Package: wppExplorer (via r-universe)

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Title Explorer of World Population Prospects

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Depends R (>= 3.0.0)

Imports shiny (>= 0.13.0), shinythemes, shinyjs, plyr, reshape2,
googleVis, wpp2019, Hmisc, ggplot2, DT

Suggests wpp2017, wpp2015, wpp2012, wpp2010, testthat

Description Explore data in the 'wpp2019' (or 2017, 2015, ...) package
using a 'shiny' interface.

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NeedsCompilation no

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Repository https://hanase.r-universe.dev

RemoteUrl https://github.com/cran/wppExplorer

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wppExplorer-package   *Explorer of the World Population Prospects*

Description

Allows to interactively explore data from the World Population Prospects, contained in packages **wpp2019**, **wpp2017**, **wpp2015**, **wpp2012** and **wpp2010**. It is based on the **shiny** package.

Details

Package:	wppExplorer
Version:	2.3-4
Date:	2020-4-7
Depends:	R (>= 3.0.0)
License:	GPL-3	file LICENSE

The main function of the packge is `wpp.explore` which opens an interactive interface in a web browser. A few helper functions are available for a fast access to the (possibly filtered) data, e.g. `wpp.indicator`.

The interface can be also accessed online: https://bayespop.shinyapps.io/wpp2019explorer/

Author(s)

Hana Sevcikova <hanas@uw.edu>, used code from a Joe Cheng's shiny example

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Source

The underlying datasets are based on estimates and projections of the United Nations, Department of Economic and Social Affairs, Population Division (2011, 2013, 2015, 2017, 2019). The probabilistic projections were produced with the method of Raftery et al. (2012).

References

World Population Prospects: The 2019 Revision. (https://population.un.org/wpp/) Special Tabulations.

A. E. Raftery, N. Li, H. Sevcikova , P. Gerland, G. K. Heilig (2012). Bayesian probabilistic population projections for all countries. Proceedings of the National Academy of Sciences 109:13915-13921.

P. Gerland, A. E. Raftery, H. Sevcikova, N. Li, D. Gu, T. Spoorenberg, L. Alkema, B. K. Fosdick, J. L. Chunn, N. Lalic, G. Bay, T. Buettner, G. K. Heilig, J. Wilmoth (2014). World Population Stabilization Unlikely This Century. Science 346:234-237.

See Also

wpp2019, wpp2017, wpp2015, wpp2012, wpp2010, shiny, wpp.explore, wpp.indicator

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`iso3166`   *ISO 3166 Dataset*

Description

Countries with their alpha-2, alpha-3 and numerical ISO3166-1 code. It includes aggregated regions with user-assigned codes.

Usage

```
data(iso3166)
data(iso3166ud)
```

Format

A data frame containing 5 variables:

name Country name

charcode alpha-2 code

charcode3 alpha-3 code

uncode UN numeric code

is.country Logical. It is TRUE for all countries included in the official ISO3166-1 dataset and FALSE for user-assigned codes, i.e. aggregations.

Details

Dataset `iso3166` includes both, countries and aggregations; dataset `iso3166ud` includes aggregations only.

References

https://www.iso.org/iso/home/standards/country_codes.htm

Examples

```
data(iso3166)
```

---

set.wpp.year *Edit/Retrieve WPP Year.*

Description

Change/get the WPP year which determines from which **wpp** package data are retrieved.

Usage

```
set.wpp.year(wpp.year)

get.wpp.year()
```

Arguments

wpp.year   Possible values are 2019 (default), 2017, 2015, 2012, and 2010.

Value

get.wpp.year returns the wpp year used through out the package.

Examples

```
get.wpp.year() # by default the wpp2019 is used
set.wpp.year(2012) # any subsequent operations use the wpp2012 package
```

---

wpp.by.country *Selection by Country and Year*

Description

Filtering indicators by given countries and year.

Usage

```
wpp.by.country(data, country)

wpp.by.countries(data, countries)

wpp.by.year(data, year)
```

Arguments

data   Data frame as returned by wpp.indicator.
country   alpha-2 ISO 3166 country code.
countries   Vector of alpha-2 ISO 3166 country codes.
year   Year. For vital rates with 5-years time period, currently it is the end year of the
                time period.

Value

A data frame filtered by the input arguments.

See Also

[wpp.indicator](#)

Examples

```
tfr <- wpp.indicator("fert")
tfr.germany.2010 <- wpp.by.country(wpp.by.year(tfr, 2010), 'DE')
```

---

wpp.explore   *Launching WPP Explorer*

Description

Main function of the package. It opens an interactive (shiny) interface in a browser. To exit the browser view, hit the Escape key.

Usage

```
wpp.explore(wpp.year = NULL, host = NULL, ...)
```

Arguments

wpp.year	Determines which **wpp** package is to be explored. Currently available are 2019 (default), 2017, 2015, 2012, and 2010.
host	Argument passed to [runApp](#). Defaults to the shiny.host option, or "0.0.0.0" if not set.
...	Additional arguments passed to [runApp](#).

