Package 'rwunderground'

May 1, 2018

Type Package

Title R Interface to Weather Underground API

Version 0.1.8

Date 2018-05-01

Author Alex Shum <alex@ALShum.com>

Maintainer Eric Hare <eric@omnianalytics.io>

Description Tools for getting historical weather information and forecasts from wunderground.com. Historical weather and forecast data includes, but is not limited to, temperature, humidity, windchill, wind speed, dew point, heat index. Additionally, the weather underground weather API also includes information on sunrise/sunset, tidal conditions, satellite/webcam imagery, weather alerts, hurricane alerts and historical high/low temperatures.

URL https://github.com/ALShum/rwunderground, http://www.wunderground.com/weather/api

BugReports https://github.com/alshum/rwunderground/issues

License GPL (>= 2)

Imports httr, dplyr, countrycode, lubridate, tibble

LazyData TRUE

RoxygenNote 6.0.1

NeedsCompilation no

Repository CRAN

Date/Publication 2018-05-01 16:28:16 UTC

R topics documented:

`alerts` *Weather Alerts for United States and Europe*

Description

Weather Alerts for United States and Europe

Usage

```
alerts(location, key = get_api_key(), raw = FALSE, raw_JSON = FALSE,
  message = TRUE)
```

Arguments

location	location set by set_location
key	weather underground API key
raw	if TRUE return raw httr object
raw_JSON	if TRUE return entire alert as JSON
message	if TRUE print out requested URL

Value

A string containing alert type, message, start time and expiration.

Examples

```
## Not run:
alerts(set_location(territory = "Hawaii", city = "Honolulu"))
alerts(set_location(airport_code = "SEA"))
alerts(set_location(zip_code = "90210"))
alerts(set_location(territory = "IR", city = "Tehran"))

## End(Not run)
```

---

almanac *Average and record high and low temperatures for current date going back as far as weather underground has data or from the national weather service going back 30 years.*

Description

Average and record high and low temperatures for current date going back as far as weather underground has data or from the national weather service going back 30 years.

Usage

```
almanac(location, use_metric = FALSE, key = get_api_key(), raw = FALSE,
  message = TRUE)
```

Arguments

location	location set by set_location
use_metric	Metric or imperial units
key	weather underground API key
raw	if TRUE return raw httr object
message	if TRUE print out requested URL

Value

tbl_df with columns: location, airport, avg_high, record high, avg_low, record low.

Examples

```
## Not run:
almanac(set_location(territory = "Hawaii", city = "Honolulu"))
almanac(set_location(airport_code = "SEA"))
almanac(set_location(zip_code = "90210"))
almanac(set_location(territory = "IR", city = "Tehran"))

## End(Not run)
```

---

as.numeric.nonempty *as.numeric with special handling for length 0 (NULL) objects*

Description

as.numeric with special handling for length 0 (NULL) objects

Usage

```
## S3 method for class 'nonempty'
as.numeric(x)
```

Arguments

x	the object to cast as numeric

Value

value of type double

---

astronomy *Moon phase, sunrise and sunset times for today.*

Description

Moon phase, sunrise and sunset times for today.

Usage

```
astronomy(location, key = get_api_key(), raw = FALSE, message = TRUE)
```

Arguments

location	location set by set_location
key	weather underground API key
raw	if TRUE return raw httr object
message	if TRUE print out requested URL

Value

tbl_df with: location, moon phase, percent visible, moon rise and set times, sun rise and set times.

Examples

```
## Not run:
astronomy(set_location(territory = "Hawaii", city = "Honolulu"))
astronomy(set_location(airport_code = "SEA"))
astronomy(set_location(zip_code = "90210"))
astronomy(set_location(territory = "IR", city = "Tehran"))

## End(Not run)
```

---

base_url *Base URL for wunderground API*

Description

Base URL for wunderground API

Usage

```
base_url()
```

Value

base wunderground URL

`build_url` *Build wunderground request URL*

Description

Build wunderground request URL

Usage

```
build_url(key = get_api_key(), request_type, date, location)
```

Arguments

`key`	wunderground API key
`request_type`	request type TODO::list all request_types
`date`	Date, only applicable for history requests
`location`	location set by set_location

`conditions` *Current conditions including current temperature, weather condition, humidity, wind, feels-like, temperature, barometric pressure, and visibility.*

Description

Current conditions including current temperature, weather condition, humidity, wind, feels-like, temperature, barometric pressure, and visibility.

