Package 'forecasteR'

October 13, 2022

Title Time Series Forecast System

Version 1.1.6

Description A web application for displaying, analysing and forecasting univariate time series. Includes basic methods such as mean, naïve, seasonal naïve and drift, as well as more complex methods such as Holt-Winters Box,G and Jenkins, G (1976) <doi:10.1111/jtsa.12194> and ARIMA Brockwell, P.J. and R.A.Davis (1991) <doi:10.1007/978-1-4419-0320-4>.

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Imports DT, golem, config, forecast, htmltools, lubridate, stringr, scales, rlang, shinyjs, shinyAce, echarts4r, htmlwidgets, colourpicker, shinydashboard, shiny (>= 1.7.1), shinycustomloader, shinydashboardPlus (>= 2.0.0)

Depends R (>= 4.0)

Encoding UTF-8

URL https://www.promidat.com

RoxygenNote 7.1.2

NeedsCompilation no

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Repository CRAN

Date/Publication 2022-03-02 19:40:06 UTC

R topics documented:

`calibrar.arima` *Best parameters arima model*

Description

Best parameters arima model

Usage

```
calibrar.arima(train, test, period, ar = 0:2, es = 0:1)
```

Arguments

`train`	a ts object (train of a time series).
`test`	a ts object (test of a time series).
`period`	value indicate the period to use.
`ar`	vector of values to test p, d, q of arima model.
`es`	vector of values to test P, D, Q of arima model.

Value

arima model

Author(s)

Diego Jimenez <diego.jimenez@promidat.com>

Examples

```
calibrar.arima(AirPassengers[1:132], AirPassengers[133:144], 12, 0:1)
```

`calibrar.HW` *Best parameters HoltWinters model*

Description

Best parameters HoltWinters model

Usage

```
calibrar.HW(train, test, paso = 0.1)
```

Arguments

`train`	a ts object (train of a time series).
`test`	a ts object (test of a time series).
`paso`	indicates by value to test alpha, beta and gamma.

Value

HoltWinters model

Author(s)

Diego Jimenez <diego.jimenez@promidat.com>

Examples

```
calibrar.HW(window(AirPassengers, end = c(1959, 12)), window(AirPassengers, start = 1960), 0.5)
```

dfnormal *Data.frame with normal test*

Description

Data.frame with normal test

Usage

```
dfnormal(data)
```

Arguments

data	a data.frame object only with the numeric columns.

Value

data.frame

Author(s)

Diego Jimenez <diego.jimenez@promidat.com>

Examples

```
dfnormal(iris[, -5])
```

df_periods *Periodogram Data.frame*

Description

Periodogram Data.frame

Usage

```
df_periods(x)
```

Arguments

x	a ts object.

Value

data.frame

Author(s)

Diego Jimenez <diego.jimenez@promidat.com>

Examples

```
df_periods(AirPassengers)
```

`e_acf` *Best parameters arima model*

Description

Best parameters arima model

Usage

```
e_acf(x)
```

Arguments

`x`	a ts object.

Value

echarts4r plot

Author(s)

Diego Jimenez <diego.jimenez@promidat.com>

Examples

```
e_acf(AirPassengers)
```

e_decompose *Decompose plot*

Description

Decompose plot

Usage

```
e_decompose(serie, f = NULL, noms = NULL)
```

Arguments

serie	a ts object.
f	vector of dates for the time series.
noms	vector of names for y axis.

Value

echarts4r plot

Author(s)

Diego Jimenez <diego.jimenez@promidat.com>

Examples

```
e_decompose(AirPassengers)
```

e_histnormal *Normal plot*

Description

Normal plot

Usage

```
e_histnormal(
  data,
  colorbar = "steelblue",
  colorline = "gray",
  nombres = c("Histograma", "Curva Normal")
)
```

Arguments

data	a numeric column of a data.frame.
colorbar	a color for the bars.
colorline	a color for the line.
nombres	a character vector of length 2 specifying the titles to use on legend.

Value

echarts4r plot

Author(s)

Diego Jimenez <diego.jimenez@promidat.com>

Examples

```
e_histnormal(iris$Sepal.Length)
```

---

e_pacf *Best parameters arima model*

Description

Best parameters arima model

Usage

```
e_pacf(x)
```

Arguments

x	a ts object.

Value

echarts4r plot

Author(s)

Diego Jimenez <diego.jimenez@promidat.com>

Examples

```
e_pacf(AirPassengers)
```

e_periods *Periodogram Plot*

Description

Periodogram Plot

Usage

```
e_periods(x, p = NULL, noms = NULL)
```

Arguments

x	a ts object.
p	which important period to plot.
noms	vector of lenght 3 to indicate the text to use.

Value

echarts4r plot

Author(s)

Diego Jimenez <diego.jimenez@promidat.com>

Examples

```
e_periods(AirPassengers)
```

e_qq *Qplot + Qline*

Description

Qplot + Qline

Usage

```
e_qq(data, colorpoint = "steelblue", colorline = "gray")
```

Arguments

data	a numeric column of a data.frame.
colorpoint	a color for the points.
colorline	a color for the line.

Value

echarts4r plot

Author(s)

Diego Jimenez <diego.jimenez@promidat.com>

Examples

```
e_qq(iris$Sepal.Length)
```

`e_tc` *Tendencia y Estacionalidad*

Description

Tendencia y Estacionalidad

Usage

```
e_tc(x, d = NULL, noms = c("Time Series", "Trend", "Cyclicality"))
```

Arguments

`x`	a ts object.
`d`	a vector of dates to use on axis x (Optional).
`noms`	a vector of 3 to indicate the names to use on legend.

