

Package ‘wbwdi’

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Type Package

Title Seamless Access to World Bank World Development Indicators (WDI)

Version 1.0.4

Description Access and analyze the World Bank's World Development Indicators (WDI) using the corresponding API <<https://datahelpdesk.worldbank.org/knowledgebase/articles/889392-about-the-indicators-api-documentation>>. WDI provides more than 24,000 country or region-level indicators for various contexts. 'wbwdi' enables users to download, process and work with WDI series across multiple countries, aggregates, and time periods.

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Depends R (>= 4.1)

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URL <https://github.com/tidy-intelligence/r-wbwdi>,
<https://tidy-intelligence.github.io/r-wbwdi/>

BugReports <https://github.com/tidy-intelligence/r-wbwdi/issues>

VignetteBuilder knitr

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wdi_get	<i>Download World Bank indicator data for specific entities and time periods</i>
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Description

This function retrieves indicator data from the World Bank API for a specified set of entities and indicators. The user can specify one or more indicators, a date range, and other options to tailor the request. The data is processed and returned in a tidy format, including country, indicator, date, and value fields.

Usage

```
wdi_get(
  entities,
  indicators,
  start_year = NULL,
  end_year = NULL,
  most_recent_only = FALSE,
  frequency = "annual",
  language = "en",
  per_page = 10000L,
  progress = TRUE,
  source = NULL,
  format = "long"
)
```

Arguments

entities	A character vector of ISO 2 or ISO 3-country codes, or "all" to retrieve data for all entities.
indicators	A character vector specifying one or more World Bank indicators to download (e.g., c("NY.GDP.PCAP.KD", "SP.POP.TOTL")).

start_year	Optional integer. The starting date for the data as a year.
end_year	Optional integer. The ending date for the data as a year.
most_recent_only	A logical value indicating whether to download only the most recent value. In case of TRUE, it overrides start_year and end_year. Defaults to FALSE.
frequency	A character string specifying the frequency of the data ("annual", "quarter", "month"). Defaults to "annual".
language	A character string specifying the language for the request, see wdi_get_languages . Defaults to "en".
per_page	An integer specifying the number of results per page for the API. Defaults to 10,000.
progress	A logical value indicating whether to show progress messages during the data download and parsing. Defaults to TRUE.
source	An integer value specifying the data source, see wdi_get_sources .
format	A character value specifying whether the data is returned in "long" or "wide" format. Defaults to "long".

Details

This function constructs a request URL for the World Bank API, retrieves the relevant data for the given entities and indicators, and processes the response into a tidy format. The user can optionally specify a date range, and the function will handle requests for multiple pages if necessary. If the progress parameter is TRUE, messages will be displayed during the request and parsing process.

The function supports downloading multiple indicators by sending individual API requests for each indicator and then combining the results into a single tidy data frame.

Value

A tibble with the following columns:

entity_id The ISO 3-country code of the country or aggregate for which the data was retrieved.

indicator_id The ID of the indicator (e.g., "NY.GDP.PCAP.KD").

year The year of the indicator data as an integer.

quarter Optional. The quarter of the indicator data as integer.

month Optional. The month of the indicator data as integer.

value The value of the indicator for the given country and date.

Examples

```
# Download single indicator for multiple entities
wdi_get(c("USA", "CAN", "GBR"), "NY.GDP.PCAP.KD")

# Download single indicator for a specific time frame
wdi_get(c("USA", "CAN", "GBR"), "DPANUSSPB",
        start_year = 2012, end_year = 2013)
```

```

# Download single indicator for monthly frequency
wdi_get("AUT", "DPANUSSPB",
        start_year = 2012, end_year = 2015, frequency = "month")

# Download single indicator for quarterly frequency
wdi_get("NGA", "DT.DOD.DECT.CD.TL.US",
        start_year = 2012, end_year = 2015, frequency = "quarter")

# Download single indicator for all entities and disable progress bar
wdi_get("all", "NY.GDP.PCAP.KD", progress = FALSE)

# Download multiple indicators for multiple entities
wdi_get(c("USA", "CAN", "GBR"), c("NY.GDP.PCAP.KD", "SP.POP.TOTL"))

# Download indicators for different sources
wdi_get("DEU", "NY.GDP.PCAP.KD", source = 2)
wdi_get("DEU", "SG.LAW.INDX", source = 14)

# Download indicators in wide format
wdi_get(c("USA", "CAN", "GBR"), c("NY.GDP.PCAP.KD"),
        format = "wide")
wdi_get(c("USA", "CAN", "GBR"), c("NY.GDP.PCAP.KD", "SP.POP.TOTL"),
        format = "wide")

# Download most recent value only
wdi_get("USA", "SP.POP.TOTL", most_recent_only = TRUE)

```

wdi_get_entities

Download all countries and regions from the World Bank API

Description

This function retrieves information about entities (countries and regions) from the World Bank API. It returns a tibble containing various details such as the entity's ID, ISO2 code, name, region information, lending type, capital city, and coordinates.

