

# Package: pbbd (via r-universe)

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**Version** 1.0.0

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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

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**Repository** <https://doer0.r-universe.dev>

**RemoteUrl** <https://github.com/cran/pbbd>

**RemoteRef** HEAD

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 balancify

*Position balanced and nearly position balanced block design*


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**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

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*Position balanced and nearly position balanced block design*


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### 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 versus 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)

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

### Examples

```
pbbd(7, 7, 3)
```

```
pbbd(9, 12, 3)
```

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