

Package ‘rStrava’

October 14, 2022

Type Package

Title Access the 'Strava' API

Version 1.1.4

Date 2021-10-26

Description

Functions to access data from the 'Strava v3 API' <<https://developers.strava.com/>>.

BugReports <https://github.com/fawda123/rStrava/issues>

License CC0

Imports bitops, dplyr, geosphere, ggplot2, ggrepel, googleway, htr,
httpuv, magrittr, plyr, RCurl, rvest, tidyr, XML, xml2, purrr,
tibble, V8

Suggests ggmap

Depends R (>= 3.5.0)

RoxygenNote 7.1.1

NeedsCompilation no

Author Marcus W. Beck [cre],
Pedro Villarroel [aut],
Daniel Padfield [aut],
Lorenzo Gaborini [aut],
Niklas von Maltzahn [aut]

Maintainer Marcus W. Beck <mbafs2012@gmail.com>

Repository CRAN

Date/Publication 2021-10-27 11:40:05 UTC

R topics documented:

achievement_fun	3
athlind_fun	3
athl_fun	4
chk_nopolyline	5

compile_activities	6
compile_activity	7
compile_activity_streams	8
compile_club_activities	9
compile_segment	10
compile_seg_effort	11
compile_seg_efforts	12
filter.actframe	13
get_activity	14
get_activity_list	15
get_activity_streams	16
get_athlete	17
get_basic	18
get_club	19
get_dists	20
get_efforts_list	21
get_elev_prof	22
get_explore	24
get_gear	25
get_heat_map	26
get_KOMs	29
get_laps	30
get_latlon	30
get_leaderboard	31
get_pages	32
get_segment	33
get_spdsplits	34
get_starred	35
get_streams	36
location_fun	37
monthly_fun	37
mutate.actframe	38
plot_spdsplits	39
ratelimit	40
recent_fun	41
seltime_fun	41
strava_oauth	42
units_fun	43
url_activities	43
url_athlete	44
url_clubs	45
url_gear	45
url_segment	46
url_streams	47

achievement_fun	<i>Get recent achievements</i>
-----------------	--------------------------------

Description

Get recent achievements, used internally in [athl_fun](#)

Usage

```
achievement_fun(prsd)
```

Arguments

prsd	parsed input list
------	-------------------

Value

A data frame of recent achievements for the athlete. An empty list is returned if none found

athlind_fun	<i>Get data for a single athlete</i>
-------------	--------------------------------------

Description

Get data for a single athlete by web scraping, does not require authentication.

Usage

```
athlind_fun(athl_num)
```

Arguments

athl_num	numeric athlete id used by Strava
----------	-----------------------------------

Value

A list with elements for the athlete name, location, units of measurement, monthly data, recent activities, and achievements.

athl_fun	<i>Get data for an athlete</i>
----------	--------------------------------

Description

Get data for an athlete by web scraping, does not require authentication.

Usage

```
athl_fun(athl_num, trace = TRUE)
```

Arguments

athl_num	numeric vector of athlete id(s) used by Strava
trace	logical indicating if output is returned to console

Details

The athlete id is assigned to the user during registration with Strava and this must be known to use the function. Some users may have privacy settings that prevent public access to account information (a message indicating as such will be returned by the function). The function scrapes data using the following URL with the appended athlete id, e.g., <https://www.strava.com/athletes/2837007>. Opening the URL in a web browser can verify if the data can be scraped. Logging in to the Strava account on the website may also be required before using this function.

Value

A list for each athlete, where each element is an additional list with elements for the athlete name, location, units of measurement, monthly data, recent activities, and achievements. The list elements are named using the athlete id numbers. NA will be returned if the data for an athlete could not be accessed.

Examples

```
## single athlete
athl_fun(2837007)

## multiple athletes
athl_fun(c(2837007, 2527465))
```

chk_nopolyline	<i>Remove activities with no geographic data</i>
----------------	--

Description

Remove activities with no geographic data, usually manual entries

Usage

```
chk_nopolyline(act_data, ...)  
  
## S3 method for class 'actframe'  
chk_nopolyline(act_data, ...)
```

Arguments

act_data	a data.frame returned by compile_activities
...	arguments passed to or from other methods

Details

This function is used internally within [get_elev_prof](#) and [get_heat_map](#) to remove activities that cannot be plotted because they have no geographic information. This usually applies to activities that were manually entered.

Value

act_data with rows removed where no polylines were available, the original dataset is returned if none were found. A warning is also returned indicating the row numbers that were removed if applicable.

Author(s)

Marcus Beck

Examples

```
## Not run:  
# get my activities  
token <- httr::config(token = strava_oauth(app_name, app_client_id, app_secret, cache = TRUE))  
my_acts <- get_activity_list(token)  
act_data <- compile_activities(my_acts)  
chk_nopolyline(act_data)  
  
## End(Not run)
```

compile_activities *converts a list of activities into a dataframe*

Description

converts a list of activities into a dataframe

Usage

```
compile_activities(actlist, acts = NULL, id = NULL, units = "metric")
```

Arguments

actlist	an activities list returned by get_activity_list
acts	numeric indicating which activities to compile starting with most recent, defaults to all
id	optional numeric vector to specify the id(s) of the activity/activities to plot, acts is ignored if provided
units	chr string indicating metric or imperial

Details

each activity has a value for every column present across all activities, with NAs populating empty values

Value

An activities frame object (actframe that includes a data frame for the data and attributes for the distance, speed, and elevation units

Author(s)

Daniel Padfield

See Also

[compile_club_activities](#) for compiling an activities list for club activities

Examples

```
## Not run:  
token <- httr::config(token = strava_oauth(app_name, app_client_id, app_secret, cache = TRUE))  
  
my_acts <- get_activity_list(token)  
  
acts_data <- compile_activities(my_acts)
```

```
# show attributes
attr(acts_data, 'unit_type')
attr(acts_data, 'unit_vals')

## End(Not run)
```

compile_activity *convert a single activity list into a dataframe*

Description

convert a single activity list into a dataframe

Usage

```
compile_activity(x, columns)
```

Arguments

x	a list containing details of a single Strava activity
columns	a character vector of all the columns in the list of Strava activities. Produced automatically in compile_activities . Leave blank if running for a single activity list.

