Package 'ggplottimeseries'

February 15, 2019

Type Package

Title Visualisation of Decomposed Time Series with ggplot2

Version 0.1.0

Author Brisneve Edullantes

Maintainer Brisneve Edullantes <bedullantes@up.edu.ph>

Description This package has functions that can plot decomposed time series data with ggplot2.

License CC0

Encoding UTF-8

LazyData true

Imports dplyr, ggplot2, ggthemes, lubridate, forecast, tidyr

RoxygenNote 6.1.1

R topics documented:

---

dts1   *Dataframe for ggplottimeseries*

Description

This function creates a data frame of decomposed time series.

Usage

```
dts1(x, y, z, type = "additive")
```

Arguments

x	a vector of the dates formatted as YYYY-MM-DD
y	a vector of the observed time-series values
z	frequency (the number of observations per unit of time)
type	type of time series, either "additive" (default) or multiplicative

Value

This returns to a dataframe with the components of timeseries

date	date formatted as YYYY-MM-DD
observation	observation of the timeseries
trend	trend component of the timeseries
seasonal	seasonal component of the timeseries
random	random component of the timeseries

Author(s)

Brisneve Edullantes

Examples

```
data(sst)

x <- sst$date
y <- sst$sst
z <- 365.25 #number of days in a year
df <- dts1(x,y,z, type = "additive")

head(df)
```

---

dts2   *Dataframe for ggplottimeseries*

Description

This function converts time series-class data into a data frame of decomposed time series.

Usage

```
dts2(x, type = "additive")
```

Arguments

x	a time series-class data
type	type of time series, either "additive" (default) or multiplicative

Value

This returns to a dataframe with the components of timeseries

date	date formatted as YYYY-MM-DD
observation	observation of the timeseries
trend	trend component of the timeseries
seasonal	seasonal component of the timeseries
random	random component of the timeseries

Author(s)

Brisneve Edullantes

Examples

```
data(co2)
df <- dts2(co2, type ="additive")
head(df)
```

---

ggdecompose   *Visualisation of decomposed time series*

Description

These functions plots the observed, trend, seasonal, and random components of time series into one figure (ggdecompose) or into separate figures (ggobserve, ggtrend, ggseason, ggrandom, respectively). These functions also plots detrended and deseasonalised time series (ggdetrend and ggdeseason, respectively). These can be integrated with ggplot functions.

Usage

```
ggdecompose(x)
ggobserve(x)
ggtrend(x)
ggseason(x)
ggrandom(x)
ggdetrend(x)
ggdeseason(x)
```

Arguments

x	a data frame generated by either dts or dts2 functions.

Value

This returns to a plot.

Author(s)

Brisneve Edullantes

Examples

```
data(co2)
x <- dts2(co2, type ="additive")
#plots decomposed time series into one figure
ggdecompose(x)+
 xlab("Date")+
 ylab("Atmospheric Concentration of CO2")
#plots components of time series into separate figure
ggobserve(x)+
 xlab("Date")+
 ylab("Observed Atmospheric Concentration of CO2")

ggtrend(x)+
 xlab("Date")+
 ylab("Trend of Atmospheric Concentration of CO2")

ggseason(x)+
 xlab("Date")+
 ylab("Seasonality of Atmospheric Concentration of CO2")

ggrandom(x)+
 xlab("Date")+
 ylab("Random Variation of Atmospheric Concentration of CO2")

#plots detrended and deseasonalised Time Series

ggdetrend(x)

ggdeseason(x)
```

sst	*Sea surface temperature data*

Description

Daily sea surface temperature data downloaded from Giovanni

Usage

```
sst
```

Format

a sample dataframe with 2142 observations on the following variables.

date a date vector of the time of the observation

sst a numeric vector

Author(s)

Brisneve Edullantes

Index