Package 'RtD3'

November 6, 2020

Title Rt Visualization in D3

Version 0.0.1

Description Create interactive visualisations of Rt estimates using 'D3.js' (Gibbs et al. (2020) <doi:10.5281/zenodo.4011842>). Developed primarily targeting Rt estimates generated by the 'EpiNow2' package, 'RtD3' aims to make simple, beautiful visualisations that help researchers explore their results and share them with others.

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URL https:/epiforecasts.io/RtD3, https://github.com/epiforecasts/RtD3

BugReports https://github.com/epiforecasts/RtD3/issues

Imports jsonlite, htmlwidgets, geojsonsf, data.table, purrr

Suggests testthat, spelling, knitr, covr, dplyr, sf, rgeos, rnaturalearth

Encoding UTF-8

LazyData true

RoxygenNote 7.1.1

Language en-US

NeedsCompilation no

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R topics documented:

`check_input_data` *check_input_data*

Description

Check input data

Usage

```
check_input_data(arg_types, geoData = NULL, rtData = NULL)
```

Arguments

`arg_types`	list, data types of arguments
`geoData`	sf object, map data
`rtData`	data.frame, rt estimates in the format 'Source':'rtData':x, 'casesInfectionData':x, 'casesReportData':x, 'obsCasesData':x, ...

`default_ts_colors` *default_ts_colors*

Description

Define default colors for time series plots

Can be overridden with a list of the same format

Usage

```
default_ts_colors()
```

getSubregionalUrls *Get Subregional Estimate Urls*

Description

Get Subregional Estimate Urls

Usage

```
getSubregionalUrls(path, areas)
```

Arguments

path	A character string container the overall path to subnational estimates
areas	A character vector listing the subregional estimates (assuming that listed in the geoData with capitalisation and without capitalisation in the path).

Value

A named list of subnational urls.

Examples

```
getSubregionalUrls(path = "https://epiforecasts.io/covid/posts/national/",
                   areas = c('Afghanistan', 'Brazil', 'Colombia', 'United States'))
```

joinRtData *Join RtData*

Description

Joins two nested lists in the format required by `summaryWidget`. This may be useful for merging estimates from disparate data sources or linking national level estimates with subnational estimates

Usage

```
joinRtData(rtData, rtData2)
```

Arguments

rtData	A nested list as required by `summaryWidget`
rtData2	A nested list as required by `summaryWidget`

Value

A nested list as required by `summaryWidget`

Examples

```
base_url <- "https://raw.githubusercontent.com/epiforecasts/covid-rt-estimates/master/"
subnational <-   national <- list("Cases" = readInEpiNow2(
path = paste0(base_url, "subnational/italy/cases/summary"),
region_var = "region"))


national <- list("Cases" = readInEpiNow2(
path = paste0(base_url, "national/cases/summary"),
region_var = "country"),
regions = "Italy")

out <- list()
out$Cases <- joinRtData(subnational$Cases, national$Cases)
```

`mapWidget` *mapWidget*

Description

Create a map of Rt summary data

Usage

```
mapWidget(
  geoData = NULL,
  rtData = NULL,
  width = 900,
  elementId = NULL,
  dryRun = FALSE,
  downloadUrl = NULL
)
```

Arguments

`geoData`	sf object, map data
`rtData`	data.frame, rt estimates in the format 'Source':'rtData':x, 'casesInfectionData':x, 'casesReportData':x, 'obsCasesData':x, ...
`width`	integer, width in pixels
`elementId`	string, id of element

dryRun	Logical, defaults to FALSE. Should the function be tested without the widget being created.
downloadUrl	string, optional URL to download datasets Useful for checking the integrity of input data.

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readInEpiNow2 *Read in Results from EpiNow2*

Description

Reads in results from EpiNow2 and converts them into the RtD3 format. Supports either input via a list object or from a file path/url.

Usage

```
readInEpiNow2(input_list, path, region_var = "region", regions)
```

Arguments

input_list	A list of results as returned by EpiNow2::regional_summary
path	A character string indicating the path (either file or URL) to the summary results
region_var	A character string that identifies the region name used.
regions	A character string indicating the regions of interest to returns. Defaults to all regions.

Value

A named list in the format required by summaryWidget along with a summary table.

Examples

```
# Read in each summary folder

base_path <- "https://raw.githubusercontent.com/epiforecasts/covid-rt-estimates/"
rtData <- readInEpiNow2(
  path = paste0(base_path, "master/national/cases/summary"),
  region_var = "country")

rtData



france <- readInEpiNow2(
  path = paste0(base_path, "master/national/cases/summary"),
  region_var = "country",
  regions = "France")

france
```

summaryWidget *summaryWidget*

Description

Create an Rt visualisation using D3

Usage

```
summaryWidget(
  geoData = NULL,
  rtData = NULL,
  activeArea = NULL,
  activeTime = "all",
  runDate = NULL,
  subregional_ref = NULL,
  width = 900,
  elementId = NULL,
  dryRun = FALSE,
  downloadUrl = NULL,
  ts_color_ref = NULL
)
```

Arguments

geoData	sf object, map data
rtData	data.frame, rt estimates in the format 'Source':'rtData':x, 'casesInfectionData':x, 'casesReportData':x, 'obsCasesData':x, ...
activeArea	character, the default area to plot.
activeTime	character, the default time window (defaults to 'all')
runDate	character, date of estimate run in the format ('YYYY-MM-DD')
subregional_ref	list, reference to subnational estimates in the format 'country_name':'url', ...
width	integer, width in pixels
elementId	string, id of element
dryRun	Logical, defaults to FALSE. Should the function be tested without the widget being created.
downloadUrl	string, optional URL to download datasets
ts_color_ref	list, default reference for time series plots. See default_ts_colors for format. Useful for checking the integrity of input data.

summaryWidget-shiny *Shiny bindings for summaryWidget*

Description

Output and render functions for using summaryWidget within Shiny applications and interactive Rmd documents.

Usage

```
summaryWidgetOutput(outputId, width = "100%", height = "400px")

rendersummaryWidget(expr, env = parent.frame(), quoted = FALSE)
```

Arguments

outputId	output variable to read from
width, height	Must be a valid CSS unit (like '100%', '400px', 'auto') or a number, which will be coerced to a string and have 'px' appended.
expr	An expression that generates a RtD3
env	The environment in which to evaluate expr.
quoted	Is expr a quoted expression (with quote())? This is useful if you want to save an expression in a variable.

tsWidget *tsWidget*

Description

Create a time series widget of Rt data

Usage

```
tsWidget(
  rtData = NULL,
  activeArea = NULL,
  activeTime = "all",
  runDate = NULL,
  width = 900,
  elementId = NULL,
  dryRun = FALSE,
  downloadUrl = NULL,
  ts_color_ref = NULL
)
```

Arguments

rtData	data.frame, rt estimates in the format 'Source':'rtData':x, 'casesInfectionData':x, 'casesReportData':x, 'obsCasesData':x, ...
activeArea	character, the default area to plot.
activeTime	character, the default time window (defaults to 'all')
runDate	character, date of estimate run in the format ('YYYY-MM-DD')
width	integer, width in pixels
elementId	string, id of element
dryRun	Logical, defaults to FALSE. Should the function be tested without the widget being created.
downloadUrl	string, optional URL to download datasets
ts_color_ref	list, default reference for time series plots. See default_ts_colors for format. Useful for checking the integrity of input data.

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