

Package ‘forecaster’

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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>.

License GPL (>= 2)

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)

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Author Oldemar Rodriguez [aut, cre],
Diego Jiménez [aut]

Maintainer Oldemar Rodriguez <oldemar.rodriguez@ucr.ac.cr>

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| | |
|----------------|------------------------------------|
| calibrar.arima | <i>Best parameters arima model</i> |
|----------------|------------------------------------|

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.arma(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 | <i>Data.frame with normal test</i> |
|----------|------------------------------------|

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 | <i>Periodogram Data.frame</i> |
|------------|-------------------------------|

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 length 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", "Cyclicalitv"))
```

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
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Author(s)

Maintainer: Oldemar Rodriguez Rojas <oldemar.rodriquez@ucr.ac.cr>

- Oldemar Rodriguez Rojas <oldemar.rodriquez@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 length 2

Author(s)

Diego Jimenez <diego.jimenez@promidat.com>

Examples

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

| | |
|-----------------|---------------------------------------|
| grafico.errores | <i>Error plot for all predictions</i> |
|-----------------|---------------------------------------|

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 | <i>Error table for all predictions</i> |
|---------------|--|

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 | <i>Convert character to dates</i> |
|-------------|-----------------------------------|

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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