

Package ‘CDECRetrieve’

September 10, 2018

Type Package

Title Retrieve Historical and Near Realtime Data from CDEC

Version 0.1.2

Description CDEC maintains a set of web services at <http://cdec.water.ca.gov/queryTools.html>.
In order to better interact and analyze the data this R packages allows users to quickly and easily retrieve data.

Encoding UTF-8

LazyData true

RoxygenNote 6.1.0

Depends R (>= 3.1.2)

Imports dplyr (>= 0.7.0), tidyr (>= 0.7), magrittr (>= 1.5), purrr (>= 0.2), readr (>= 1.1.1), roxygen2, rvest (>= 0.3), xml2, stringr (>= 1.2.0), tibble, lubridate (>= 1.6.0), httr (>= 1.3.1), lazyeval, glue

Suggests testthat, leaflet, knitr, rmarkdown, ggplot2

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VignetteBuilder knitr

NeedsCompilation no

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CDECRetrieve	<i>CDECRetrieve</i>
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Description

CDECRetrieve

cdec_datasets	<i>Show available data</i>
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Description

display a data frame of available data for a station.

Usage

```
cdec_datasets(station)
```

Arguments

station	cdec station code
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Value

data frame with available data as rows.

Examples

```
# get a list of dataframes available for CCR
## Not run:
cdec_datasets("ccr")

## End(Not run)
```

cdec_query	<i>Query observation data</i>
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Description

Function queries the CDEC site to obtain desired station data based on station, sensor number, duration code and start/end date. Use `cdec_datasets()` to view an updated list of all available data at a station.

Usage

```
cdec_query(station, sensor_num, dur_code, start_date = NULL,  
           end_date = NULL, tzzone = "America/Los_Angeles")
```

Arguments

<code>station</code>	three letter identification for CDEC location (example "KWK", "SAC", "CCR")
<code>sensor_num</code>	sensor number for the measure of interest. (example "20", "01", "25")
<code>dur_code</code>	duration code for measure interval, "E", "H", "D", which correspond to Event, Hourly and Daily.
<code>start_date</code>	date to start the query on.
<code>end_date</code>	an optional date to end query on, defaults to current date.
<code>tzzone</code>	a time zone to attached to datetime objects in R

Value

dataframe

Examples

```
## Not run:  
kwk_hourly_flows <- CDECRetrieve::cdec_query("KWK", "20", "H", "2017-01-01")  
ccr_hourly_temps <- CDECRetrieve::cdec_query("CCR", "25", "H", Sys.Date())  
  
## End(Not run)
```

`cdec_rt`*Get a rating table*

Description

Use station id to find the rating table for stage to flow used by CDEC.

Usage

```
cdec_rt(station_id)
```

Arguments

`station_id` three letter CDEC station id

Value

dataframe of rating table, with stage (feet) and flow (cfs) as columns

Examples

```
cdec_rt("abj") # get the stage to rating curve for ABJ
```

`cdec_rt_list`*List Rating Tables*

Description

Get a list of all rating tables available through CDEC

Usage

```
cdec_rt_list(station_id = NULL)
```

Arguments

`station_id` station for the location to get rating description for.

Examples

```
# list all rating tables in CDEC, you can use filter to search  
cdec_rt_list()
```

cdec_stations	<i>Search CDEC Stations</i>
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Description

search the stations in the CDEC system using the CDEC Station Search service [here](#). Combinations of these parameters can be supplied to refine or be left out to generalize, at least one must be supplied.

Usage

```
cdec_stations(station_id = NULL, nearby_city = NULL,
              river_basin = NULL, hydro_area = NULL, county = NULL)
```

Arguments

station_id	string three letter station code
nearby_city	string search stations near supplied city
river_basin	string search stations in supplied basin
hydro_area	string search stations in supplied hydrological area
county	string search stations in supplied county

Examples

```
# cdec_stations() can be used to find locations within an area of interest
cdec_stations(county = "alameda")
# or it can be used to get metadata attributes for a location
cdec_stations(station_id = "ccr")
```

map_stations	<i>Map Station Search</i>
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Description

Populate a leaflet map with the results of cdec_stations() call. The function makes use of leaflet, and so will work only if this is installed on the system. This function is bundled simply for exploration purposes, it is highly suggested to make use of leaflet for production maps.

Usage

```
map_stations(.data, ...)
```

Arguments

.data	result of a cdec_stations() call
...	named arguments passed into leaflet::addCircleMarkers

Examples

```
if (interactive()) {  
  cdec_stations(county = "alameda") %>% map_stations(label=~name, popup=~station_id)  
}
```

sac_valley_wy_types *Sacramento Valley Water Year Index*

Description

Chronological Reconstructed Sacramento Valley Water Year Hydrologic Classification Indices Based on measured unimpaired runoff (in million acre-feet), subject to revision.

Usage

```
sac_valley_wy_types
```

Format

An object of class `tbl_df` (inherits from `tbl`, `data.frame`) with 111 rows and 6 columns.

san_joaquin_wy_types *San Joaquin Valley Water Year Index*

Description

Chronological Reconstructed San Joaquin Valley Water Year Hydrologic Classification Indices Based on measured unimpaired runoff (in million acre-feet), subject to revision.

Usage

```
san_joaquin_wy_types
```

Format

An object of class `tbl_df` (inherits from `tbl`, `data.frame`) with 111 rows and 6 columns.

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