Usage

```
conditions(location, use_metric = FALSE, key = get_api_key(), raw = FALSE,
  message = TRUE)
```

Arguments

`location`	location set by set_location
`use_metric`	Metric or imperial units
`key`	weather underground API key
`raw`	if TRUE return raw httr object
`message`	if TRUE print out requested URL

Value

tbl_df with conditions

Examples

```
## Not run:
conditions(set_location(territory = "Hawaii", city = "Honolulu"))
conditions(set_location(airport_code = "SEA"))
conditions(set_location(zip_code = "90210"))
conditions(set_location(territory = "IR", city = "Tehran"))

## End(Not run)
```

`current_hurricane` *Current hurricane - within the US only. Note: all times in eastern*

Description

Current hurricane - within the US only. Note: all times in eastern

Usage

```
current_hurricane(key = get_api_key(), use_metric = FALSE, raw = FALSE,
  message = TRUE)
```

Arguments

`key`	weather underground API key
`use_metric`	Metric or imperial units
`raw`	if TRUE return raw httr object
`message`	if TRUE print out requested URL

Value

Hurricane info

Examples

```
## Not run:
current_hurricane()

## End(Not run)
```

dst_POSIXct *Return POSIXct time from 7 variables.*

Description

In locations with a Daylight Saving/Standard time change that occurs twice annually, the year has one 23 hour day and one 25 hour day, if by day we mean "an ordered set of all instants in time which are assigned the same date". In the US/Los_Angeles timezone, there is one day in the spring where are no valid times between the moment before 02:00:00 and 03:00:00. Similarly, there is one day in the fall where there are two instants described by all times between 01:00:00 and 01:59:59, first as a set of PDT times, then as a set of PST times. `as.POSIXct()` doesn't handle this case well. Times inside this region are assigned to DST until the sequence of clock times has a time which is the same or earlier than its predecessor, and all subsequent ambiguous times are assigned to Standard Time.

Usage

```
dst_POSIXct(y, m, d, hr, mn, sec, tz)
```

Arguments

`y`	vector of years
`m`	vector of months
`d`	vector of days
`hr`	vector of hours
`mn`	vector of minutes
`sec`	vector of seconds
`tz`	vector of timezones

Value

POSIXct time assuming vectors sorted by true chronological order, at least for the hour that "occurs twice", once with Daylight Time, then again with Standard Time. If there are no nonmonotonicities in the times, all times in this hour will be assumed to be Daylight Time.

dst_repeat_starttime *Find the text to POSIXct ambiguous interval.*

Description

Assumes that DST transitions happen on hour boundaries, which is true almost everywhere, and that the wall clock shifts back and repeats exactly 1 hour, again true almost everywhere. This code relies on R and the OS to properly manage DST in all timezones.

Usage

```
dst_repeat_starttime(y, m, d, tz)
```

Arguments

y	the year
m	the month
d	the day
tz	the timezone

Value

list of two integers betweeen 0000 and 2359, hhmm format. the first integer is the beginning of the interval of clock times which correspond to 2 separate instants of time, the second is the end of that interval. The left endpoint is ambiguous, the right endpoint is not since it maps only to Standard Time.

---

encode_NA *Processes data.frames and replaces wunderground's -9999/-999 to NAs*

Description

Processes data.frames and replaces wunderground's -9999/-999 to NAs

Usage

```
encode_NA(df)
```

Arguments

df	the data.frame to process

Value

data.frame with correctly encoded NAs

forecast10day *Forecast for the next 10 days.*

Description

Forecast for the next 10 days.

Usage

```
forecast10day(location, use_metric = FALSE, key = get_api_key(),
  raw = FALSE, message = TRUE)
```

Arguments

location	location set by set_location
use_metric	Metric or imperial units
key	weather underground API key
raw	if TRUE return raw httr object
message	if TRUE print out requested URL

Value

tbl_df with date (in posix format), high and low temp, conditions, precipitation, rain, snow, max and avg wind speed, max/min and avg humidity

Examples

```
## Not run:
forecast10day(set_location(territory = "Hawaii", city = "Honolulu"))
forecast10day(set_location(airport_code = "SEA"))
forecast10day(set_location(zip_code = "90210"))
forecast10day(set_location(territory = "IR", city = "Tehran"))

## End(Not run)
```

forecast3day *Forecast for the next 3 days.*

Description

Forecast for the next 3 days.