Details

used internally in [compile_activities](#)

Value

dataframe where every column is an item from a list. Any missing columns rom the total number of columns

Author(s)

Daniel Padfield

Examples

```
## Not run:
token <- httr::config(token = strava_oauth(app_name, app_client_id, app_secret, cache = TRUE))

acts <- get_activity_list(token)

compile_activity(acts[1])
## End(Not run)
```

`compile_activity_streams`*Convert a set of streams of a single activity into a dataframe*

Description

Convert a set of streams of a single activity into a dataframe, with the retrieved columns.

Usage

```
compile_activity_streams(streams, id = NULL)
```

Arguments

<code>streams</code>	a list containing details of the Strava streams of a single activity (output of get_streams)
<code>id</code>	if not missing, the activity id of the stream (will be appended to the data.frame, if non-empty)

Details

used internally in [get_activity_streams](#)

Value

data frame where every column is the stream data for the retrieved types.

Author(s)

Lorenzo Gaborini

Examples

```
## Not run:
token <- httr::config(token = strava_oauth(app_name, app_client_id, app_secret, cache = TRUE))

act_id <- 351217692
streams <- get_streams(token, id = act_id, types = list('distance', 'latlng'))

compile_activity_streams(streams, id = act_id)
## End(Not run)
```

`compile_club_activities`*converts a list of club activities into a dataframe*

Description

converts a list of club activities into a dataframe

Usage

```
compile_club_activities(actlist)
```

Arguments

`actlist` a club activities list returned by [get_activity_list](#)

Details

each activity has a value for every column present across all activities, with NAs populating empty values

Value

An `data.frame` of the compiled activities from `actlist`

Author(s)

Marcus Beck

Examples

```
## Not run:
token <- htr::config(token = strava_oauth(app_name, app_client_id, app_secret, cache = TRUE))

club_acts <- get_activity_list(token, id = 13502, club = TRUE)

acts_data <- compile_club_activities(club_acts)

## End(Not run)
```

compile_segment	<i>Compile information on a segment</i>
-----------------	---

Description

Compile generation information on a segment

Usage

```
compile_segment(seglist)
```

Arguments

seglist a Strava segment list returned by [get_segment](#)

Details

compiles information for a segment

Value

dataframe of all information given in a call from [get_segment](#)

Examples

```
## Not run:
# create authentication token
# requires user created app name, id, and secret from Strava website
stoken <- httr::config(token = strava_oauth(app_name, app_client_id,
app_secret, cache = TRUE))

# compile segment info
get_segment(stoken, id = 229781) %>% compile_segment

# compile top ten leaderboard for the segment
get_segment(stoken, id = 229781, request = "leaderboard") %>% compile_segment

# compile all efforts for the authenticated user on the segment
get_segment(stoken, id = 4483903, request = 'all_efforts') %>% compile_segment

# compile the starred segments for the user
get_segment(stoken, request = 'starred') %>% compile_segment

## End(Not run)
```

compile_seg_effort	<i>Compile the efforts of a segment</i>
--------------------	---

Description

Cleans up the output of `get_efforts_list()` into a dataframe

Usage

```
compile_seg_effort(x)
```

Arguments

x A list object produced by `get_efforts_list`

Details

Used internally in `compile_seg_efforts`. Can be used on the output of `get_efforts_list` to compile the segment efforts of a single segment. Each call to `get_efforts_list` returns a large list. This function returns a subset of this information.

Value

A dataframe containing all of the efforts of a specific segment. The columns returned are `athlete_id`, `distance`, `elapsed_time`, `moving_time`, `name`, `start_date` and `start_date_local`.

Author(s)

Daniel Padfield

Examples

```
## Not run:
# set token
stoken <- httr::config(token = strava_oauth(app_name, app_client_id, app_secret, cache = TRUE))

# segments to get efforts from - use some parkruns
segment <- 2269028

# get segment efforts
efforts <- get_efforts_list(stoken, segment)

# compile efforts
efforts <- compile_seg_effort(efforts)

## End(Not run)
```

compile_seg_efforts *Compile the efforts of multiple segments*

Description

Compiles the information of athletes from multiple segments

Usage

```
compile_seg_efforts(segment_ids, stoken)
```

Arguments

segment_ids A vector of segment ids from which to compile efforts
stoken A [config](#) object created using the [strava_oauth](#) function

Details

Uses [get_elev_prof](#) and [compile_seg_effort](#) internally to compile efforts of multiple segments

Value

A dataframe of the details of each segment effort

Author(s)

Daniel Padfield

Examples

```
## Not run:  
# set token  
stoken <- httr::config(token = strava_oauth(app_name, app_client_id, app_secret, cache = TRUE))  
  
# segments to get efforts from - use some parkruns  
segments <- c(2269028, 5954625)  
  
# compile segment efforts  
segments %>% purrr::map_df(., .f = compile_seg_efforts, stoken = my_token, .id = 'id')  
  
## End(Not run)
```

filter.actframe	<i>Filter</i>
-----------------	---------------

Description

This is a wrapper function to `dplyr::filter` which can be applied to an `actframe` object

Usage

```
## S3 method for class 'actframe'  
filter(.data, ...)
```

Arguments

<code>.data</code>	an <code>actframe</code> object
<code>...</code>	Logical predicates defined in terms of the variables in <code>.data</code>

Value

an `actframe` object

Examples

```
## Not run:  
library(dplyr)  
  
# get actframe, all activities  
stoken <- httr::config(  
  token = strava_oauth(  
    app_name,  
    app_client_id,  
    app_secret,  
    app_scope="activity:read_all"  
  )  
)  
my_acts <- get_activity_list(stoken)  
act_data <- compile_activities(my_acts)  
  
# mutate  
act_data %>% filter(name %in% 'Morning Ride')  
  
## End(Not run)
```

get_activity	<i>Get detailed data of an activity</i>
--------------	---

Description

Get detailed data of an activity, including segment efforts

Usage

```
get_activity(id, stoken)
```

Arguments

id	numeric for id of the activity
stoken	A config object created using the strava_oauth function

Details

Requires authentication stoken using the [strava_oauth](#) function and a user-created API on the strava website.

