andzinskihw6 vignette

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andzinskihw6 contains solutions for homework 6 of ”Advanced data analysis software development with R” e-learning course organised by IPI PAN. It constitutes the crowning achievement of hard work during the whole course :)

Contents

1 Introduction

Package `andzinskihw6` is loaded by

```
library(andzinskihw6)

##
## Attaching package:  'andzinskihw6'
##
## The following objects are masked from 'package:base':
```

```
##
##     mode, simplify2array
```

This vignette demostrates a few examples of the `andzinskihw6` functions usage.

2 mode() function

`mode()` function takes a numeric vector as an arguments and returns the most frequent value in given numeric vector.

```
mode(c(1,1,2))

## [1] 1
```

All `NA` values are omitted:

```
mode(c(1,1,NA,NA,2,NA,NA))

## [1] 1
```

If given x numeric vector contains only `NA` values, then `NA` value is returned:

```
mode(c(NA,NA,NA,NA))

## [1] NA
```

3 simplify2array() function

Function `simplify2array()` transforms given list `x` into a matrix if all elemetns of the list are of the same length. If that length equals to 1 then a numeric vector is returned instead of matrix.

```
simplify2array(list(c(1,2),c(3,4)))

##      [,1] [,2]
## [1,]    1    3
## [2,]    2    4
```

```
simplify2array(list(c(1),c(2)))

## [1] 1 2

simplify2array(list(c(1,2,3)))

##      [,1]
## [1,]    1
## [2,]    2
## [3,]    3
```

Function `simplify2array()` mimics behaviour of `base::simplify2array()` function, however comparing to the latter its capabilities are limited. `andzinskihw6::simplify2array()` function copes well with numeric and logical values, however, unlike `base::simplify2array()` it doesn't support charater vectors. In some cases this drawback may be compensated by slightly faster execution (see: benchmark vignette).

```
simplify2array(list(c(1,2),c("a","b")))

## [[1]]
## [1] 1 2
##
## [[2]]
## [1] "a" "b"

base::simplify2array(list(c(1,2),c("a","b")))

##      [,1] [,2]
## [1,] "1"  "a"
## [2,] "2"  "b"
```

4 ass() function

This function for some given integer `n` generates all possible 0-1 assignment vectors of `2n` survey participants in such a way that exactly n of them are assigned to group 0 (control) and the other `n` ones are assigned to group 1 (treatment).

```
ass(2)
```

```
##      [,1] [,2] [,3] [,4]
## [1,]    1    1    0    0
## [2,]    1    0    1    0
## [3,]    0    1    1    0
## [4,]    1    0    0    1
## [5,]    0    1    0    1
## [6,]    0    0    1    1
```

4.1 Remark on outpus size

WARNING! This function produces big output that consumes a lot of memory (see: benchmark vignette).