

# Package ‘naijR’

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**Type** Package

**Title** Operations to Ease Data Analyses Specific to Nigeria

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**Imports** RColorBrewer (>= 1.1.2), cli (>= 3.6.0), lifecycle (>= 0.2.0),  
mapdata (>= 2.3.0), maps (>= 3.3.0), rlang (>= 0.4.0), sf (>=  
1.0.13), stringi (>= 1.7.6)

**Suggests** ISOcodes, covr, here, knitr, purrr, readxl, rmarkdown,  
testthat (>= 3.0.0), usethis

**Description** A set of convenience functions as well as geographical/political  
data about Nigeria, aimed at simplifying work with data and information that  
are specific to the country.

**License** GPL-3

**LazyData** TRUE

**Encoding** UTF-8

**RoxygenNote** 7.2.3

**VignetteBuilder** knitr

**RdMacros** lifecycle

**URL** <https://brovic.github.io/naijR/>

**BugReports** <https://github.com/BroVic/naijR/issues>

**Config/testthat/edition** 3

**NeedsCompilation** no

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as_state	<i>Explicit coercion between State and LGA names</i>
----------	--

---

### Description

Takes the names of either States or LGAs and converts them explicitly into objects of the other class.

### Usage

```
as_state(x)
```

```
as_lga(x)
```

### Arguments

x	A string representing either States or Local Government Areas (LGAs) that dually name one of these administrative regions.
---	--

### Details

There are a few LGAs in the country that bear the same name as their State, and this could create some confusion when trying to use some of the the functionalities of this package. The States/LGAs in question are *Bauchi*, *Ebonyi*, *Ekity*, *Gombe*, *Katsina* and *Kogi*.

There are subtle differences in the way these functions handle data for States as against those for LGAs. In the case of States, an object of mode character is the preferred argument; alternatively, an object of class states will serve as long as it has only one element. For LGAs, the string is the preferred argument, since an object constructed with lgas() that is supplied a State's name as argument will list all the LGAs in that State. If a pre-formed lgas object is to be coerced to a states object, it should first be unclassed or explicitly coerced with as.character.

**Value**

In the case of `as_state`, an object of class `states`; with `as_lga`, an object of class `lgas`.

**Examples**

```
kt.st <- states("Katsina") # Ensure this is a State, not an LGA.
kt.lg <- suppressWarnings(as_lga(kt.st))
is_state(kt.st)           # TRUE
is_lga(kt.lg)             # TRUE

## Where there's no ambiguity, it doesn't make sense to coerce
## This kind of operation ends with an error
## Not run:
as_state("Kano")
as_lga("Michika")

## End(Not run)
```

---

disambiguate\_lga

*Disambiguate Synonymous States and LGAs*


---

**Description**

Some LGAs in Nigeria bear the name of the States to which they belong to. This function will apply an attribute to such an LGA to distinguish it from its State.

**Usage**

```
disambiguate_lga(lga, state = NULL, ...)
```

**Arguments**

<code>lga</code>	An object of class <code>lgas</code> of length 1L.
<code>state</code>	The name of the State to which the LGA is to belong to.
<code>...</code>	Arguments to be passed to <a href="#">menu</a> .

**Details**

For `state`, if it is not provided by the user, an interactive prompt will be presented to the user to select the appropriate state - but only in interactive sessions; if run as a batch command, this function will signal an error.

**Value**

The object of class `lgas` with the (possibly) modified State attribute.

## Examples

```
obi.lga <- lgas("Obi")    # Warning
try(map_ng(obi.lga))      # Error

obi.benue <- disambiguate_lga(obi.lga, "Benue")
map_ng(obi.benue)
```

---

fix\_mobile

*Fix mobile numbers*

---

## Description

Fixes up local mobile phone numbers to a uniform text format.

## Usage

```
fix_mobile(x)
```

## Arguments

x                    A character vector of numerical strings.