The id for each activity can be viewed using results from [get_activity_list](#).

Value

Data from an API request.

Examples

```
## Not run:  
# create authentication token  
# requires user created app name, id, and secret from Strava website  
stoken <- httr::config(token = strava_oauth(app_name, app_client_id,  
app_secret, cache = TRUE))  
  
get_activity(75861631, stoken)  
  
## End(Not run)
```

get_activity_list *Get an activities list*

Description

Get an activities list of the desired type (club, user)

Usage

```
get_activity_list(stoken, id = NULL, before = NULL, after = NULL, club = FALSE)
```

Arguments

stoken	A config object created using the strava_oauth function
id	numeric for id of the activity or club if club = TRUE, leave blank to retrieve all activities
before	date object for filtering activities before the indicated date
after	date object for filtering activities after the indicated date
club	logical if you want the activities of a club

Details

Requires authentication stoken using the [strava_oauth](#) function and a user-created API on the strava website. If retrieving activities using individual id values, the output list returned contains additional information from the API and the results have not been tested with the functions in this package. It is better practice to retrieve all activities (as in the example below), use [compile_activities](#), and then filter by individual activities.

If retrieving club activities, the user for the API must be a member of the club.

Value

A list of activities for further processing or plotting.

Examples

```
## Not run:  
# create authentication token  
# requires user created app name, id, and secret from Strava website  
stoken <- httr::config(token = strava_oauth(app_name, app_client_id,  
app_secret, cache = TRUE))  
  
get_activity_list(stoken)  
  
## End(Not run)
```

get_activity_streams *Retrieve streams for activities, and convert to a dataframe*

Description

Retrieve streams for activities, and convert to a dataframe.

Usage

```
get_activity_streams(act_data, ...)
```

```
## S3 method for class 'list'
get_activity_streams(
  act_data,
  stoken,
  acts = NULL,
  id = NULL,
  types = NULL,
  resolution = "high",
  series_type = "distance",
  ...
)
```

```
## S3 method for class 'actframe'
get_activity_streams(
  act_data,
  stoken,
  types = NULL,
  resolution = "high",
  series_type = "distance",
  ...
)
```

Arguments

act_data	an list object returned by get_activity_list or a data.frame returned by compile_activities
...	arguments passed to or from other methods
stoken	A config object created using the strava_oauth function
acts	numeric indicating which activities to compile starting with most recent, defaults to all
id	optional numeric vector to specify the id(s) of the activity/activities to plot, acts is ignored if provided
types	list indicating which streams to get for each activity, defaults to all available, see details.

resolution	chr string for the data resolution to retrieve, can be "low", "medium", "high", defaults to all
series_type	chr string for merging the data if resolution is not equal to "all". Accepted values are "distance" (default) or "time".

Details

Each activity has a value for every column present across all activities, with NAs populating missing values.

For the types argument, the default is type = NULL which will retrieve all available stream types. The available stream types can be any of time, latlng, distance, altitude, velocity_smooth, heartrate, cadence, watts, temp, moving, or grade_smooth. To retrieve only a subset of the types, pass a list argument with the appropriate character strings to type, e.g., type = list("time", "latlng", "distance").

Value

A stream frame object (strframe that includes a data frame for the stream data along with the units

Author(s)

Lorenzo Gaborini

Examples

```
## Not run:
token <- httr::config(token = strava_oauth(app_name, app_client_id, app_secret, cache = TRUE))

my_acts <- get_activity_list(token)

strms_data <- get_activity_streams(my_acts, token, acts = 1:2)

## End(Not run)
```

get_athlete

Get basic data for an athlete

Description

Get basic athlete data for an athlete using an API request

Usage

```
get_athlete(token, id = NULL)
```

Arguments

token A `config` object created using the `strava_oauth` function
 id string or integer of athlete

Details

Requires authentication token using the `strava_oauth` function and a user-created API on the strava website.

Value

A list of athlete information including athlete name, location, followers, etc. as described here: <https://strava.github.io/api/v3/athlete/>.

Examples

```
## Not run:
# create authentication token
# requires user created app name, id, and secret from Strava website
token <- httr::config(token = strava_oauth(app_name, app_client_id,
app_secret, cache = TRUE))

get_athlete(token, id = '2527465')

## End(Not run)
```

get_basic	<i>Get basic Strava data</i>
-----------	------------------------------

Description

Get basic Strava data with requests that don't require pagination

Usage

```
get_basic(url_, token, queries = NULL)
```

Arguments

url_ string of url for the request to the API
 token A `config` object created using the `strava_oauth` function
 queries list of additional queries or parameters

Details

Requires authentication token using the `strava_oauth` function and a user-created API on the strava website.

Value

Data from an API request.

Examples

```
## Not run:
# create authentication token
# requires user created app name, id, and secret from Strava website
token <- httr::config(token = strava_oauth(app_name, app_client_id,
app_secret, cache = TRUE))

# get basic user info
get_basic('https://strava.com/api/v3/athlete', token)

## End(Not run)
```

get_club	<i>Get club data</i>
----------	----------------------

Description

Get club data for a given request

Usage

```
get_club(stoken, id = NULL, request = NULL)
```

Arguments

stoken	A config object created using the strava_oauth function
id	numeric for id of the club, defaults to authenticated club of the athlete
request	chr string, must be "members", "activities" or NULL for club details

Details

Requires authentication stoken using the [strava_oauth](#) function and a user-created API on the strava website.

Value

Data from an API request.

