

Package ‘golfr’

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Type Package

Title Group Assignment Tool

Version 0.1.0

Description An efficient algorithm to generate group assignments for classroom settings while minimizing repeated pairings across multiple rounds.

License GPL-3

Encoding UTF-8

RoxygenNote 7.3.2

NeedsCompilation no

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GenerateData	<i>Generates test data frame of the students with unique ID (uppercase letters)</i>
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Description

Generates test data frame of the students with unique ID (uppercase letters)

Usage

```
GenerateData(num_students)
```

Arguments

num_students a positive integer.

Value

a data frame

Examples

```
# five students
GenerateData(5)
```

groupassign	<i>Assign Groups and Update Interaction Matrix</i>
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Description

Assign Groups and Update Interaction Matrix

Usage

```
groupassign(student_data, students_per_group, iterations)
```

Arguments

student_data A data frame containing student identifiers. The column should be named 'Student'.

students_per_group An integer specifying the number of students per group.

iterations An integer defining how many rounds of group assignments should be performed.

Value

A matrix representing the interaction history of students, where each cell indicates the number of times two students have been grouped together.

Examples

```
n_students <- 4
student_data <- GenerateData(n_students)
students_per_group <- 2
iterations <- 3

matrices_df <- groupassign(student_data, students_per_group, iterations)
matrices_df
```

initmat	<i>Generates initial matrix</i>
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Description

Generates initial matrix

Usage

```
initmat(students)
```

Arguments

students a column of a dataset that has students' unique IDs

Value

matrix

Examples

```
# Initial matrix 5x5
data <- GenerateData(5)
initmat(data$Student)
```

MakeGroups	<i>Assign every student into groups with set number of students per group</i>
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Description

Assign every student into groups with set number of students per group, with set number of iterations (overlap not considered)

Usage

```
MakeGroups(data, students_per_group, iterations, initial_matrix)
```

Arguments

data a data frame
students_per_group a positive integer
iterations a positive integer
initial_matrix matrix generated with ‘initmat()’

Value

data frame

Examples

```
# Assign 9 students into 3 groups of 3, with 3 iterations
data <- GenerateData(9)
M <- initmat(data$Student)
MakeGroups(data, 3, 3, M)
```

updatemat	<i>Update Interaction Matrix with Group Assignments</i>
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Description

This function updates an existing interaction matrix based on new group assignments. It increments the matrix values to track how often students have been grouped together.

Usage

```
updatemat(initialmat, group_assignments, students)
```

Arguments

- `initialmat` A square matrix where rows and columns represent students, and cell values track the number of times two students have been grouped together.
- `group_assignments` A vector indicating the group assignments for each student.
- `students` A vector containing student identifiers corresponding to the matrix row and column names.

Value

An updated matrix reflecting the new group assignments.

Examples

```
n_students <- 4
student_data <- GenerateData(n_students)
initial_matrix <- initmat(student_data$Student)
group_assignments <- c(1, 1, 2, 2) # Example group assignments

updated_matrix <- updatemat(initial_matrix, group_assignments, student_data$Student)
updated_matrix
```

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