## Details

This format is specific to that used in a given location - for now the function is useful only for Nigeria mobile numbers, which come in the format expressed by the regex pattern " $^0[7-9][0-1][0-9]{8}$ ".

## Value

The updated vector, usually the column of a data frame.

## Note

There is an option for producing warnings on any mobile number entries that may have been removed from the vector, by setting the option `verbose` to `TRUE`.

---

fix_region	<i>Fix Region Names</i>
------------	-------------------------

---

**Description**

Correct any misspelt names of administrative regions i.e. States and LGAs

**Usage**

```
fix_region(x, ...)

## S3 method for class 'states'
fix_region(x, ...)

## S3 method for class 'lgas'
fix_region(x, interactive = FALSE, quietly = FALSE, graphic = FALSE, ...)

## Default S3 method:
fix_region(x, ...)
```

**Arguments**

x	An S3 object of class <code>states</code> or <code>lgas</code> . For <code>fix_region.default</code> , a character vector (or an object coercible to one) can be passed but only that for 'States' will be interpretable.
...	Arguments passed to methods.
interactive	Logical. When TRUE, the function prompts the user to interactively select the correct LGA names from a list of available options.
quietly	Logical; default argument is FALSE.
graphic	Whether to make use of native GUI elements (on Windows only).

**Details**

The function will look through a character vector and try to determine if State or LGA names have been wrongly entered. This presupposes that the atomic vector is of type character. It does not test any missing values in the vector, leaving them untouched.

**Value**

The transformed object. If all names are correct, the object is returned unchanged.

**Note**

When passed a character vector of length 1L, in the case of a misspelt LGA, the function signals an error; the presumption is that a fix can readily be applied interactively. When all the items provided are misspelt, nothing happens, but the user is advised to use the appropriate constructor function so as to improve the accuracy of the repairs. When there is a mix of misspelt and properly spelt LGAs, other functionalities for fixing the mistakes are available via mode `interactive`.

**Examples**

```
try(fix_region("Owerri north")) # ERROR
fix_region(c("Owerri north", "Owerri West"))
```

---

fix_region_manual	<i>Fix Spelling of Regions Manually</i>
-------------------	---

---

**Description**

Enable users to interactively and directly change to spelling of States and/or Local Government Areas (LGAs)

**Usage**

```
fix_region_manual(x, wrong, correct)
```

**Arguments**

x	The object to be modified
wrong	The misspelt element(s) of x.
correct	The correction that is to be applied to the misspelt element(s)

---

is_lga	<i>Test for Local Government Areas</i>
--------	--

---

**Description**

Checks a given object for Local Government Areas, represented as strings.

**Usage**

```
is_lga(x)
```

**Arguments**

x	An object of type character. This includes higher dimension object classes like matrix and array.
---	---

**Value**

A logical vector the same length as the input object. Each element that is not a valid Local Government Area will evaluate to FALSE.

---

is_state	<i>Test an Object for States</i>
----------	----------------------------------

---

**Description**

Test an Object for States

**Usage**

```
is_state(x)
```

**Arguments**

x                    A vector to be tested.

**Details**

An element-wise check of a supplied vector is carried out. To test an entire vector and return a single boolean value, functions such as `base::all` or `base::any` should be used.

**Value**

A logical vector of same length as the input. If the input object is not even of type character, return the object unaltered, with a warning.

**Note**

The function throws a warning, when a missing value is among the elements. It works only for atomic vectors, throwing an error when this is not the case or when NULL is passed to it.

