

Package ‘Ymisc’

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Type Package

Title Miscellaneous Functions

Version 0.1.0

Maintainer Yoo Ri Hwang <yrhwang89@gmail.com>

Description The Author's personal R Package that contains miscellaneous functions.
The current version of package contains miscellaneous functions for brain data to compute Asymmetry Index (AI) and bilateral (L+R) measures and reshape the data.

License GPL (>= 2)

Encoding UTF-8

LazyData true

Depends R (>= 3.5.0)

RoxygenNote 7.2.3

Suggests testthat (>= 3.0.0)

Config/testthat/edition 3

Imports stats

NeedsCompilation no

Author Yoo Ri Hwang [aut, cre]

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`compute_AI`*The brain asymmetry index (AI)*

Description

AI formula = $[(\text{left}-\text{right})/(\text{left}+\text{right})]$. `compute_AI()` creates new columns that are AIs of the brain measures using the most widely-used formula.

Usage

```
compute_AI(  
  data = sample_data,  
  left_hemisphere = "lh",  
  right_hemisphere = "rh",  
  separator = "_",  
  ID = "ID",  
  hemisphere = "prefix",  
  start,  
  end  
)
```

Arguments

<code>data</code>	The wide format data
<code>left_hemisphere</code>	The prefix or suffix that indicates the left hemisphere in the variable names
<code>right_hemisphere</code>	The prefix or suffix string that indicates the right hemisphere in the variable names
<code>separator</code>	A character vector that separates characters in the variable names.
<code>ID</code>	The column of identifiers.
<code>hemisphere</code>	The character vector that indicates whether a hemisphere indicator in the variable names is a prefix or suffix.
<code>start</code>	The column that specifies the starting point of a set of variables to calculate the AIs.
<code>end</code>	The column that specifies the endpoint of a set of variables to calculate the AIs.

Value

The data with AIs.

Examples

```

data(sample_data)

compute_AI(sample_data,
  left_hemisphere = "lh",
  right_hemisphere = "rh",
  separator="_",
  ID="ID",
  hemisphere="prefix",
  start="lh_Thalamus",
  end="rh_AccumbensArea")

```

compute_total	<i>the bilateral (Left + Right) measures.</i>
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Description

compute_total() creates new columns that are the bilateral (Left + Right) measures.

Usage

```

compute_total(
  data = sample_data,
  left_hemisphere = "lh",
  right_hemisphere = "rh",
  separator = "_",
  ID = "ID",
  hemisphere = "prefix",
  start,
  end
)

```

Arguments

data	The wide format data
left_hemisphere	The prefix or suffix that indicates the left hemisphere in the variable names
right_hemisphere	The prefix or suffix string that indicate the right hemisphere in the variable names
separator	A character vector that separates characters in the variable names.
ID	The column of identifiers.
hemisphere	The character vector that indicates whether a hemisphere indicator in the variable names is a prefix or suffix.
start	The column that specifies the starting point of a set of variables to calculate the bilateral (L+R) measures.
end	The column that specifies the endpoint of a set of variables to calculate the bilateral (L+R) measures.

Value

The data with the bilateral (L+R) measures.

Examples

```
data(sample_data)

compute_total(sample_data,
  left_hemisphere="lh",
  right_hemisphere="rh",
  separator="_",
  ID="ID",
  hemisphere="prefix",
  start="lh_Thalamus",
  end="rh_AccumbensArea")
```

long	<i>Long Format Sample Data</i>
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Description

Long Format Sample Data

Usage

```
long
```

Format

A long format data frame.

The regional brain measures from left and right hemisphere, attention check, and ID

long2wide	<i>Reshapes the data</i>
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Description

long2wide() is data-resaping function for long format data. This function mainly targets the brain structure data that contains the data from the left and right hemispheres

Usage

```
long2wide(data, ID = "ID", separator = "_", hemisphere = "prefix", start, end)
```

Arguments

data	The long format data.
ID	The column of identifiers.
separator	A character vector that separates characters in the variable names.
hemisphere	The character vector that indicates whether a hemisphere indicator in the variable names is the prefix or suffix. At this point, only a "prefix" option is available.
start	The column that specifies the starting point of a set of variables to be reshaped.
end	The column that specifies the endpoint of a set of variables to be reshaped.

Value

The wide format data

Examples

```
data(long)

long2wide(
  data=long,
  ID="ID",
  separator="_",
  hemisphere="prefix",
  start="region",
  end="rh")
```

sample_data

Wide Format Sample Data

Description

Wide Format Sample Data

Usage

```
sample_data
```

Format

A wide format data frame.

The regional brain measures from left and right hemisphere, attention check, and ID.

wide2long	<i>Reshapes the data</i>
-----------	--------------------------

Description

wide2long() function is data-resaping function for wide format data. This function mainly targets the brain structure data that contains the data from the left and right hemispheres

Usage

```
wide2long(data, ID = "ID", separator = "_", hemisphere = "prefix", start, end)
```

Arguments

data	The wide format data.
ID	The column of identifiers.
separator	A character vector that separates characters in the variable names.
hemisphere	Whether a hemisphere indicator in the variable names is a prefix or suffix. At this point, only the "prefix" option is available.
start	The column that specifies the starting point of a set of variables to be reshaped
end	The column that specifies the endpoint of a set of variables to be reshaped

Value

The long format data

Examples

```
data(sample_data)

long<-wide2long(
  data=sample_data,
  ID="ID",
  separator="_",
  start="lh_Thalamus",
  end="rh_AccumbensArea",
  hemisphere="prefix"
)
```

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