Package 'BiocBaseUtils'

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Title Utility and internal functions for Bioconductor packages

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`BiocBaseUtils-package` *BiocBaseUtils: Utility and internal functions for Bioconductor packages*

Description

The package coalesces typical helper functions that are scattered throughout the Bioconductor ecosystem. It aims to reduce code redundancy by formalizing functions often used by Bioconductor developers. These functions include operations such as replacing slots in an object, selecting observations for show methods, labeling function life cycles, and more.

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See Also

Useful links:

- https://www.github.com/Bioconductor/BiocBaseUtils
- Report bugs at https://www.github.com/Bioconductor/BiocBaseUtils/issues

askUserYesNo *Ask user for a yes/no response*

Description

Ask user for a yes/no response

Usage

```
askUserYesNo(prompt, interactive.only = TRUE)
```

Arguments

prompt	character() A close-ended yes or no question to pose to the user e.g., "Do you want to continue?". Note that the question must include a question mark (?).
interactive.only	logical(1) If TRUE, the function will only prompt the user when the R session is interactive. If FALSE, the function will always prompt the user.

Value

TRUE when user replies with 'yes' to prompt, FALSE when 'no'

Author(s)

Martin M.

Examples

```
askUserYesNo("Do you want to continue?")
```

Assertions *Suite of helper functions to test for types*

Description

These are a group of helper functions that allow the developer to easily check for common data types in Bioconductor. These include logical, character, and numeric (& integer).

Usage

```
isTRUEorFALSE(x, na.ok = FALSE)

isScalarCharacter(x, na.ok = FALSE, zchar = FALSE)

isScalarInteger(x, na.ok = FALSE)

isScalarNumber(x, na.ok = FALSE, infinite.ok = FALSE)
```

```
isScalarLogical(x, na.ok = FALSE)

isCharacter(x, na.ok = FALSE, zchar = FALSE)

isZeroOneCharacter(x, na.ok = FALSE, zchar = FALSE)
```

Arguments

x	The input vector whose type is to be checked
na.ok	logical(1L) Whether it is acceptable to consider NA type inputs (default: FALSE).
zchar	logical(1L) Whether is is acceptable to consider 'zero' characters as defined by nchar, e.g., nchar("") (default: FALSE).
infinite.ok	logical(1L) Whether it is acceptable to consider infinite values as identified by is.finite (default: FALSE).

Details

Some functions such as isScalarCharacter allow exceptions to the type checks via the na.ok and zchar arguments. Others, for example isScalarNumber can permit Inf with the infinite.ok argument.

Value

Either TRUE or FALSE

Functions

- isTRUEorFALSE(): Is the input a single logical vector?
- isScalarCharacter(): Is the input a single character vector?
- isScalarInteger(): Is the input a single integer vector?
- isScalarNumber(): Is the input a single numeric vector?
- isScalarLogical(): Is the input a single logical vector?
- isCharacter(): Is the input a character vector?
- isZeroOneCharacter(): Is the input a character vector of zero or one length?

Author(s)

M. Morgan, H. Pagès

Examples

```
isTRUEorFALSE(TRUE)
isTRUEorFALSE(FALSE)
isTRUEorFALSE(NA, na.ok = TRUE)

isScalarCharacter(LETTERS)
isScalarCharacter("L")
isCharacter(LETTERS)
isCharacter(NA_character_, na.ok = TRUE)
isZeroOneCharacter("")
isZeroOneCharacter("", zchar = TRUE)
```

```
isScalarInteger(1L)
isScalarInteger(1)

isScalarNumber(1)
isScalarNumber(1:2)
```

---

checkInstalled *Check packages are installed otherwise suggest*

Description

checkInstalled allows to check if a package is installed. If the package is not available, a convenient copy-and-paste message is provided for package installation with BiocManager. The function is typically used within functions that check for package availability from the Suggests field.