Value

data.frame

Author(s)

Diego Jimenez <diego.jimenez@promidat.com>

Examples

```
e_tc(AirPassengers)
```

forecasteR *Time Series Forecast System*

Description

A web application for displaying, analysing and forecasting univariate time series. Includes basic methods such as mean, naïve, seasonal naïve and drift, as well as more complex methods such as Holt-Winters Box,G and Jenkins, G (1976) <doi:10.1111/jtsa.12194> and ARIMA Brockwell, P.J. and R.A.Davis (1991) <doi:10.1007/978-1-4419-0320-4>.

Details

Package:	forecasteR
Type:	Package
Version:	1.1.6
Date:	2022-02-28
License:	GPL (>=2)

Author(s)

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- Oldemar Rodriguez Rojas <oldemar.rodriguez@ucr.ac.cr>
- Diego Jiménez Alvarado

get_start *Get ts start of a time series*

Description

Get ts start of a time series

Usage

```
get_start(ini, tipo_f, patron)
```

Arguments

ini	a Date object.
tipo_f	type of the time series ('year', 'month', ..., 'seconds').
patron	frequency of time series.

Value

numeric vector of lenght 2

Author(s)

Diego Jimenez <diego.jimenez@promidat.com>

Examples

```
get_start(as.Date("2021-06-30"), 'days', 365)
```

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grafico.errores *Error plot for all predictions*

Description

Error plot for all predictions

Usage

```
grafico.errores(errores)
```

Arguments

errores	a data.frame with errors of a time series.

Value

data.frame

Author(s)

Diego Jimenez <diego.jimenez@promidat.com>

Examples

```
model <- arima(window(AirPassengers, end = c(1959, 12)))
pred  <- predict(model, 12)
e <- tabla.errores(list(pred$pred), window(AirPassengers, start = 1960))
grafico.errores(e)
```

MSE *Mean Square Error*

Description

Mean Square Error

Usage

```
MSE(Pred, Real)
```

Arguments

Pred	a ts object (prediction).
Real	a ts object (real).

Value

numeric

Author(s)

Diego Jimenez <diego.jimenez@promidat.com>

Examples

```
model <- arima(window(AirPassengers, end = c(1959, 12)))
pred  <- predict(model, 12)
MSE(pred$pred, window(AirPassengers, start = 1960))
```

RE *Relative Error*

Description

Relative Error

Usage

```
RE(Pred, Real)
```

Arguments

Pred	a ts object (prediction).
Real	a ts object (real).

Value

numeric

Author(s)

Diego Jimenez <diego.jimenez@promidat.com>

Examples

```
model <- arima(window(AirPassengers, end = c(1959, 12)))
pred  <- predict(model, 12)
RE(pred$pred, window(AirPassengers, start = 1960))
```

RMSE *Root Mean Square Error*

Description

Root Mean Square Error

Usage

```
RMSE(Pred, Real)
```

Arguments

Pred	a ts object (prediction).
Real	a ts object (real).

Value

numeric

Author(s)

Diego Jimenez <diego.jimenez@promidat.com>

Examples

```
model <- arima(window(AirPassengers, end = c(1959, 12)))
pred  <- predict(model, 12)
RMSE(pred$pred, window(AirPassengers, start = 1960))
```

RSS *RSS*

Description

RSS

Usage

```
RSS(Pred, Real)
```

Arguments

Pred	a ts object (prediction).
Real	a ts object (real).

Value

numeric

Author(s)

Diego Jimenez <diego.jimenez@promidat.com>

Examples

```
model <- arima(window(AirPassengers, end = c(1959, 12)))
pred  <- predict(model, 12)
RSS(pred$pred, window(AirPassengers, start = 1960))
```

run_app *Run the Shiny Application*

Description

Run the Shiny Application

Usage

```
run_app(...)
```

Arguments

...	A series of options to be used inside the app.

tabla.errores *Error table for all predictions*

Description

Error table for all predictions

Usage

```
tabla.errores(Preds, Real, nombres = NULL)
```

Arguments

Preds	a list of ts objects (prediction).
Real	a ts object (real).
nombres	names for the data.frame (optional).

Value

data.frame

Author(s)

Diego Jimenez <diego.jimenez@promidat.com>

Examples

```
model <- arima(window(AirPassengers, end = c(1959, 12)))
pred  <- predict(model, 12)
tabla.errores(list(pred$pred), window(AirPassengers, start = 1960))
```

text_toDate *Convert character to dates*

Description

Convert character to dates

Usage

```
text_toDate(f)
```

Arguments

f	a vector of character.

Value

list

Author(s)

Diego Jimenez <diego.jimenez@promidat.com>

Examples

```
text_toDate("2021 january 30")
```

`var.categoricas` *Filter category variables of a data.frame*

Description

Filter category variables of a data.frame

Usage

```
var.categoricas(data)
```

Arguments

`data`	a data.frame object.

Value

data.frame

Author(s)

Diego Jimenez <diego.jimenez@promidat.com>

Examples

```
var.categoricas(iris)
```

`var.numericas` *Filter numeric variables of a data.frame*

Description

Filter numeric variables of a data.frame

Usage

```
var.numericas(data)
```

Arguments

`data`	a data.frame object.

Value

data.frame

Author(s)

Diego Jimenez <diego.jimenez@promidat.com>

Examples

```
var.numericas(iris)
```

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