**Examples**

```
all(is_state(naijR::states()))
is_state(c("Maryland", "Baden-Baden", "Plateau", "Sussex"))
```

---

lgas	<i>Create on Object for Local Government Areas</i>
------	--

---

**Description**

Create on Object for Local Government Areas

**Usage**

```
lgas(region = NA_character_, strict = FALSE, warn = TRUE)
```

```
lgas_ng(state = NA_character_)
```

**Arguments**

region	Context-dependent. Either State(s) of the Federation or Local Government Area(s) - internal checks are performed to determine what applies. In cases where States are synonymous to LGAs, the default behaviour is to use the State as a basis for selecting the LGAs. This can be modified with <code>strict</code> . The default value is <code>NA_character_</code> and will return all 774 LGAs.
strict	logical; in the event of a name clash between State/LGA, return only the specified LGA when this argument is set to TRUE.
warn	logical; issue a warning when one or more elements are not actually Local Government Areas (or were misspelt).
state	Character; State(s) in the Federation of Nigeria. Default is <code>NA_character_</code> .

**Value**

If length of `ng.state` == 1L, a character vector containing the names of Local Government Areas; otherwise a named list, whose elements are character vectors of the LGAs in each state.

**Note**

There are six (6) LGAs that share names with their State - Bauchi, Ebonyi, Gombe, Katsina, Kogi and Ekiti.

`lga_ng` stands deprecated and will be removed in the next minor version. New code should use `lgas` instead.

**Examples**

```
how_many_lgas <- function(state) {
  require(naijR)
  stopifnot(all(is_state(state)))
  cat(sprintf("No. of LGAs in %s State:", state),
    length(lgas(state)),
    fill = TRUE)
}
how_many_lgas("Sokoto")
how_many_lgas("Ekiti")
```

---

lgas\_nigeria

*Local Government Areas of Nigeria*


---

**Description**

A dataset containing the 774 Local Government Areas of Nigeria

**Usage**

```
lgas_nigeria
```

**Format**

A dataframe with 774 rows and 2 columns

**lga** Local Government Area

**state** State of the Federation

**gpz** Geo-political zone

---

 map\_ng

*Map of Nigeria*


---

**Description**

Maps of the Federal Republic of Nigeria that are based on the basic plotting idiom utilised by [maps:map](#) and its variants.

**Usage**

```
map_ng(
  region = character(),
  data = NULL,
  x = NULL,
  y = NULL,
  breaks = NULL,
  categories = NULL,
  excluded = NULL,
  exclude.fill = NULL,
  title = NULL,
  caption = NULL,
  show.neighbours = FALSE,
  show.text = FALSE,
  legend.text = NULL,
  leg.x = deprecated(),
  leg.y = deprecated(),
  leg.title,
  plot = TRUE,
  leg.orient = deprecated(),
  ...
)
```

**Arguments**

region	A character vector of regions to be displayed. This could be States or Local Government Areas.
data	An object containing data, principally the variables required to plot in a map.
x, y	Numeric object or factor (or coercible to one). See <i>Details</i> .

<code>breaks</code>	Numeric. A vector of length $\geq 1$ . If a single value i.e. scalar, it denotes the expected number of breaks. Internally, the function will attempt to compute appropriate category sizes or fail if out-of bounds. Where length is $\geq 3L$ , it is expected to be an arithmetic sequence that represents category bounds as for <code>cut</code> (applicable only to choropleth maps).
<code>categories</code>	The legend for the choropleth-plotted categories. If not defined, internally created labels are used.
<code>excluded</code>	Regions to be excluded from a choropleth map.
<code>exclude.fill</code>	Colour-shading to be used to indicate excluded regions. Must be a vector of the same length as <code>excluded</code> .
<code>title, caption</code>	An optional string for annotating the map.
<code>show.neighbours</code>	Logical; TRUE to display the immediate vicinity neighbouring regions/countries.
<code>show.text</code>	Logical. Whether to display the labels of regions.
<code>legend.text</code>	Logical (whether to show the legend) or character vector (actual strings for the legend). The latter will override whatever is provided by <code>categories</code> , giving the user additional control.
<code>leg.x, leg.y</code>	Numeric. Position of the legend (deprecated).
<code>leg.title</code>	String. The legend title. If missing, a default value is acquired from the data. To turn off the legend title, pass NULL.
<code>plot</code>	Logical. Turn actual plotting of the map off or on.
<code>leg.orient</code>	The orientation of the legend i.e. whether horizontal or vertical (deprecated).
<code>...</code>	Further arguments passed to <code>plot</code>

## Details

The default value for `region` is to print all State boundaries. `data` enables the extraction of data for plotting from an object of class `data.frame`. Columns containing regions (i.e. States as well as supported sub-national jurisdictions) are identified. The argument also provides context for quasiquotation when providing the `x` and `y` arguments.