Usage

```
forecast3day(location, use_metric = FALSE, key = get_api_key(),
  raw = FALSE, message = TRUE)
```

Arguments

location	location set by set_location
use_metric	Metric or imperial units
key	weather underground API key
raw	if TRUE return raw httr object
message	if TRUE print out requested URL

Value

tbl_df with date (in posix format), high and low temp, conditions, precipitation, rain, snow, max and avg wind speed, max/min and avg humidity

Examples

```
## Not run:
forecast3day(set_location(territory = "Hawaii", city = "Honolulu"))
forecast3day(set_location(airport_code = "SEA"))
forecast3day(set_location(zip_code = "90210"))
forecast3day(set_location(territory = "IR", city = "Tehran"))

## End(Not run)
```

---

geolookup *Lists nearby weather stations for a given location*

Description

Lists nearby weather stations for a given location

Usage

```
geolookup(location, use_metric = FALSE, key = get_api_key(), raw = FALSE,
  message = TRUE)
```

Arguments

location	location set by set_location
use_metric	Metric or imperial units
key	weather underground API key
raw	if TRUE return raw httr object
message	if TRUE print out requested URL

Value

tbl_df of nearby weather stations with: type, city, state, country, id, lat, lon and dist (in either mi or km)

Examples

```
## Not run:
geolookup(set_location(territory = "Hawaii", city = "Honolulu"))
geolookup(set_location(airport_code = "SEA"))
geolookup(set_location(zip_code = "90210"))
geolookup(set_location(territory = "IR", city = "Tehran"))

## End(Not run)
```

`get_api_key` *Returns the wunderground API key*

Description

Returns the wunderground API key

Usage

```
get_api_key()
```

Value

API key

Examples

```
## Not run:
get_api_key()

## End(Not run)
```

`has_api_key` *Detects if wunderground API key is set*

Description

Detects if wunderground API key is set

Usage

```
has_api_key()
```

Value

TRUE if API key set, otherwise FALSE

`history` *Hourly weather data for specified date.*

Description

Hourly weather data for specified date.

Usage

```
history(location, date = "20150101", use_metric = FALSE,
  key = get_api_key(), raw = FALSE, message = TRUE)
```

Arguments

`location`	location set by set_location
`date`	Date as YYYYMMDD format
`use_metric`	Metric or imperial units
`key`	weather underground API key
`raw`	if TRUE return raw httr object
`message`	if TRUE print out requested URL

Value

tbl_df with date, temperature, dew point, humidity, wind speed, gust and direction, visibility, pressure, wind chill, heat index, precipitation, condition, fog, rain, snow, hail, thunder, tornado

Examples

```
## Not run:
history(set_location(territory = "Hawaii", city = "Honolulu"), "20130101")
history(set_location(airport_code = "SEA"), "20130101")
history(set_location(zip_code = "90210"), "20130131")
history(set_location(territory = "IR", city = "Tehran"), "20140131")

## End(Not run)
```

history_daily *Summarized weather data for specified date.*

Description

Summarized weather data for specified date.

Usage

```
history_daily(location, date = "20150101", use_metric = FALSE,
  key = get_api_key(), raw = FALSE, message = TRUE)
```

Arguments

location	location set by set_location
date	Date as YYYYMMDD format
use_metric	Metric or imperial units
key	weather underground API key
raw	if TRUE return raw httr object
message	if TRUE print out requested URL

Value

tbl_df of summarized weather

Examples

```
## Not run:
history_daily(set_location(territory = "Hawaii", city = "Honolulu"), "20130101")
history_daily(set_location(airport_code = "SEA"), "20130101")
history_daily(set_location(zip_code = "90210"), "20130131")
history_daily(set_location(territory = "IR", city = "Tehran"), "20140131")

## End(Not run)
```

history_range *Hourly weather data for specified date range.*

Description

Hourly weather data for specified date range.

