Package 'ClassExample'

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Type Package

Title Functions from Homework 2

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Description More about what it does (maybe more than one line)
Use four spaces when indenting paragraphs within the Description.

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Encoding UTF-8

LazyData true

Imports ggplot2,
dplyr

RoxygenNote 6.0.1

R topics documented:

`movingaverage` *Moving Average*

Description

We created a function that calculates a moving average of a specified window width across a vector.

Usage

```
movingaverage(x = x, side = "both", numbertoside = NULL)
```

Arguments

x	a vector for which you will be calculating the moving average.
side	whether you want to average elements on the left, right, or both sides; should accept the following values: “left”,“right”,“both”.
numbertoside	the number of elements to the side of your index element that you want to include in the moving average.

Details

To create this function, we only used methods that were introduced in either Lecture 1 or Lecture 2.

Value

A list consisting of

Input	input vector
Output	output vector of the moving average

Examples

```
inputdata<-c(0,2.457,3.878,3.663,1.90,-0.658,-2.943,-3.986,-3.349,-1.299,
1.299,3.349,3.986,2.943,0.658,-1.904,-3.663,-3.878,-2.457,0)
movingaverage(x=inputdata,numbertoside=3,side="left")
```

SimTtestPower *Two-Sample Power Calculation Based on Simulation*

Description

Power is the probability we reject the null hypothesis given it is false. Building on this definition, create a function that uses simulations to estimate power for a two-sample T-test.

Usage

```
SimTtestPower(Var1mean = NULL, Var2mean = NULL, Var1sd = NULL,
  Var2sd = NULL, Var1samplesize = NULL, Var2samplesize = NULL,
  nsim = 100, alphalevel = 0.05)
```

Arguments

Var1mean	Variable 1 mean
Var2mean	Variable 2 mean
Var1sd	Variable 1 standard deviation
Var2sd	Variable 2 standard deviation
Var1samplesize	Variable 1 sample size
Var2samplesize	Variable 2 sample size
nsim	Number of simulations
alphalevel	alpha-level (default=0.05)

Details

First, you will need to simulate two normally distributed variables, each with a distinct sample size, mean, and standard deviation, and perform a T-test. For that single simulation, evaluate if we would reject the null hypothesis given a specific alpha-level. Now repeat this simulation many times. Power can then be estimated as the proportion of simulations for which we rejected the null hypothesis.

Value

Empirical power calculation

Examples

```
SimTtestPower(Var1mean=20,Var2mean=22,Var1sd=4,Var2sd=6,
Var1samplesize=40,Var2samplesize=40,nsim=10000,alphalevel=0.05)
```

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