# Package: hrtlFMC (via r-universe)

March 9, 2025

**Type** Package

**Title** Half Replicate of Two Level Factorial Run Order with Minimum Level Changes

**Version** 0.1.0

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**Description** It is used to construct run sequences with minimum changes for half replicate of two level factorial run order. Experimenter can save time and resources by minimizing the number of changes in levels of individual factor and therefore the total number of changes. It consists of the function minimal_hrtlf(). This technique can be employed to any half replicate of two level factorial run order where the number of factors are greater than two. In Design of Experiments (DOE) theory, two level of a factor can be represented as integers e.g. - 1 for low and 1 for high. User is expected to enter total number of factors to be considered in the experiment. minimal_hrtlf() provides the required run sequences for the input number of factors. The output also gives the number of changes of each factor along with total number of changes in the run sequence. Due to restricted randomization the minimally changed run sequences of half replicate of two level factorial run order will be affected by trend effect. The output also provides the Trend Factor value of the run order. Trend factor value will lies between 0 to 1. Higher the values, lesser the influence of trend effects on the run order.

**License** GPL-3

**Imports** FMC

**Encoding** UTF-8

**NeedsCompilation** no

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**Date/Publication** 2024-08-30 10:50:11 UTC

**Repository** https://bijoy231997.r-universe.dev

**RemoteUrl** https://github.com/cran/hrtlFMC

**RemoteRef** HEAD

**RemoteSha** 73936c5cd505ad5ecf012331d489958ae1476580

# Contents



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`minimal_hrtlf` *Half Replicate of Two Level Factorial Run Order with Minimum Level Changes*

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## Description

Generate cost effective minimally changed run sequences for half replicate of two level factorial run order

## Usage

```
minimal_hrtlf(Number_of_Factors)
```

## Arguments

`Number_of_Factors`
: Number of factors must be greater than 2

## Value

Returns minimally changed run sequences for half replicate of two level factorial run order along with factor wise change, total change and Trend Factor value.

## References

Arpan Bhowmik, Eldho Varghese, Seema Jaggi and Cini Varghese (2015). Factorial experiments with minimum changes in run sequences. Journal of the Indian Society of Agricultural Statistics. 69(3), 243-255.\ Arpan Bhowmik, Eldho Varghese, Seema Jaggi and Cini Varghese (2017). Minimally changed run sequences in factorial experiments. Communications in Statistics - Theory and Methods, 46(15), 7444-7459.\ Arpan Bhowmik, Eldho Varghese, Seema Jaggi and Cini Varghese (2022). On the generation of factorial designs with minimum level changes. Communication in Statistics –Simulation and Computation, 51(6), 3400-3409.\ Bijoy Chanda, Arpan Bhowmik, Seema Jaggi, Eldho Varghese, Anindita Datta, Cini Varghese, Namita Das Saha, Arti Bhatia and Bidisha Chakrabarti (2021). Minimal cost multifactor experiments for agricultural research involving hard-to-change factors. The Indian Journal of Agricultural Sciences, 91 (7), 97-100.\ Bijoy Chanda, Arpan Bhowmik, Seema Jaggi, Eldho Varghese and Anindita Datta (2021). Cost Effective

Two Level Factorial Run Orders for Agricultural Experimentation. Journal of Community Mobilization and Sustainable Development, 16 (3), 668-672\ Lieven Tack and Martina Vandebroek (2001). (Dt,C)-optimal run orders. Journal of Statistical Planning and Inference, 98, 293-310.

## Examples

```
minimal_hrtlf(3)
```

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