Examples

```
## Not run:
# create authentication token
# requires user created app name, id, and secret from Strava website
stoken <- httr::config(token = strava_oauth(app_name, app_client_id,
app_secret, cache = TRUE))

get_club(stoken)

## End(Not run)
```

get_dists

Get distance from longitude and latitude points

Description

Get distance from longitude and latitude points

Usage

```
get_dists(lon, lat)
```

Arguments

lon	chr string indicating name of longitude column in dat_in
lat	chr string indicating name of latitude column in dat_in in dat_in

Details

Used internally in [get_elev_prof](#) on objects returned by [get_latlon](#)

Value

A vector of distances with the length as the number of rows in dat_in

Author(s)

Daniel Padfield

Examples

```
## Not run:
# get activity data
stoken <- httr::config(token = strava_oauth(app_name, app_client_id, app_secret, cache = TRUE))
my_acts <- get_activity_list(stoken)

# get the latest activity
acts_data <- compile_activities(my_acts)[1, ]
```

```
# get lat, lon
polyline <- acts_data$map.summary.polyline
latlon <- get_latlon(polyline, key = mykey)

# get distance
get_dists(latlon$lon, latlon$lat)

## End(Not run)
```

get_efforts_list *Get all the efforts in a segment if no queries are specified*

Description

Get all the efforts in a segment if no queries are specified

Usage

```
get_efforts_list(
  stoken,
  id,
  athlete_id = NULL,
  start_date_local = NULL,
  end_date_local = NULL
)
```

Arguments

stoken A [config](#) object created using the [strava_oauth](#) function
id numeric for id of the segment
athlete_id numeric for the athlete id for filtering the results
start_date_local the start date for filtering the results
end_date_local the end date for filtering the results

Details

Requires authentication stoken using the [strava_oauth](#) function and a user-created API on the strava website.

Value

Data from an API request.

Examples

```
## Not run:
# create authentication token
# requires user created app name, id, and secret from Strava website
stoken <- httr::config(token = strava_oauth(app_name, app_client_id,
app_secret, cache = TRUE))

get_efforts_list(stoken, id = 229781)

## End(Not run)
```

get_elev_prof	<i>Create elevation profiles from activity data</i>
---------------	---

Description

Create elevation profiles from activity data

Usage

```
get_elev_prof(act_data, ...)

## S3 method for class 'list'
get_elev_prof(
  act_data,
  acts = 1,
  id = NULL,
  key,
  total = FALSE,
  expand = 10,
  units = "metric",
  fill = "darkblue",
  ...
)

## S3 method for class 'actframe'
get_elev_prof(
  act_data,
  key,
  total = FALSE,
  expand = 10,
  fill = "darkblue",
  ...
)

## S3 method for class 'strframe'
get_elev_prof(act_data, total = FALSE, expand = 10, fill = "darkblue", ...)
```

Arguments

act_data	an activities list object returned by get_activity_list or a data.frame returned by compile_activities
...	arguments passed to or from other methods
acts	numeric value indicating which elements of act_data to plot, defaults to most recent
id	optional numeric vector to specify the id(s) of the activity/activities to plot, acts is ignored if provided
key	chr string of Google API key for elevation data, passed to google_elevation , see details
total	logical indicating if elevations are plotted as cumulative climbed by distance
expand	a numeric multiplier for expanding the number of lat/lon points on straight lines. This can create a smoother elevation profile. Set expand = 1 to suppress this behavior.
units	chr string indicating plot units as either metric or imperial, this has no effect if input data are already compiled with compile_activities
fill	chr string of fill color for profile

Details

The Google API key is easy to obtain, follow instructions here: <https://developers.google.com/maps/documentation/elevation>

Value

A ggplot of elevation profiles, faceted by activity id, date

Author(s)

Daniel Padfield, Marcus Beck

See Also

[get_dists](#)

Examples

```
## Not run:
# get my activities
token <- htrr::config(token = strava_oauth(app_name, app_client_id, app_secret, cache = TRUE))
my_acts <- get_activity_list(token)

# your unique key
mykey <- 'Get Google API key'
get_elev_prof(my_acts, acts = 1:2, key = mykey)

# compile first, change units
my_acts <- compile_activities(my_acts, acts = c(1:2), units = 'imperial')
get_elev_prof(my_acts, key = mykey)
```

```
## End(Not run)
```

```
get_explore           Explore segments within a bounded area
```

Description

Explore segments within a bounded area

Usage

```
get_explore(
  stoken,
  bounds,
  activity_type = "riding",
  max_cat = NULL,
  min_cat = NULL
)
```

Arguments

stoken	A config object created using the strava_oauth function
bounds	chr string representing the comma separated list of bounding box corners 'sw.lat,sw.lng,ne.lat,ne.lng' or 'south, west, north, east', see the example
activity_type	chr string indicating activity type, "riding" or "running"
max_cat	numeric indicating the maximum climbing category
min_cat	numeric indicating the minimum climbing category

Details

Requires authentication stoken using the [strava_oauth](#) function and a user-created API on the strava website.

Value

Data from an API request.

Examples

```
## Not run:
# create authentication token
# requires user created app name, id, and secret from Strava website
stoken <- httr::config(token = strava_oauth(app_name, app_client_id,
app_secret, cache = TRUE))

bnds <- "37.821362, -122.505373, 37.842038, -122.465977"
```



```
get_explore(stoken, bnds)

## End(Not run)
```

get_gear

Get gear details from its identifier

Description

Get gear details from its identifier

Usage

```
get_gear(id, stoken)
```

Arguments

id	string, identifier of the equipment item
stoken	A config object created using the strava_oauth function

Details

Requires authentication stoken using the [strava_oauth](#) function and a user-created API on the strava website.

Value

Data from an API request.

