

# webbioc

October 25, 2011

---

`installReps`                    *Install all repository packages*

---

## Description

Using `reposTools`, install/update all packages from given repositories.

## Usage

```
installReps(repNames = "aData", lib = .libPaths()[1],
            type = getOption("pkgType"))
```

## Arguments

<code>repNames</code>	A character vector containing repository names. A listing of known repository names can be found with the <code>getReposOption()</code> function.
<code>lib</code>	A path to install/update the packages. If this directory does not exist, it will be created (if possible).
<code>type</code>	type of package do download

## Author(s)

Colin A. Smith <webbioc@colinsmith.org>

---

`mt.wrapper`                    *Multiple Testing Wrapper Function*

---

## Description

A wrapper for some of the functionality for the `multtest` package. It also includes hooks to calculate q-values with John D. Storey's 'q-value.R' code.

## Usage

```
mt.wrapper(proc, X, classlabel, test="t", rawpcalc="Parametric", side="abs", ...)
```

**Arguments**

<code>proc</code>	A character string containing the name of the multiple testing procedure for which adjusted $p$ -values are to be computed. This vector should include any of the following: "Bonferroni", "Holm", "Hochberg", "SidakSS", "SidakSD", "BH", "BY", "maxT", "minP", "q".
<code>X</code>	A data frame or matrix, with $m$ rows corresponding to variables (hypotheses) and $n$ columns to observations. In the case of gene expression data, rows correspond to genes and columns to mRNA samples. The data can be read using <code>read.table</code> .
<code>classlabel</code>	A vector of integers corresponding to observation (column) class labels. For $k$ classes, the labels must be integers between 0 and $k - 1$ . For the <code>blockf</code> test option, observations may be divided into $n/k$ blocks of $k$ observations each. The observations are ordered by block, and within each block, they are labeled using the integers 0 to $k - 1$ .
<code>test</code>	A character string specifying the statistic to be used to test the null hypothesis of no association between the variables and the class labels. If <code>test="t"</code> , the tests are based on two-sample Welch t-statistics (unequal variances). If <code>test="t.equalvar"</code> , the tests are based on two-sample t-statistics with equal variance for the two samples. The square of the t-statistic is equal to an F-statistic for $k = 2$ . If <code>test="wilcoxon"</code> , the tests are based on standardized rank sum Wilcoxon statistics. If <code>test="f"</code> , the tests are based on F-statistics. If <code>test="paired"</code> , the tests are based on paired t-statistics. The square of the paired t-statistic is equal to a block F-statistic for $k = 2$ . If <code>test="blockf"</code> , the tests are based on F-statistics which adjust for block differences (cf. two-way analysis of variance).
<code>rawpcalc</code>	A character string specifying how to calculate nominal/raw $p$ -values. The possible choices are "Parametric" or "Permutation".
<code>side</code>	A character string specifying the type of rejection region. If <code>side="abs"</code> , two-tailed tests, the null hypothesis is rejected for large absolute values of the test statistic. If <code>side="upper"</code> , one-tailed tests, the null hypothesis is rejected for large values of the test statistic. If <code>side="lower"</code> , one-tailed tests, the null hypothesis is rejected for small values of the test statistic.
<code>...</code>	Further arguments for <code>mt.maxT</code> , <code>mt.minP</code> , <code>qvalue</code> .

**Value**

A data frame with components

<code>index</code>	Vector of row indices, between 1 and <code>nrow(X)</code> , where rows are sorted first according to their adjusted $p$ -values, next their unadjusted $p$ -values, and finally their test statistics.
<code>teststat</code>	Vector of test statistics, ordered according to <code>index</code> . To get the test statistics in the original data order, use <code>teststat[order(index)]</code> .
<code>rawp</code>	Vector of raw (unadjusted) $p$ -values, ordered according to <code>index</code> .
<code>adjp</code>	Vector of adjusted $p$ -values, ordered according to <code>index</code> .

`plower`

For `mt.minP` function only, vector of "adjusted  $p$ -values", where ties in the permutation distribution of the successive minima of raw  $p$ -values with the observed  $p$ -values are counted only once. Note that procedures based on `plower` do not control the FWER. Comparison of `plower` and `adjp` gives an idea of the discreteness of the permutation distribution. Values in `plower` are ordered according to `index`.

**Author(s)**

Colin A. Smith <[webbioc@colinsmith.org](mailto:webbioc@colinsmith.org)>

# Index

## \*Topic file

installReps, 1  
mt.wrapper, 1

installReps, 1

mt.minP, 3  
mt.wrapper, 1

read.table, 2