Package 'noaa'

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Title Accessing NOAA Climate Data Online

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Description Fetch data from the National Oceanic and Atmospheric Administration Climate Data Online (NOAA CDO) <https://www.ncdc.noaa.gov/cdo-web/webservices/v2> API including daily, monthly, and yearly climate summaries, radar data, climatological averages, precipitation data, annual summaries, storm events, and agricultural meteorology.

License GPL-3

Encoding UTF-8

Imports httr, jsonlite

RoxygenNote 7.3.2

NeedsCompilation no

Repository CRAN

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Contents

`get_climate_data` *Retrieve Climate Data from the NOAA API*

Description

Queries the NOAA Climate Data Online (CDO) API to retrieve climate data for a given dataset, station or location, and date range. Supports automatic pagination to collect large datasets.

Usage

```
get_climate_data(
  noaa_token,
  datasetid,
  stationid = NULL,
  locationid = NULL,
  startdate,
  enddate,
  n_results = Inf
)
```

Arguments

noaa_token	A character string. Your NOAA API token used for authentication. You can request a token at https://www.ncdc.noaa.gov/cdo-web/token.
datasetid	A valid dataset ID (e.g., "GHCND", "GSOM", "GSOY"). Use `valid_ids()` to view supported datasets.
stationid	Optional. A NOAA station ID (e.g., "GHCND:USW00094728"). Required for most station-based datasets.
locationid	Optional. A NOAA location ID (e.g., "FIPS:37", "CITY:US390029"). Used for location-based datasets.
startdate	Start date (YYYY-MM-DD) for the query range.
enddate	End date (YYYY-MM-DD) for the query range.
n_results	Maximum number of results to retrieve. Defaults to `Inf` (all available results).

Value

A data frame of climate data observations returned by the NOAA API.

Examples

```
if (nzchar(Sys.getenv("NOAA_TOKEN"))) {
  # Set your NOAA token
  noaa_token <- Sys.getenv("NOAA_TOKEN")

  # Example request: Daily summaries from Central Park, NY (GHCND:USW00094728)
  data <- get_climate_data(
    noaa_token = noaa_token,
    datasetid = "GHCND",
    stationid = "USW00094728",
    startdate = "2020-01-01",
    enddate = "2020-01-31"
  )
  head(data)
}
```

get_locationid *Retrieve NOAA Location IDs for a Given Category*

Description

Queries the NOAA Climate Data Online (CDO) API to retrieve location identifiers for a specified category (e.g., state, city, county).

Usage

```
get_locationid(noaa_token, category_id, n_results = Inf)
```

Arguments

noaa_token	A character string. Your NOAA API token used for authentication. You can request a token at https://www.ncdc.noaa.gov/cdo-web/token.
category_id	A valid location category ID. Options: "ST", "CITY", "COUNTY", "ZIP", "CLIM_REG", "HYDROL_REG", "FIPS".
n_results	Maximum number of results to retrieve. Defaults to Inf (all results).

Value

A data frame of location IDs matching the given category.

Examples

```
if (nzchar(Sys.getenv("NOAA_TOKEN"))) {
  # Retrieve token from environment variable
  noaa_token <- Sys.getenv("NOAA_TOKEN")

  # Get all U.S. state-level location IDs using category "FIPS"
  locations <- get_locationid(noaa_token = noaa_token, category_id = "FIPS")
  head(locations)
}
```

get_stationid *Retrieve Station IDs for a Given Dataset and Location*

Description

Queries the NOAA Climate Data Online (CDO) API to retrieve station identifiers associated with a specified dataset, location, and date range.

Usage

```
get_stationid(
  noaa_token,
  datasetid,
  locationid = NULL,
  startdate,
  enddate,
  n_results = Inf
)
```

Arguments

noaa_token	A character string. Your NOAA API token used for authentication. You can request a token at https://www.ncdc.noaa.gov/cdo-web/token.
datasetid	A valid dataset ID (e.g., "GHCND", "GSOM", etc.). Use `valid_ids()` to see supported values.
locationid	Optional. A valid location ID (e.g., "FIPS:37", "CITY:US390029"). If `NULL`, all locations are considered.
startdate	Start date (YYYY-MM-DD) for station data coverage.
enddate	End date (YYYY-MM-DD) for station data coverage.
n_results	Maximum number of station results to retrieve. Defaults to `Inf` to fetch all available.

Value

A data frame containing metadata for the matching NOAA stations.

Examples

```
if (nzchar(Sys.getenv("NOAA_TOKEN"))) {
  # Retrieve your NOAA API token from environment
  noaa_token <- Sys.getenv("NOAA_TOKEN")

  # Get stations for the GHCND dataset in Texas between 2020-01-01 and 2020-12-31
  stations <- get_stationid(
    noaa_token = noaa_token,
    datasetid = "GHCND",
    locationid = "FIPS:48",
    startdate = "2020-01-01",
    enddate = "2020-12-31"
  )
  head(stations)
}
```

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