

# Package ‘ggplottimeseries’

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**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 plot decomposed time series data with ggplot2.

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**Encoding** UTF-8

**LazyData** true

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

**RoxygenNote** 6.1.1

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dts1	<i>Dataframe for ggplottimeseries</i>
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## 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)
```

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dts2	<i>Dataframe for ggplottimeseries</i>
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**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)
```

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ggdecompose

*Visualisation of decomposed time series*

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**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)
```

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sst

*Sea surface temperature data*

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## 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

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