Usage

```
wdi_get_entities(language = "en", per_page = 1000)
```

Arguments

language	A character string specifying the language for the API response. Defaults to "en" (English). Other supported options include "es" (Spanish), "fr" (French), and others depending on the API.
per_page	An integer specifying the number of records to fetch per request. Defaults to 1000.

Details

This function sends a request to the World Bank API to retrieve data for all supported entities in the specified language. The data is then processed into a tidy format and includes information about the country, such as its ISO code, capital city, geographical coordinates, and additional metadata about regions, income levels, and lending types.

Value

A tibble with the following columns:

entity_id A character string representing the entity's unique identifier.

entity_name A character string for the name of the entity.

entity_iso2code A character string for the ISO2 country code.

entity_type A character string for the type of the entity ("country" or "region").

region_id A character string representing the region's unique identifier.

region_name A character string for the name of the region.

region_iso2code A character string for the ISO2 region code.

admin_region_id A character string representing the administrative region's unique identifier.

admin_region_name A character string for the name of the administrative region.

admin_region_iso2code A character string for the ISO2 code of the administrative region.

income_level_id A character string representing the entity's income level.

income_level_name A character string for the name of the income level.

income_level_iso2code A character string for the ISO2 code of the income level.

lending_type_id A character string representing the lending type's unique identifier.

lending_type_name A character string for the name of the lending type.

lending_type_iso2code A character string for the ISO2 code of the lending type.

capital_city A character string for the name of the capital city.

longitude A numeric value for the longitude of the entity.

latitude A numeric value for the latitude of the entity.

Examples

```
# Download all entities in English
wdi_get_entities()
```

```
# Download all entities in Spanish
wdi_get_entities(language = "zh")
```

wdi_get_income_levels *Download income levels from the World Bank API*

Description

This function returns a tibble of supported income levels for querying the World Bank API. The income levels categorize countries based on their gross national income per capita.

Usage

```
wdi_get_income_levels(language = "en")
```

Arguments

language A character string specifying the language code for the API response (default is "en" for English).

Details

This function provides a reference for the supported income levels, which categorize countries according to their income group as defined by the World Bank. The language parameter allows the results to be returned in different languages as supported by the API.

Value

A tibble with columns that typically include:

income_level_id An integer identifier for the income level.

income_level_iso2code A character string representing the ISO2 code for the income level.

income_level_name The description of the income level (e.g., "Low income", "High income").

Source

<https://api.worldbank.org/v2/incomeLevels>

Examples

```
# Download all income levels in English  
wdi_get_income_levels()
```

wdi_get_indicators *Download all available World Bank indicators*

Description

This function retrieves a comprehensive list of all indicators supported by the World Bank API. The indicators include metadata such as the indicator ID, name, unit, source, and associated topics. The user can specify the language of the API response and whether to include additional details.

Usage

```
wdi_get_indicators(language = "en", per_page = 32500L)
```

Arguments

language	A character string specifying the language for the request, see wdi_get_languages . Defaults to "en".
per_page	An integer specifying the number of results per page for the API. Defaults to 32,500. Must be a value between 1 and 32,500.

Details

This function makes a request to the World Bank API to retrieve metadata for all available indicators. It processes the response into a tidy tibble format.

Value

A tibble containing the available indicators and their metadata:

indicator_id A character string for the ID of the indicator (e.g., "NY.GDP.PCAP.KD").

indicator_name A character string for the name of the indicator (e.g., "GDP per capita, constant prices").

source_id An integer identifying the data source providing the indicator.

source_name A character string describing the source of the indicator data.

source_note A character string providing additional notes about the data source.

source_organization A character string denoting the organization responsible for the data source.

topics A nested tibble containing (possibly multiple) topics associated with the indicator, with two columns: an integer `topic_id` and a character `topic_name`.

Examples

```
# Download all supported indicators in English
wdi_get_indicators()
```

```
# Download all supported indicators in Spanish
```

```
wdi_get_indicators(language = "es")
```

wdi_get_languages *Download languages from the World Bank API*

Description

This function returns a tibble of supported languages for querying the World Bank API. The supported languages include English, Spanish, French, Arabic, and Chinese, etc.

Usage

```
wdi_get_languages()
```

Details

This function provides a simple reference for the supported languages when querying the World Bank API.

Value

A tibble with three columns:

language_code A character string representing the language code (e.g., "en" for English).

language_name A character string representing the description of the language (e.g., "English").

native_form A character string representing the native form of the language (e.g., "English").