Examples

```
## Not run:
# create authentication token
# requires user created app name, id, and secret from Strava website
stoken <- httr::config(token = strava_oauth(app_name, app_client_id,
app_secret, cache = TRUE))

get_gear("g2275365", stoken)

## End(Not run)
```

`get_heat_map`*Makes a heat map from your activity data*

Description

Makes a heat map from your activity data

Usage

```
get_heat_map(act_data, ...)  
  
## S3 method for class 'list'  
get_heat_map(  
  act_data,  
  key,  
  acts = 1,  
  id = NULL,  
  alpha = NULL,  
  f = 0.1,  
  add_elev = FALSE,  
  as_grad = FALSE,  
  distlab = TRUE,  
  distval = 0,  
  size = 0.5,  
  col = "red",  
  expand = 10,  
  maptype = "terrain",  
  source = "google",  
  units = "metric",  
  ...  
)  
  
## S3 method for class 'actframe'  
get_heat_map(  
  act_data,  
  key,  
  alpha = NULL,  
  f = 1,  
  add_elev = FALSE,  
  as_grad = FALSE,  
  distlab = TRUE,  
  distval = 0,  
  size = 0.5,  
  col = "red",  
  expand = 10,  
  maptype = "terrain",  
  source = "google",
```

```

    ...
)

## S3 method for class 'strframe'
get_heat_map(
  act_data,
  alpha = NULL,
  f = 1,
  filltype = c("elevation", "distance", "slope", "speed"),
  distlab = TRUE,
  distval = 0,
  size = 0.5,
  col = "red",
  expand = 10,
  maptype = "terrain",
  source = "google",
  ...
)

```

Arguments

act_data	an activities list object returned by get_activity_list , an actframe returned by compile_activities , or a strframe returned by get_activity_streams
...	arguments passed to or from other methods
key	chr string of Google API key for elevation data, passed to google_elevation for polyline decoding, see details
acts	numeric indicating which activities to plot based on index in the activities list, defaults to most recent
id	optional numeric vector to specify the id(s) of the activity/activities to plot, acts is ignored if provided
alpha	the opacity of the line desired. A single activity should be 1. Defaults to 0.5
f	number specifying the fraction by which the range should be extended for the bounding box of the activities, passed to make_bbox
add_elev	logical indicating if elevation is overlaid by color shading on the activity lines
as_grad	logical indicating if elevation is plotted as percent gradient, applies only if add_elev = TRUE
distlab	logical if distance labels are plotted along the route with geom_label_repel
distval	numeric indicating rounding factor for distance labels which has direct control on label density, see details
size	numeric indicating width of activity lines
col	chr string indicating either a single color of the activity lines if add_grad = FALSE or a color palette passed to scale_fill_distiller if add_grad = TRUE
expand	a numeric multiplier for expanding the number of lat/lon points on straight lines. This can create a smoother elevation gradient if add_grad = TRUE. Set expand = 1 to suppress this behavior.

maptype	chr string indicating the base map type relevant for the source, passed to <code>get_map</code>
source	chr string indicating map source, passed to <code>get_map</code> , currently only "google" and "osm" are supported
units	chr string indicating plot units as either metric or imperial, this has no effect if input data are already compiled with <code>compile_activities</code>
filltype	chr string specifying which stream variable to use for filling line segments, applies only to <code>strframe</code> objects, acceptable values are "elevation", "distance", "slope", or "speed"

Details

uses `get_latlon` to produce a dataframe of latitudes and longitudes to use in the map. Uses `ggmap` to produce the map and `ggplot2` to plot the route.

The Google API key for elevation is easy to obtain, follow instructions here: <https://developers.google.com/maps/documentation>

A Google API key is needed if using any map services where `source = "google"`. The same key used for the elevation API can be used but must be registered externally with the `ggmap` package using `register_google()` before executing `get_heat_map()`. See the examples.

The `distval` argument is passed to the `digits` argument of `round`. This controls the density of the distance labels, e.g., 1 will plot all distances in sequence of 0.1, 0 will plot all distances in sequence of one, -1 will plot all distances in sequence of 10, etc.

Value

plot of activity on a Google map

Author(s)

Daniel Padfield, Marcus Beck

Examples

```
## Not run:
# get my activities
token <- htrr::config(token = strava_oauth(app_name, app_client_id, app_secret, cache = TRUE))
my_acts <- get_activity_list(token)

# register Google maps API key
library(ggmap)
register_google('xxxxxxxxxx') # enter your key here

# default, requires Google key
mykey <- 'Get Google API key'
get_heat_map(my_acts, acts = 1, alpha = 1, key = mykey)

# plot elevation on locations, requires key
get_heat_map(my_acts, acts = 1, alpha = 1, key = mykey, add_elev = TRUE, col = 'Spectral', size = 2)

# compile first, change units
my_acts <- compile_activities(my_acts, acts = 156, units = 'imperial')
```

```
get_heat_map(my_acts, key = mykey, alpha = 1, add_elev = T, col = 'Spectral', size = 2,
  maptype = 'satellite')

## End(Not run)
```

get_KOMs

Get KOMs/QOMs/CRs of an athlete

Description

Get KOMs/QOMs/CRs of an athlete

Usage

```
get_KOMs(id, stoken)
```

Arguments

`id` string or integer of athlete
`stoken` A [config](#) object created using the [strava_oauth](#) function

Details

Requires authentication stoken using the [strava_oauth](#) function and a user-created API on the strava website.

Value

Data from an API request.

Examples

```
## Not run:
# create authentication token
# requires user created app name, id, and secret from Strava website
stoken <- httr::config(token = strava_oauth(app_name, app_client_id,
  app_secret, cache = TRUE))

get_KOMs(2837007, stoken)

## End(Not run)
```

get_laps *Retrieve the laps of an activity*

Description

Retrieve the laps of an activity

Usage

```
get_laps(stoken, id)
```

Arguments

stoken	A config object created using the strava_oauth function
id	numeric for id of the activity with the laps to request

Details

Requires authentication stoken using the [strava_oauth](#) function and a user-created API on the strava website.

Value

Data from an API request.

