Package: noaa (via r-universe)

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Type Package

Title Access National Aeronautics and Space Administration (NASA) Open APIs for Space and Earth Data

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Description Provides functions to access and download data from various NASA APIs, including: Astronomy Picture of the Day (APOD), Mars Rover Photos, Earth Polychromatic Imaging Camera (EPIC), Near Earth Object Web Service (NeoWs), Earth Observatory Natural Event Tracker (EONET), and NASA Earthdata CMR Search. Most endpoints require a NASA API key for access. Data is retrieved, cleaned for analysis, and returned in a dataframe-friendly format.

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Encoding UTF-8

Imports httr, jsonlite, magick, dplyr

RoxygenNote 7.3.2

URL https://api.nasa.gov, https://eonet.gsfc.nasa.gov, https://cmr.earthdata.nasa.gov

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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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