Source

<https://api.worldbank.org/v2/languages>

Examples

```
# Download all languages  
wdi_get_languages()
```

wdi_get_lending_types *Download lending types from the World Bank API*

Description

This function returns a tibble of supported lending types for querying the World Bank API. The lending types classify countries based on the financial terms available to them from the World Bank.

Usage

```
wdi_get_lending_types(language = "en")
```

Arguments

language A character string specifying the language code for the API response (default is "en" for English).

Details

This function provides a reference for the supported lending types, which classify countries according to the financial terms they are eligible for under World Bank programs. The language parameter allows the results to be returned in different languages as supported by the API.

Value

A tibble with columns that typically include:

lending_type_id An integer for the lending type.

lending_type_iso2code A character string for the ISO2 code of the lending type.

lending_type_name A description of the lending type (e.g., "IBRD", "IDA").

Source

<https://api.worldbank.org/v2/lendingTypes>

Examples

```
# Download all lending types in English
wdi_get_lending_types()
```

wdi_get_regions	<i>Download regions from the World Bank API</i>
-----------------	---

Description

This function returns a tibble of supported regions for querying the World Bank API. The regions include various geographic areas covered by the World Bank's datasets.

Usage

```
wdi_get_regions(language = "en")
```

Arguments

language	A character string specifying the language code for the API response (default is "en" for English).
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Details

This function provides a reference for the supported regions, which are important for refining queries related to geographic data in the World Bank's datasets. The `region_id` column is unique for seven key regions.

Value

A tibble with the following columns:

region_id An integer identifier for each region.

region_code A character string representing the region code.

region_iso2code A character string representing the ISO2 code for the region.

region_name A character string representing the name of the region, in the specified language.

Source

<https://api.worldbank.org/v2/region>

Examples

```
# Download all regions
wdi_get_regions()
```

wdi_get_sources	<i>Download data sources from the World Bank API</i>
-----------------	--

Description

This function returns a tibble of supported data sources for querying the World Bank API. The data sources include various databases and datasets provided by the World Bank.

Usage

```
wdi_get_sources(language = "en")
```

Arguments

language A character string specifying the language code for the API response (default is "en" for English).

Details

This function provides a reference for the supported data sources and their metadata when querying the World Bank API. The columns `is_data_available` and `is_metadata_available` are logical values derived from the API response, where "Y" indicates availability.

Value

A tibble with six columns:

source_id An integer identifier for the data source.

source_code A character string for the source code.

source_name The name of the data source (e.g., "World Development Indicators").

update_date The last update date of the data source.

is_data_available A boolean indicating whether data is available.

is_metadata_available A boolean indicating whether metadata is available.

concepts The number of concepts defined for the data source.

Source

<https://api.worldbank.org/v2/sources>

Examples

```
# Download all available data sources in English
wdi_get_sources()
```

`wdi_get_topics`*Download topics from the World Bank API*

Description

This function returns a tibble of supported topics for querying the World Bank API. Topics represent the broad subject areas covered by the World Bank's datasets.

Usage

```
wdi_get_topics(language = "en")
```

Arguments

language A character string specifying the language code for the API response (default is "en" for English).

Details

This function provides a reference for the supported topics that can be used to refine your queries when accessing the World Bank API. Topics represent different areas of focus for data analysis.

Value

A tibble with three columns:

id The unique identifier for the topic.

value The name of the topic (e.g., "Education", "Health").

source_note A brief description or note about the topic.

Source

<https://api.worldbank.org/v2/topics>

Examples

```
# Download all available topics in English
wdi_get_topics()
```

wdi_search	<i>Search for Keywords in Data Frame Columns</i>
------------	--

Description

This function searches for specified keywords across columns in a data frame and returns only the rows where at least one keyword appears in any of the specified columns. It supports nested columns (lists within columns) and provides the option to limit the search to specific columns.

Usage

```
wdi_search(data, keywords, columns = NULL)
```

Arguments

data	A data frame to search. It can include nested columns (lists within columns).
keywords	A character vector of keywords to search for within the specified columns. The search is case-insensitive.
columns	Optional. A character vector of column names to limit the search to specific columns. If NULL, all columns in data will be searched.

Value

A data frame containing only the rows where at least one keyword is found in the specified columns. The returned data frame has the same structure as data.

Examples

```
# Download indicators
indicators <- wdi_get_indicators()

# Search for keywords "inequality" or "gender" across all columns
wdi_search(
  indicators,
  keywords = c("inequality", "gender")
)

# Search for keywords only within the "indicator_name" column
wdi_search(
  indicators,
  keywords = c("inequality", "gender"),
  columns = c("indicator_name")
)
```

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