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data.gen {AMC}
R Documentation

Imaginary data generator

Description:

Generates a two-factor randomized blocks factorial design data frame.

Usage:

```
data.gen(nb,int,varb,vare,efA,efB,efAB)
```

Arguments:

nb Number of blocks.
int intercept (theoretic control mean).
varb, sets the differences between blocks means and the error term,
respectively.
vare
efA, sets the effect of factors A and B and the interaction effects from
combination of both
efB, factors.
efAB

Details:

Data frame is constructed based on a linear model as follows: $y \sim a + b*x + c*z + d*xz + \text{block} + e$,
where x is the factor A, z is the factor B, xz is the interaction between
them, block is the block
effect, and e is the error term.
Block effect is treated as a random factor whereas A and B are fixed ones.

Value:

The factors created are in the form of dummy variables, considering two
possible levels to each
factor: presence (1) or absence (0) of a treatment.
The response variable is called "resp" and is rounded two decimal places.

Warning:

The distribution used to generate data are the Gaussian one and the
variances among groups are
homogeneous.

Block effect is not allowed to interact with the other two factors, once there are no replication within each block.

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References:

Gotelli, N. J. and Ellison, A. M. (2004) A primer of ecological statistics. Sinauer Associates.

See also:

anova.power to test ANOVA power against different number of blocks, variance values etc.

Examples:

```
data=data.gen(10,50,8,3,12,15,5)
mod=aov(resp ~ A*B + Error(bloco/(A*B)),data=data)
summary(mod)
```

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