Usage

```
checkInstalled(pkgs)
```

Arguments

pkgs	character() package names required for a function

Value

TRUE if all packages are installed, otherwise stops with a message and suggests installation of missing packages

Author(s)

M. Morgan, M. Ramos

Examples

```
if (interactive()) {
    checkInstalled(
        c("BiocParallel", "SummarizedExperiment")
    )
}
```

`lifeCycle` *Set the life cycle stage of a function*

Description

The `lifeCycle` function is used to set the life cycle stage of a function. It is to be used within the body of the function that is being deprecated or defunct. It is a wrapper around both `.Deprecated` and `.Defunct` base R functions.

Usage

```
lifeCycle(
  newfun = oldfun,
  newpackage,
  package,
  cycle = c("deprecated", "defunct"),
  title = package
)
```

Arguments

`newfun`	`character(1)` The name of the function to use instead. It can be a specific function within another package (e.g., `package::function`) or a function in the current package (e.g., `function`). If `newfun` is not specified, the calling function `oldfun` is assumed to be the replacement.
`newpackage`	`character(1)` If a function is moved to a new package, the name of the new package can be specified here. This is equivalent to specifying `newfun = paste0(newpackage, "::", newfun)`.
`package`	`character(1)` The name of the package where the deprecated or defunct function resides. It corresponds to the package from where the `lifeCycle` function is called.
`cycle`	`character(1)` The life cycle stage of the function. This can be either `"deprecated"` or `"defunct"`.
`title`	`character(1)` The Rd name prefix of the documentation page where deprecated or defunct functions are documented (e.g., "summary" for "summary-deprecated"). By default, the package name is used.

Value

Called for the side effect of issuing a warning or error message when a function is deprecated or defunct, respectively. The message includes the name of the function, the life cycle stage, and a suggestion for an alternative function to use.'

Examples

```
test_fun <- function() {
    lifeCycle(newfun = "new_test", package = "BiocBaseUtils")
}
## catch warning and convert to message
tryCatch(test_fun(), warning = function(w) message(w))
```

```
test_fun <- function() {
    lifeCycle(
        newfun = "new_test", package = "BiocBaseUtils", cycle = "defunct"
    )
}
## catch error and convert to message
tryCatch(test_fun(), error = function(e) message(e))
```

`selectSome` *Select and return only some entries from a vector*

Description

`selectSome` works well in `show` methods. It abbreviates a vector input depending on the `maxToShow` argument.

Usage

```
selectSome(
  obj,
  maxToShow = 5,
  ellipsis = "...",
  ellipsisPos = c("middle", "end", "start"),
  quote = FALSE
)
```

Arguments

`obj`	character() A vector to be abbreviated for display purposes
`maxToShow`	numeric(1) The maximum number of values to show in the output (default: 5)
`ellipsis`	character(1) The symbol used to abbreviate values in the vector (default: "...")
`ellipsisPos`	character(1) The location for the ellipsis in the output, by default in the `"middle"` but can be moved to either the `"end"` or the `"start"`.
`quote`	logical(1) Whether or not to add a single quote around the `obj` input. This only works for character type inputs.

Value

An abbreviated output of `obj`

Author(s)

M. Morgan, H. Pagès

Examples

```
letters
```

```
selectSome(letters)
```

`setSlots` *Convenience function to set slot values*

Description

Given the current object, the function `setSlots` will take name-value pair inputs either as named arguments or a `list` and replace the values of the specified slots. This is a convenient function for updating slots in an S4 class object.

Usage

```
setSlots(object, ..., check = TRUE)
```

Arguments

`object`	An S4 object with slots to replace
`...`	Slot name and value pairs either as named arguments or a named list, e.g., `slotName = value`.
`check`	logical(1L) Whether to run validObject after the slot replacement

Value

The object input with updated slot data

Author(s)

H. Pagès

Examples

```
setClass("A", representation = representation(slotA = "character"))

aclass <- new("A", slotA = "A")

setSlots(aclass, slotA = "B")
```

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