Details

The time slider in the left pane defines the year or time period for which data are shown. Note that for vital rates indicators, such as fertility, mortality, migration and sex ratio at birth, the time shown on the slider is the end year of the time period of the data shown in the right pane.

The uncertainty selection is only used for indicators and years for which the corresponding lower and upper bounds are available, and for the appropriate visualization types. These are country plots that appear after clicking on the map, table in the "Sortable Data" tab, and "Trends" and "Pyramids". The 80 and 95% intervals are available for the fertility, life expectancy and total population indicators; The +-1/2child intervals are available for the fertility and population indicators.

The ggplot-based graphs in the Trends and Pyramids tabs are interactive. One can see the data values by mouse hovering or single clicks. One can zoom in by selecting a region. Zooming out is done by a double click.

The interface can be accessed online: <https://bayespop.shinyapps.io/wpp2019explorer/>

Note

If you have any troubles to see the data, please check that the **shiny** package is working in your environment. In particular, check that examples in http://rstudio.github.com/shiny/tutorial work. On Windows, you might check this: https://groups.google.com/forum/#!topic/shiny-discuss/tqeURyiPmFI

Author(s)

Hana Sevcikova, based on code from a Joe Cheng's shiny example. Used comments from Patrick Gerland.

See Also

wpp2019, wpp.indicator

Examples

```
## Not run:
wpp.explore()
## End(Not run)
```

---

  wpp.indicator   *Accessing a WPP Indicator*

Description

An interface for accessing a WPP indicator, where datasets with observed and predicted data are merged. The resulting data frame is in a "melted" format.

Usage

```
wpp.indicator(what, ...)
```

Arguments

what   Name of indicator. Possible values are:

   fert Total fertililty rate. Merges datasets tfr and tfrprojMed.
   leF Female life expectancy. Merges datasets e0F and e0Fproj.
   leM Male life expectancy. Merges datasets e0M and e0Mproj.
   tpop Total population. Uses datasets with age- and sex-specific population counts and agregates over sexes and ages.
   tpopF Total female population. Uses datasets popF and popFprojMed and aggregates over ages.
   tpopM Total male population. Uses datasets popM and popMprojMed and aggregates over ages.

mig Total net migration. For **wpp2019** and **wpp2015**, the dataset `migration` is used. For **wpp2012** and **wpp2010** it aggregates datasets `migrationF` and `migrationM` over ages.

migrate Annual migration rate per thousand population. The denominator is approximated with the average population $((P_t + P_{t-1})/2)$.

popagesex Population by sex and age. Uses datasets `popM` and `popMprojMed`. It requires two arguments in . . . , namely sexm=c("F", "M") and agem=c("0-4", "5-9", ..., "95-99", "100+"). The function aggregates population counts over the given sex and age groups.

mortagesex Mortality by sex and age. Uses datasets `mxF` and `mxM`. It requires two atguments in . . . , namely sex which is either "F" or "M", and age which is one of ("0", "1", "5", "10", "15", "20", ... "95", "100+").

fertage Age-specific fertility rate. Uses datasets `tfr` and `tfrprojMed` which are merged together and dataset `percentASFR` to derive age-specific rates. It requires one argument in . . . , namely age which is one of ("15-19", "20-24", ..., "45-49").

pfertage Percent age-specific fertility. Corresponds to the dataset `percentASFR`. Argument agem as defined above giving one or more age categories is required.

sexratio Sex ratio at birth. Corresponds to the dataset `sexRatio`.

medage Median age.

meanagechbear Mean age at childbearing.

meanageinchbearage Mean age of women in childbearing ages.

tdratio Total dependency ratio. Ratio of population of age 0 to 14 and 65+ to population of age 15-64.

chdratio Child dependency ratio. Ratio of population of age 0 to 14 to population of age 15-64.

oadratio Old-age dependency ratio. Ratio of population of age 65+ to population of age 15-64.

psratio Potential support ratio. Inverse of old-age dependency ratio.

popgrowth Average annual population growth $(log(P_t/P_{t-1})/5)$.

fert.ci, leF.ci, leM.ci, tpop.ci, popagesex.ci Lower or upper bound of the corresponding indicator. Requires argument which.pi which is one of "80", "95", "half.child", and an argument bound which is either "low" or "high". Arguments sexm and agem (as defined above, but of length one) are required for popagesex.ci.

. . .   Arguments passed to the underlying functions as described above.

Value

Data frame with columns charcode (alpha-2 ISO 3166 country code), Year, and value.

Author(s)

Hana Sevcikova

See Also

wpp.by.country, wpp.by.year

Examples

```
 tfr <- wpp.indicator("fert")
 ## Not run:
 # Histogram of TFR
 print(qplot(value, data=tfr) + facet_wrap(~ Year))
## End(Not run)
 ## Not run:
 mxM01 <- wpp.indicator("mortagesex", sex="M", age="0")
 # Plot map
 plot(gvisGeoMap(tfr, locationvar='charcode', numvar='value'))
## End(Not run)
```

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