Usage

```
history_range(location, date_start = "20150101", date_end = "20150105",
  limit = 10, no_api = FALSE, use_metric = FALSE, key = get_api_key(),
  raw = FALSE, message = TRUE)
```

Arguments

location	location set by set_location
date_start	start date
date_end	end date
limit	Maximum number of API requests per minute, NULL to have no limits
no_api	bypass API and use URL requests
use_metric	Metric or imperial units
key	weather underground API key
raw	if TRUE return raw httr object
message	if TRUE print out requested URL

Value

tbl_df with date, temperature, dew point, humidity, wind speed, gust and direction, visibility, pressure, wind chill, heat index, precipitation, condition, fog, rain, snow, hail, thunder, tornado

Examples

```
## Not run:
history_range(set_location(territory = "Hawaii", city = "Honolulu"), "20130101", "20130105")
history_range(set_location(airport_code = "SEA"), "20130101", "20130105")
history_range(set_location(zip_code = "90210"), "20130131", "20130205")
history_range(set_location(territory = "IR", city = "Tehran"), "20140131", "20140202")

## End(Not run)
```

---

hourly *Hourly forecast for the next 24 hours.*

Description

Hourly forecast for the next 24 hours.

Usage

```
hourly(location, use_metric = FALSE, key = get_api_key(), raw = FALSE,
  message = TRUE)
```

Arguments

location	location set by set_location
use_metric	Metric or imperial units
key	weather underground API key
raw	if TRUE return raw httr object
message	if TRUE print out requested URL

Value

tbl_df with date, temperature, dew point, condition, wind speed and direction, UV index, humidity, windchill, heat index, real feel, rain, snow, pop, mslp

Examples

```
## Not run:
hourly(set_location(territory = "Hawaii", city = "Honolulu"))
hourly(set_location(airport_code = "SEA"))
hourly(set_location(zip_code = "90210"))
hourly(set_location(territory = "IR", city = "Tehran"))

## End(Not run)
```

---

hourly10day *Hourly forecast for the next 10 days.*

Description

Hourly forecast for the next 10 days.

Usage

```
hourly10day(location, use_metric = FALSE, key = get_api_key(),
  raw = FALSE, message = TRUE)
```

Arguments

location	location set by set_location
use_metric	Metric or imperial units
key	weather underground API key
raw	if TRUE return raw httr object
message	if TRUE print out requested URL

Value

tbl_df with date, temperature, dew point, condition, wind speed and direction, UV index, humidity, windchill, heat index, real feel, rain, snow, pop, mslp

Examples

```
## Not run:
hourly10day(set_location(territory = "Hawaii", city = "Honolulu"))
hourly10day(set_location(airport_code = "SEA"))
hourly10day(set_location(zip_code = "90210"))
hourly10day(set_location(territory = "IR", city = "Tehran"))

## End(Not run)
```

---

is_fall_back_day *Check if a date is a "fall back" transition from DST.*

Description

Check if a date is a "fall back" transition from DST.

Usage

```
is_fall_back_day(y, m, d, tz)
```

Arguments

y	the year
m	the month
d	the day
tz	the timezone

Value

logical

---

is_valid_airport *Checks if airport code is valid*

Description

Checks if airport code is valid

Usage

```
is_valid_airport(name)
```

Arguments

name	Airport code either IATA or ICAO

Value

TRUE if valid otherwise FALSE

---

is_valid_territory *Checks if country/state is a valid one*

Description

Checks if country/state is a valid one

Usage

```
is_valid_territory(name)
```

Arguments

name	Name of state or country

Value

TRUE if valid state or country otherwise FALSE

---

list_airports *Returns a data.frame of valid airport codes (ICAO and IATA).*

Description

This dataset is from the openflights.org airport database. It can be found at http://openflights.org/data.html#airport. This data is provided under the open database license – more information can be found here: http://opendatacommons.org/licenses/odbl/1.0/.

Usage

```
list_airports()
```

Value

data.frame of airport codes with country and city

Examples

```
## Not run:
list_airports()

## End(Not run)
```

list_countries *Returns a data.frame of valid countries with iso abbreviations and region*

Description

Returns a data.frame of valid countries with iso abbreviations and region

Usage

```
list_countries()
```

Value

data.frame of valid country names with iso codes

Examples

```
## Not run:
list_countries()

## End(Not run)
```

list_states *Returns a data.frame of valid states with abbreviations and regions*

Description

Returns a data.frame of valid states with abbreviations and regions

Usage

```
list_states()
```

Value

data.frame of states with abbreviation and region

Examples

```
## Not run:
list_states()

## End(Not run)
```

`lookup_airport` *Lookup airport code (IATA and ICAO code). weatherunderground API might not recognize the IATA/ICAO code for smaller airports.*

Description

Lookup airport code (IATA and ICAO code). weatherunderground API might not recognize the IATA/ICAO code for smaller airports.