Examples

```
## Not run:  
# create authentication token  
# requires user created app name, id, and secret from Strava website  
stoken <- httr::config(token = strava_oauth(app_name, app_client_id,  
app_secret, cache = TRUE))  
  
get_laps(stoken, id = 351217692)  
  
## End(Not run)
```

get_latlon *get latitude and longitude from Google polyline*

Description

get latitude and longitude from Google polyline

Usage

```
get_latlon(polyline, key)
```

Arguments

polyline a map polyline returned for an activity from the API
 key chr string of Google API key for elevation data, passed to [google_elevation](#)

Value

dataframe of latitude and longitudes with a column for the unique identifier

Author(s)

Daniel Padfield, Marcus Beck

Examples

```
## Not run:
token <- httr::config(token = strava_oauth(app_name, app_client_id, app_secret, cache = TRUE))

my_acts <- get_activity_list(token)
acts_data <- compile_activities(my_acts)

# get lat and lon for a single activity
polyline <- acts_data$map.summary.polyline[[1]]
get_latlon(polyline, key = mykey)

## End(Not run)
```

get_leaderboard	<i>Retrieve the leaderboard of a segment</i>
-----------------	--

Description

Retrieve the leaderboard of a segment

Usage

```
get_leaderboard(stoken, id, nleaders = 10, All = FALSE)
```

Arguments

stoken A [config](#) object created using the [strava_oauth](#) function
 id numeric for id of the segment
 nleaders numeric for number of leaders to retrieve
 All logical to retrieve all of the list

Details

Requires authentication stoken using the [strava_oauth](#) function and a user-created API on the strava website.

Value

Data from an API request.

Examples

```
## Not run:
# create authentication token
# requires user created app name, id, and secret from Strava website
stoken <- httr::config(token = strava_oauth(app_name, app_client_id,
app_secret, cache = TRUE))

get_leaderboard(stoken, id = 229781)

## End(Not run)
```

get_pages	<i>Get several pages of one type of request</i>
-----------	---

Description

Get several pages of one type of request to the API

Usage

```
get_pages(
  url_,
  stoken,
  per_page = 30,
  page_id = 1,
  page_max = 1,
  before = NULL,
  after = NULL,
  queries = NULL,
  All = FALSE
)
```

Arguments

url_	string of url for the request to the API
stoken	A config object created using the strava_oauth function
per_page	numeric indicating number of items retrieved per page (maximum 200)
page_id	numeric indicating page id
page_max	numeric indicating maximum number of pages to return
before	date object for filtering activities before the indicated date
after	date object for filtering activities after the indicated date
queries	list of additional queries to pass to the API
All	logical if you want all possible pages within the ratelimit constraint

Details

Requires authentication stoken using the [strava_oauth](#) function and a user-created API on the strava website.

Value

Data from an API request.

Examples

```
## Not run:
# create authentication token
# requires user created app name, id, and secret from Strava website
stoken <- httr::config(token = strava_oauth(app_name, app_client_id,
app_secret, cache = TRUE))

# get basic user info
# returns 30 activities
get_pages('https://strava.com/api/v3/activities', stoken)

## End(Not run)
```

get_segment	<i>Retrieve details about a specific segment</i>
-------------	--

Description

Retreive details about a specific segment

Usage

```
get_segment(stoken, id = NULL, request = NULL)
```

Arguments

stoken	A config object created using the strava_oauth function
id	numeric for id of the segment
request	chr string, must be "starred", "leaderboard", "all_efforts", or NULL for segment details

Details

Requires authentication stoken using the [strava_oauth](#) function and a user-created API on the strava website. The authenticated user must have an entry for a segment to return all efforts if request = "all_efforts". For request = "starred", set id = NULL.

Value

Data from an API request.

See Also

[compile_segment](#) for converting the list output to data.frame

Examples

```
## Not run:
# create authentication token
# requires user created app name, id, and secret from Strava website
stoken <- httr::config(token = strava_oauth(app_name, app_client_id,
app_secret, cache = TRUE))

# get segment info
get_segment(stoken, id = 229781)

# get top ten leaderboard for the segment
get_segment(stoken, id = 229781, request = "leaderboard")

# get all efforts for the authenticated user on the segment
get_segment(stoken, id = 4483903, request = 'all_efforts')

# get the starred segments for the user
get_segment(stoken, request = 'starred')

## End(Not run)
```

get_spdsplits

Get speed splits in a dataframe

Description

Allows the return of speed splits of multiple rides.

Usage

```
get_spdsplits(act_id, stoken, units = "metric")
```

Arguments

act_id	a vector of activity IDs. These are easily found in the data.frame returned by compile_activities
stoken	A config object created using the strava_oauth function
units	chr string indicating plot units as either metric or imperial

Value

a data frame containing the splits of the activity or activities selected.

Author(s)

Marcus Beck

Examples

```
## Not run:
# get my activities
stoken <- htrr::config(token = strava_oauth(app_name, app_client_id, app_secret, cache = TRUE))
my_acts <- get_activity_list(stoken)

# compile activities
acts_data <- compile_activities(my_acts)

# get spdsplits for all activities
spd_splits <- purrr::map_df(acts_data$id, get_spdsplits, stoken = stoken,
  units = 'metric', .id = 'id')

## End(Not run)
```

get_starred

Retrieve a summary of the segments starred by an athlete

Description

Retrieve a summary of the segments starred by an athlete

Usage

```
get_starred(stoken, id = NULL)
```

Arguments

stoken	A config object created using the strava_oauth function
id	numeric for id of the athlete, defaults to authenticated athlete

Details

Requires authentication stoken using the [strava_oauth](#) function and a user-created API on the strava website.

Value

Data from an API request.

Examples

```
## Not run:
# create authentication token
# requires user created app name, id, and secret from Strava website
stoken <- httr::config(token = strava_oauth(app_name, app_client_id,
app_secret, cache = TRUE))

get_starred(stoken)

## End(Not run)
```

get_streams

Retrieve a Strava data stream for a single activity

Description

Retrieve a Strava data stream for a single activity. Internally called by [get_activity_streams](#).

Usage

```
get_streams(
  stoken,
  id,
  request = "activities",
  types = NULL,
  resolution = NULL,
  series_type = NULL
)
```

Arguments

stoken	A config object created using the strava_oauth function
id	numeric for id of the request
request	chr string defining the stream type, must be "activities", "segment_efforts", "segments"
types	list of chr strings with any combination of "time", "latlng", "distance", "altitude", "velocity_smooth", "heartrate", "cadence", "watts", "temp", "moving", or "grade_smooth"
resolution	chr string for the data resolution to retrieve, can be "low", "medium", "high", defaults to all
series_type	chr string for merging the data if resolution is not equal to "all". Accepted values are "distance" (default) or "time".

