Package 'pbbd'

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Title Position Balanced and Nearly Position Balanced Block Designs

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Depends R (>= 4.1.0)

Imports ibd (>= 1.5)

Description Generates a position balanced or nearly position balanced block design with given parameters. This package can also convert a given proper and equireplicate block design into a position balanced or nearly position balanced block design.

License GPL (>= 2)

NeedsCompilation no

Repository CRAN

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Contents

balancify *Position balanced and nearly position balanced block design*

Description

This function generates a position balanced or nearly position balanced block design from a given equireplicate and proper block design

Usage

```
balancify(d1)
```

Arguments

d1	Block design specified in the form of a b x k matrix with elements labelled as 1 to v where b is number of blocks, k is block size and v is number of treatments

Value

design	(Nearly) position balanced block design
P	Treatment by Position incidence matrix

Note

Input design should be equireplicate that is, each treatment should have equal replications. Block sizes should be same for each block. For any issue, kindly report to author.

Author(s)

B N Mandal <mandal.stat@gmail.com>

Examples

```
d1 = matrix(c(3,  4,    6,
5,    6,    7,
1,   4,    5,
2,    4,    7,
1,    3,    7,
1,    2,    6,
2,    3,    5), ncol = 3, byrow = TRUE)
balancify(d1)

d1 = matrix(c(7 ,8 ,9 ,
              1 ,6 ,8 ,
              1 ,3 ,9 ,
              4 ,6 ,9 ,
              5 ,6 ,7 ,
              1 ,4 ,5 ,
              3 ,5 ,8 ,
```

```
               3 ,4 ,7 ,
               2 ,5 ,9 ,
               2 ,4 ,8 ,
               1 ,2 ,7 ,
               2 ,3 ,6), ncol = 3, byrow = TRUE)
balancify(d1)
```

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pbbd *Position balanced and nearly position balanced block design*

Description

This function generates a position balanced or nearly position balanced block design with given parameters. User needs to specify number of treatments (v), number of blocks (b) and block size (k)

Usage

```
pbbd(v, b, k)
```

Arguments

v	Number of treatments
b	Number of blocks
k	Block size

Value

parameters	Parameters v,b,r,k. Here r is number of replications of each treatment
efficiencies	A- and D-efficiency of the design generated
design	Position balanced block design
P	Treatment verus position incidence matrix

Note

This function works for generating a position balanced block design for upto 30 treatments and block size 10. For getting design with larger number of treatments and/or block size, it is better to use balancify() function with a design supplied by user to make the design position balanced.

Author(s)

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Examples

```
pbbd(7,7,3)

pbbd(9,12,3)
```

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