For `x` and `y`, when both arguments are supplied, they are taken to be point coordinates, where `x` represent longitude and `y` latitude. If only `x` is supplied, it is assumed that the intention of the user is to make a choropleth map, and thus, numeric vector arguments are converted into factors i.e. number classes. Otherwise factors or any object that can be coerced to a factor should be used.

For plain plots, the `col` argument works the same as with `map`. For choropleth maps, the colour provided represents a (sequential) colour palette based on `RColorBrewer::brewer.pal`. The available colour options can be checked with `getOption("choropleth.colours")` and this can also be modified by the user.

If the default legend is unsatisfactory, it is recommended that the user sets the `legend.text` argument to `FALSE`; the next function call should be `legend` which will enable finer control over the legend.

## Value

An object of class `sf`, which is a standard format containing the data used to draw the map and thus can be used by this and other popular R packages to visualize the spatial data.

**Note**

When adjusting the default colour choices for choropleth maps, it is advisable to use one of the sequential palettes. For a list of available palettes, especially for more advanced use, review `RColorBrewer::display.brewer.all`.

**Examples**

```
## Not run:  
map_ng() # Draw a map with default settings  
map_ng(states("sw"))  
map_ng("Kano")  
  
## End(Not run)
```

---

`naijR`*naijR: Operations to Ease Data Analyses Specific to Nigeria*

---

**Description**

The `naijR` package is essentially an R package about Nigeria and for Nigeria.

**Details**

`naijR` contains a number of functions that facilitate the management of data sets of interest including data cleaning and wrangling, as well as making available a number of facilities for geo-spatial data visualisation.

---

`states`*Create an Object for the States of Nigeria*

---

**Description**

Create an Object for the States of Nigeria

Print regions

Return the First or Last Parts of a Region Object

**Usage**

```

states(states, gpz = NULL, all = TRUE, warn = TRUE)

## S3 method for class 'regions'
print(x, ...)

## S3 method for class 'regions'
head(x, ...)

## S3 method for class 'regions'
tail(x, ...)

```

**Arguments**

states	A character vector with strings representing one or more States of Nigeria. If missing, the function will return a states all the States, with or without the Federal Capital Territory (FCT).
gpz	NULL (the default) or, case insensitively, one or more of the following strings: "nc", "ne", "nw", "se", "ss" and "sw" (see "Details").
all	logical; whether to include the FCT in the result.
warn	logical; issue a warning when one or more elements are not actually States (i.e. they were misspelt).
x	The object of class region
...	Arguments to tail.default

**Details**

gpz represents a geopolitical zone which, in the Nigerian context, is a national subdivision that groups contiguous states that bear certain socio-cultural and political similarities. Historically, they arise from sub-national administrative divisions known as 'Regions' that existed at the time of the country's independence. There are at present 6 such zones - North-Central, North-East, North-West, South-East, South-South and South-West.

**Value**

The States of Nigeria as a whole or by zones, as an S3 object of class states.

**Examples**

```

states() # lists names of all States
states(gpz = "se") # lists States in South-East zone

```

---

states_nigeria	<i>States of Nigeria</i>
----------------	--------------------------

---

**Description**

A dataset of the 36 States and Federal Capital Territory of Nigeia

**Usage**

states\_nigeria

**Format**

A data.frame with 37 rows and 2 columns

**isocode** ISO 3661 Alpha 2 code

**state** Name of the State or Territory

**gpz** Geo-political zone

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