Details

Requires authentication stoken using the [strava_oauth](#) function and a user-created API on the strava website. From the API documentation, 'streams' is the Strava term for the raw data associated with an activity.

Value

Data from an API request.

Examples

```
## Not run:
# create authentication token
# requires user created app name, id, and secret from Strava website
stoken <- httr::config(token = strava_oauth(app_name, app_client_id,
app_secret, cache = TRUE))

get_streams(stoken, id = 351217692, types = list('distance', 'latlng'))

## End(Not run)
```

location_fun	<i>Get athlete location</i>
--------------	-----------------------------

Description

Get athlete location, used internally in [athl_fun](#)

Usage

```
location_fun(prsd)
```

Arguments

prsd parsed input list

Value

A character string of the athlete location

monthly_fun	<i>Get distances for last twelve months</i>
-------------	---

Description

Get distances for last twelve months, used internally in [athl_fun](#)

Usage

```
monthly_fun(prsd)
```

Arguments

prsd parsed input list

Value

A data frame of monthly summaries for the athlete, including distance, time, and elevation gain each month. A NA value is returned if no activity was observed in recent months.

mutate.actframe	<i>Mutate</i>
-----------------	---------------

Description

This is a wrapper function to `dplyr::mutate` which can be applied to an `actframe` object

Usage

```
## S3 method for class 'actframe'
mutate(.data, ...)
```

Arguments

.data an actframe object
 ... Name-value pairs of expressions. Use NULL to drop a variable.

Value

an actframe object

Examples

```
## Not run:
library(dplyr)

# get actframe, all activities
stoken <- httr::config(
  token = strava_oauth(
    app_name,
    app_client_id,
    app_secret,
    app_scope="activity:read_all"
  )
)
my_acts <- get_activity_list(stoken)
act_data <- compile_activities(my_acts)

# mutate
act_data %>% mutate(is_run=type=='Run')

## End(Not run)
```

plot_spdsplits	<i>Plot speed by splits</i>
----------------	-----------------------------

Description

Plot average speed by splits for a single activity

Usage

```
plot_spdsplits(act_data, ...)

## S3 method for class 'list'
plot_spdsplits(
  act_data,
  stoken,
  acts = 1,
  id = NULL,
  units = "metric",
  fill = "darkblue",
  ...
)

## Default S3 method:
plot_spdsplits(act_data, stoken, units = "metric", fill = "darkblue", ...)
```

Arguments

act_data	an activities list object returned by get_activity_list or a data.frame returned by compile_activities
...	arguments passed to other methods
stoken	A config object created using the strava_oauth function
acts	numeric indicating which activity to plot based on index in the activities list, defaults to most recent
id	optional numeric vector to specify the id(s) of the activity/activities to plot, acts is ignored if provided
units	chr string indicating plot units as either metric or imperial
fill	chr string of fill color for profile

Details

The average speed per split is plotted, including a dashed line for the overall average. The final split is typically not a complete km or mile.

Value

plot of average distance for each split value in the activity

Author(s)

Marcus Beck

Examples

```
## Not run:
# get my activities
stoken <- httr::config(token = strava_oauth(app_name, app_client_id, app_secret, cache = TRUE))
my_acts <- get_activity_list(stoken)

# default
plot_spdsplits(my_acts, stoken, acts = 1)

## End(Not run)
```

ratelimit

Generate the ratelimit indicator

Description

Checks the ratelimit values after the last request and stores the left requests in a global variable.

Usage

```
ratelimit(req)
```

Arguments

req value returned from the [GET](#) function, used internally in other functions

Details

Requests to the Strava API are rate-limited. The default rate limit allows 600 requests every 15 minutes, with up to 30,000 requests per day. See the documentation at <https://strava.github.io/api/#access>.

Value

A variable for the current limits.

recent_fun	<i>Get last three recent activities</i>
------------	---

Description

Get last three recent activities, used internally in [athl_fun](#)

Usage

```
recent_fun(prsd)
```

Arguments

prsd	parsed input list
------	-------------------

Value

A data frame of recent activities for the athlete. An empty list is returned if none found.

seltime_fun	<i>Format before and after arguments for API query</i>
-------------	--

Description

Format before and after arguments for API query

Usage

```
seltime_fun(dtin, before = TRUE)
```

Arguments

dtin	Date object for before or after inputs
before	logical indicating if input is before

Value

A numeric object as an epoch timestamp

Examples

```
# convert to epoch timestamp
seltime_fun(Sys.Date())

# back to original
as.POSIXct(seltime_fun(Sys.Date()), before = FALSE, tz = Sys.timezone(), origin = '1970-01-01')
```

strava_oauth

Generata Strava API authentication token

Description

Generate a token for the user and the desired scope. The user is sent to the strava authentication page if he/she hasn't given permission to the app yet, else, is sent to the app webpage.

Usage

```
strava_oauth(
  app_name,
  app_client_id,
  app_secret,
  app_scope = "public",
  cache = FALSE
)
```

Arguments

app_name	chr string for name of the app
app_client_id	chr string for ID received when the app was registered
app_secret	chr string for secret received when the app was registered
app_scope	chr string for scope of authentication, Must be "read", "read_all", "profile:read_all", "profile:write", "activity:read", "activity:read_all" or "activity:write"
cache	logical to cache the token

Details

The app_name, app_client_id, and app_secret are specific to the user and can be obtained by registering an app on the Strava API authentication page: <http://strava.github.io/api/v3/oauth/>. This requires a personal Strava account.

