

Package ‘Saylac’

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Type Package

Title Spatial Analysis of Yearly, Longitudinal, and Areal Change

Version 0.1.3

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Description

Provides the Saylac Shiny application for multidisciplinary analysis of global, national, and regional indicators observed across places and years. SAYLAC abbreviates Spatial Analysis of Yearly, Longitudinal, and Areal Change. The platform supports spatial diagnostics, longitudinal data exploration, time-series diagnostics, comparative forecasting, and automated reporting for development, health, education, economic, environmental, and social indicators. The application implements three connected modules: Spatial Analysis Workflow for exploratory spatial data analysis, Single Model Diagnostics for stationarity testing, trend diagnostics, and comparative forecasting, and Spatial Uncertainty and Reporting Analysis Dashboard for forecast mapping, spatial clustering, and reporting. The application supports choropleth mapping, Moran's I, Geary's C, Local Indicators of Spatial Association, Getis-Ord Gi star statistics, spatial correlograms, Theil-Sen trend estimation, Mann-Kendall testing, Autoregressive Integrated Moving Average models, Exponential Smoothing State Space models, neural network autoregression, BATS, TBATS, theta forecasting, symmetric mean absolute percentage error model comparison, and report generation. The platform was first applied in Touryare and Mo-hamud (2026) <[doi:10.1007/s43621-026-04022-x](https://doi.org/10.1007/s43621-026-04022-x)> for integrated spatial-temporal forecasting of educational attainment in Eastern Africa toward Sustainable Development Goal 4.

License GPL (>= 3)

Encoding UTF-8

LazyData true

Depends R (>= 4.2.0)

Imports bs4Dash, classInt, cowplot, DT, forecast, ggplot2, maps,
Metrics, nnfor, patchwork, RColorBrewer, readr, rmarkdown,
rnaturalearth, sf, shiny, spdep, stringr, tidyverse, trend,
tseries, zoo

Suggests testthat (>= 3.0.0), knitr

URL https://muse252.shinyapps.io/Saylac_Shiny_App_Ready/

NeedsCompilation no

Repository CRAN

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Contents

Saylac-package	2
load_saw_simodi_surad_state	3
load_saylac_state	3
run_saw_simodi_surad	4
run_saylac	4
save_saw_simodi_surad_state	5
save_saylac_state	5
saw_simodi_surad_app	6
saw_simodi_surad_example_data	6
saylac_app	7
saylac_example_data	7
Index	8

Saylac-package	<i>Saylac: Spatial Analysis of Yearly, Longitudinal, and Areal Change</i>
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Description

Provides the Saylac Shiny application for multidisciplinary spatial analysis, longitudinal diagnostics, time-series forecasting, and reporting of global, national, and regional indicators.

Details

SAYLAC abbreviates Spatial Analysis of Yearly, Longitudinal, and Areal Change. The platform can be used with indicators from education, health, poverty, economy, environment, demography, infrastructure, governance, and other fields.

See Also

[run_saylac](#)

load_saw_simodi_surad_state	
	<i>Load SAW-SIMODI-SURAD project state</i>

Description

Backward-compatible alias for load_saylac_state().

Usage

```
load_saw_simodi_surad_state(file)
```

Arguments

file	File path to an RDS project-state file.
------	---

Value

A list containing the saved analytical state.

Examples

```
tmp <- tempfile(fileext = ".rds")
save_saw_simodi_surad_state(list(region = "Eastern Africa"), tmp)
load_saw_simodi_surad_state(tmp)
```

load_saylac_state	<i>Load Saylac project state</i>
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Description

Loads a previously saved project-state object.

Usage

```
load_saylac_state(file)
```

Arguments

file	File path to an RDS project-state file.
------	---

Value

A list containing the saved analytical state.

Examples

```
tmp <- tempfile(fileext = ".rds")
save_saylac_state(list(region = "Eastern Africa"), tmp)
load_saylac_state(tmp)
```

run_saw_simodi_surad	<i>Launch the SAW-SIMODI-SURAD Shiny application</i>
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Description

Backward-compatible alias for run_saylac().

Usage

```
run_saw_simodi_surad(launch.browser = TRUE, ...)
```

Arguments

launch.browser Logical. If TRUE, the app opens in the default browser.
 ... Additional arguments passed to shiny::runApp().

Value

No return value. Called for the side effect of launching a Shiny application.

Examples

```
if (interactive()) run_saw_simodi_surad()
```

run_saylac	<i>Launch the Saylac Shiny application</i>
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Description

Opens the installed Saylac dashboard.

Usage

```
run_saylac(launch.browser = TRUE, ...)
```

Arguments

launch.browser Logical. If TRUE, the app opens in the default browser.
 ... Additional arguments passed to shiny::runApp().

Value

No return value. Called for the side effect of launching a Shiny application.

Examples

```
if (interactive()) run_saylac()
```

```
save_saw_simodi_surad_state
```

Save SAW-SIMODI-SURAD project state

Description

Backward-compatible alias for save_saylac_state().

Usage

```
save_saw_simodi_surad_state(state, file)
```

Arguments

state	A named list describing the analytical state.
file	File path where the state object should be saved.

Value

Invisibly returns the file path used to save the state.

Examples

```
tmp <- tempfile(fileext = ".rds")
save_saw_simodi_surad_state(list(region = "Eastern Africa"), tmp)
```

```
save_saylac_state
```

Save Saylac project state

Description

Saves a list containing analytical choices such as indicator, region, year, model settings, and reporting options.

Usage

```
save_saylac_state(state, file)
```

Arguments

state	A named list describing the analytical state.
file	File path where the state object should be saved.

Value

Invisibly returns the file path used to save the state.

Examples

```
tmp <- tempfile(fileext = ".rds")
save_saylac_state(list(indicator = "years_of_schooling"), tmp)
load_saylac_state(tmp)
```

saw_simodi_surad_app	<i>Return the installed SAW-SIMODI-SURAD application directory</i>
----------------------	--

Description

Backward-compatible alias for saylac_app().

Usage

```
saw_simodi_surad_app()
```

Value

A character string giving the installed path to the Shiny application directory.

Examples

```
saw_simodi_surad_app()
```

saw_simodi_surad_example_data	<i>Locate example data included with SAW-SIMODI-SURAD</i>
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Description

Backward-compatible alias for saylac_example_data().

Usage

```
saw_simodi_surad_example_data()
```

Value

A named character vector containing the path to the example CSV file.

Examples

```
saw_simodi_surad_example_data()
```

`saylac_app`

Return the installed Saylac application directory

Description

Returns the installed path to the Saylac Shiny application.

Usage

```
saylac_app()
```

Value

A character string giving the installed path to the Shiny application directory.

Examples

```
saylac_app()
```

`saylac_example_data`

Locate example data included with Saylac

Description

Returns the path to an example country-year data set for Eastern Africa.

Usage

```
saylac_example_data()
```

Value

A named character vector containing the path to the example CSV file.

Examples

```
saylac_example_data()
```

Index

`load_saw_simodi_surad_state`, [3](#)
`load_saylac_state`, [3](#)

`run_saw_simodi_surad`, [4](#)
`run_saylac`, [2](#), [4](#)

`save_saw_simodi_surad_state`, [5](#)
`save_saylac_state`, [5](#)
`saw_simodi_surad_app`, [6](#)
`saw_simodi_surad_example_data`, [6](#)
`Saylac (Saylac-package)`, [2](#)
`Saylac-package`, [2](#)
`saylac_app`, [7](#)
`saylac_example_data`, [7](#)