Usage

```
lookup_airport(location, region = NULL)
```

Arguments

`location`	location string
`region`	region string

Value

data.frame of matching airport name and IATA/ICAO codes

Examples

```
## Not run:
lookup_airport("Honolulu")
lookup_airport("Pyongyang")
lookup_airport("Portland", region = "Los_Angeles")

## End(Not run)
```

`lookup_country_code` *Lookup ISO country code weatherunderground API doesn't recognize iso codes uniformly for every country.name*

Description

Lookup ISO country code weatherunderground API doesn't recognize iso codes uniformly for every country.name

Usage

```
lookup_country_code(name, region = NULL)
```

Arguments

name	Name of country
region	Geographic region

Value

data.frame of country codes

Examples

```
## Not run:
lookup_country_code("Korea")
lookup_country_code("Guinea", region = "Africa")

## End(Not run)
```

---

measurement_exists *Check if a variable exists for a PWS. If not set the value to -9999*

Description

Check if a variable exists for a PWS. If not set the value to -9999

Usage

```
measurement_exists(x, class = "numeric")
```

Arguments

x	the value to check
class	a character given the desired class for the variable

---

nonempty *return object, or NA for length 0 (NULL) objects*

Description

return object, or NA for length 0 (NULL) objects

Usage

```
nonempty(x)
```

Arguments

x	the object to cast as numeric

Value

value of type double

`planner` *Weather summary based on historical information between the specified dates*

Description

Weather summary based on historical information between the specified dates

Usage

```
planner(location, use_metric = FALSE, start_date = "0501",
  end_date = "0531", key = get_api_key(), raw = FALSE, message = TRUE)
```

Arguments

`location`	location set by set_location
`use_metric`	Metric or imperial units
`start_date`	Start date as MMDD
`end_date`	End date as MMDD
`key`	weather underground API key
`raw`	if TRUE return raw httr object
`message`	if TRUE print out requested URL

Value

tbl_df

Examples

```
## Not run:
planner(set_location(territory = "Hawaii", city = "Honolulu"),
        start_date = "0101", end_date = "0131")
planner(set_location(territory = "Washington", city = "Seattle"),
        start_date = "01201", end_date = "1231")
planner(set_location(territory = "Louisiana", city = "New Orleans"),
        start_date = "0501", end_date = "0531")

## End(Not run)
```

`rawtide` *Raw Tidal data with data every 5 minutes for US locations Tidal information only available for US cities. Units are in feet.*

Description

Raw Tidal data with data every 5 minutes for US locations Tidal information only available for US cities. Units are in feet.

Usage

```
rawtide(location, key = get_api_key(), raw = FALSE, message = TRUE)
```

Arguments

`location`	location set by set_location
`key`	weather underground API key
`raw`	if TRUE return raw httr object
`message`	if TRUE print out requested URL

Value

tbl_df with time (epoch) and height

Examples

```
## Not run:
rawtide(set_location(territory = "Hawaii", city = "Honolulu"))
rawtide(set_location(territory = "Washington", city = "Seattle"))
rawtide(set_location(territory = "Louisiana", city = "New Orleans"))

## End(Not run)
```

`satellite` *Returns image URL for satellite imagery*

Description

Returns image URL for satellite imagery

Usage

```
satellite(location, key = get_api_key(), raw = FALSE, message = TRUE)
```

Arguments

location	location set by set_location
key	weather underground API key
raw	if TRUE return raw httr object
message	if TRUE print out requested URL

Value

URL to satellite imagery

Examples

```
## Not run:
satellite(set_location(territory = "Hawaii", city = "Honolulu"))
satellite(set_location(territory = "Washington", city = "Seattle"))
satellite(set_location(territory = "Louisiana", city = "New Orleans"))

## End(Not run)
```

---

set_api_key *Sets the wunderground API key*

Description

Sets the wunderground API key

Usage

```
set_api_key(key)
```

Arguments

key	wunderground API key

Value

API key

Examples

```
## Not run:
set_api_key("1a2b3c4d")

## End(Not run)
```

set_location *Specifies location of request*

Description

This is a wrapper function that will validate and format location strings for requesting data from weather underground.

