`targetEnvironment`	The environment in which you want targetValue to be created

Value

callback handler function

mcparallelDo *mcparallelDo*

Description

This function creates a fork, sets the variable named `targetValue` in the `targetEnvironment` to NULL, evaluates a segment of code evaluated in the fork, and the result of the fork returned in a variable named `targetValue` in the `targetEnvironment` after the next top-level command completes. If there is an error in the code, the returned variable will be a `try-error`. These effects are accomplished via the automatic creation and destruction of a taskCallback and other functions inside the mcparallelDoManager. If job results have to be collected before you return to the top level, use mcparallelDoCheck.

%mdpDo% Is an alternate form of calling the function, as if it were an assignment operator. See examples.

Usage

```
mcparallelDo(code, targetValue, verbose = TRUE,
  targetEnvironment = .GlobalEnv)

targetValue %mcpDo% code
```

Arguments

code	The code to evaluate within a fork wrapped in
targetValue	A character element indicating the variable that the result of that job should be assigned to targetEnvironment
verbose	A boolean element; if TRUE the completion of the fork expr will be accompanied by a message
targetEnvironment	The environment in which you want targetValue to be created

Value

If verbose is set to TRUE, then the character variable name of the job. This can be manually collected via mccollect or, if on Windows, an empty string. If verbose is set to FALSE, then NULL.

Examples

```
## Create data
data(ToothGrowth)
## Trigger mcparallelDo to perform analysis on a fork
mcparallelDo({glm(len ~ supp * dose, data=ToothGrowth)},"interactionPredictorModel")
## Do other things
binaryPredictorModel <- glm(len ~ supp, data=ToothGrowth)
gaussianPredictorModel <- glm(len ~ dose, data=ToothGrowth)
## The result from mcparallelDo returns in your targetEnvironment,
## e.g. .GlobalEnv, when it is complete with a message (by default)
summary(interactionPredictorModel)

# Example of not returning a value until we return to the top level
for (i in 1:10) {
  if (i == 1) {
    mcparallelDo({2+2}, targetValue = "output")
  }
  if (exists("output")) print(i)
}

# Example of getting a value without returning to the top level
for (i in 1:10) {
  if (i == 1) {
    mcparallelDo({2+2}, targetValue = "output")
  }
  mcparallelDoCheck()
  if (exists("output")) print(i)
```

```
}

# Example of dispatching as assignment
targetValueWithoutQuotes %mcpDo% sample(LETTERS, 10)
```

`mcparallelDoCheck` *mcparallelDoCheck*

Description

Forces a check on all mcparallelDo() jobs and returns their values to the target environment if they are complete.

Usage

```
mcparallelDoCheck()
```

Value

A named logical vector, TRUE if complete, FALSE if not complete, and an empty logical vector if on Windows

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`mcparallelDoManagerClass`
The mcparallelDoManager Class and Object

Description

The mcparallelDoManager Class and Object

Usage

```
mcparallelDoManagerClass
```

Format

An object of class `R6ClassGenerator` of length 24.

Index