Usage

```
set_location(zip_code = NULL, territory = NULL, city = NULL,
  airport_code = NULL, PWS_id = NULL, lat_long = NULL, autoip = NULL)
```

Arguments

zip_code	zip code
territory	state if in US, otherwise country
city	city name
airport_code	IATA/ICAO airport code
PWS_id	personal weather station ID
lat_long	latitude and longitude, as a comma-separated string
autoip	location based on IP

Value

formatted and validated location string

Examples

```
set_location(zip_code = "90210")
set_location(territory = "Hawaii", city = "Honolulu")
set_location(territory = "Kenya", city = "Mombasa")
set_location(airport_code = "SEA")
set_location(PWS_id = "KMNCHASK10")
set_location(lat_long="40.6892,-74.0445")
set_location(autoip = "172.227.205.140")
set_location()
```

`stop_for_error` *Detect and stop for any wunderground request errors*

Description

Detect and stop for any wunderground request errors

Usage

```
stop_for_error(httr_parsed_req)
```

Arguments

`httr_parsed_req`	httr request object

`tide` *Tidal information for a location within the USA. Tidal information only available for US cities. Units are in feet.*

Description

Tidal information for a location within the USA. Tidal information only available for US cities. Units are in feet.

Usage

```
tide(location, key = get_api_key(), raw = FALSE, message = TRUE)
```

Arguments

`location`	location set by set_location
`key`	weather underground API key
`raw`	if TRUE return raw httr object
`message`	if TRUE print out requested URL

Value

tbl_df with date, height and type

Examples

```
## Not run:
tide(set_location(territory = "Hawaii", city = "Honolulu"))
tide(set_location(territory = "Washington", city = "Seattle"))
tide(set_location(territory = "Louisiana", city = "New Orleans"))

## End(Not run)
```

webcam *Returns locations of personal weather stations along with URLs for their webcam images*

Description

Returns locations of personal weather stations along with URLs for their webcam images

Usage

```
webcam(location, key = get_api_key(), raw = FALSE, message = TRUE)
```

Arguments

location	location set by set_location
key	weather underground API key
raw	if TRUE return raw httr object
message	if TRUE print out requested URL

Value

tbl_df of weather stations including: handle, id, city, state, country, tz, lat, lon, last updated, image URL and cam URL.

Examples

```
## Not run:
webcam(set_location(territory = "Hawaii", city = "Honolulu"))
webcam(set_location(territory = "Iowa", city = "Iowa City"))
webcam(set_location(territory = "Iraq", city = "Baghdad"))

## End(Not run)
```

wunderground_request *wunderground api requests*

Description

wunderground api requests

Usage

```
wunderground_request(request_type, location, date = NULL,
  key = get_api_key(), message = TRUE)
```

Arguments

request_type	Request type TODO::list all types
location	locations set of set_location
date	Date, only applicable for history requests
key	wunderground API key
message	if TRUE print out requested

Value

httr request object

---

yesterday *Weather data for yesterday*

Description

Weather data for yesterday

Usage

```
yesterday(location, use_metric = FALSE, key = get_api_key(), raw = FALSE,
  message = TRUE, summary = FALSE)
```

Arguments

location	location set by set_location
use_metric	Metric or imperial units
key	weather underground API key
raw	if TRUE return raw httr object
message	if TRUE print out requested URL
summary	If TRUE return daily summary otherwise hourly data

Value

tbl_df with date, temperature, dew point, humidity, wind speed, gust and direction, visibility, pressure, wind chill, heat index, precipitation, condition, fog, rain, snow, hail, thunder, tornado

Examples

```
## Not run:
yesterday(set_location(territory = "Hawaii", city = "Honolulu"))
yesterday(set_location(territory = "Iowa", city = "Iowa City"))
yesterday(set_location(territory = "Iraq", city = "Baghdad"))
yesterday(set_location(territory = "IR", city = "Tehran"), summary = TRUE)

## End(Not run)
```

Index