Value

A `Token2.0` object returned by `oauth2.0_token` to be used with API function calls

Examples

```
## Not run:
app_name <- 'myappname' # chosen by user
app_client_id <- 'myid' # an integer, assigned by Strava
app_secret <- 'xxxxxxx' # an alphanumeric secret, assigned by Strava

# create the authentication token
stoken <- httr::config(
  token = strava_oauth(
```

```

    app_name,
    app_client_id,
    app_secret,
    app_scope="activity:read_all"
  )
)

# use authentication token
get_athlete(stoken, id = '2837007')

## End(Not run)

```

units_fun

Get units of measurement

Description

Get units of measurement, used internally in [athl_fun](#)

Usage

```
units_fun(prsd)
```

Arguments

prsd parsed input list

Value

A character vector indicating the units for distance used by the athlete

url_activities

Set the url of activities for different activity lists

Description

Set the url of activities for different activity lists

Usage

```
url_activities(id = NULL, club = FALSE)
```

Arguments

id string for id of the activity or club if club = TRUE
club logical if you want the activities of a club

Details

This function concatenates appropriate strings so no authentication token is required. This is used internally by other functions.

Value

The set url.

Examples

```
## Not run:  
# create authentication token  
# requires user created app name, id, and secret from Strava website  
stoken <- httr::config(token = strava_oauth(app_name, app_client_id,  
app_secret, cache = TRUE))  
  
url_activities(2837007)  
  
## End(Not run)
```

url_athlete

Set the url of the athlete to get data

Description

Set the url of the athlete to get data using an ID

Usage

```
url_athlete(id = NULL)
```

Arguments

id str or integer of athlete id assigned by Strava, NULL will set the authenticated user URL

Details

used by other functions

Value

A character string of the athlete URL used for API requests

url_clubs	<i>Set the url of the clubs for the different requests</i>
-----------	--

Description

Set the url of the clubs for the different requests

Usage

```
url_clubs(id = NULL, request = NULL)
```

Arguments

id	numeric for id of the club, defaults to authenticated club of the athlete
request	chr string, must be "members", "activities" or NULL for club details

Details

Function is used internally within [get_club](#)

Value

A url string.

Examples

```
url_clubs()  
url_clubs(123, request = 'members')
```

url_gear	<i>Set the url of the equipment item to get data</i>
----------	--

Description

Set the url of the equipment item to get data using an ID

Usage

```
url_gear(id)
```

Arguments

id	string of gear id assigned by Strava
----	--------------------------------------

Details

used by other functions

Value

A character string of the gear URL used for API requests

url_segment	<i>Set the url for the different segment requests</i>
-------------	---

Description

Set the url for the different segment requests

Usage

```
url_segment(id = NULL, request = NULL)
```

Arguments

id	numeric for id of the segment if request = "all_efforts" or "leaderboard", or id of the athlete if request = "starred", or NULL if using request = "explore" or "starred" of the authenticated user
request	chr string, must be "starred", "all_efforts", "leaderboard", "explore" or NULL for segment details

Details

Function is used internally within [get_segment](#), [get_starred](#), [get_leaderboard](#), [get_efforts_list](#), and [get_explore](#)

Value

A url string.

Examples

```
url_segment()

url_segment(id = 123, request = 'leaderboard')
```

url_streams	<i>Set the url for stream requests</i>
-------------	--

Description

Set the url for stream requests

Usage

```
url_streams(id, request = "activities", types = list("latlng"))
```

Arguments

id	numeric for id of the request
request	chr string defining the stream type, must be "activities", "segment_efforts", "segments"
types	list of chr strings with any combination of "time", "latlng", "distance", "altitude", "velocity_smooth", "heartrate", "cadence", "watts", "temp", "moving", or "grade_smooth"

Details

Function is used internally within [get_streams](#). From the API documentation, 'streams' is the Strava term for the raw data associated with an activity.

Value

A url string.

Examples

```
url_streams(123)
```

Index

* notoken

- achievement_fun, 3
- athl_fun, 4
- athlind_fun, 3
- compile_seg_effort, 11
- get_dists, 20
- location_fun, 37
- monthly_fun, 37
- recent_fun, 41
- units_fun, 43

* token

- chk_nopolyline, 5
- compile_activities, 6
- compile_activity, 7
- compile_activity_streams, 8
- compile_club_activities, 9
- compile_seg_efforts, 12
- compile_segment, 10
- get_activity, 14
- get_activity_list, 15
- get_activity_streams, 16
- get_athlete, 17
- get_basic, 18
- get_club, 19
- get_efforts_list, 21
- get_elev_prof, 22
- get_explore, 24
- get_gear, 25
- get_heat_map, 26
- get_KOMs, 29
- get_laps, 30
- get_latlon, 30
- get_leaderboard, 31
- get_pages, 32
- get_segment, 33
- get_spdsplits, 34
- get_starred, 35
- get_streams, 36
- plot_spdsplits, 39

- ratelimit, 40
- strava_oauth, 42
- url_activities, 43
- url_clubs, 45
- url_segment, 46
- url_streams, 47

- achievement_fun, 3
- athl_fun, 3, 4, 37, 41, 43
- athlind_fun, 3

- chk_nopolyline, 5
- compile_activities, 5, 6, 7, 15, 16, 23, 27, 28, 34, 39
- compile_activity, 7
- compile_activity_streams, 8
- compile_club_activities, 6, 9
- compile_seg_effort, 11, 12
- compile_seg_efforts, 11, 12
- compile_segment, 10, 34
- config, 12, 14–16, 18, 19, 21, 24, 25, 29–36, 39

- filter.actframe, 13

- geom_label_repel, 27
- GET, 40
- get_activity, 14
- get_activity_list, 6, 9, 14, 15, 16, 23, 27, 39
- get_activity_streams, 8, 16, 27, 36
- get_athlete, 17
- get_basic, 18
- get_club, 19, 45
- get_dists, 20, 23
- get_efforts_list, 11, 21, 46
- get_elev_prof, 5, 12, 20, 22
- get_explore, 24, 46
- get_gear, 25
- get_heat_map, 5, 26

`get_KOMs`, 29
`get_laps`, 30
`get_latlon`, 20, 28, 30
`get_leaderboard`, 31, 46
`get_map`, 28
`get_pages`, 32
`get_segment`, 10, 33, 46
`get_spdsplits`, 34
`get_starred`, 35, 46
`get_streams`, 8, 36, 47
`google_elevation`, 23, 27, 31

`location_fun`, 37

`make_bbox`, 27
`monthly_fun`, 37
`mutate.actframe`, 38

`oauth2.0_token`, 42

`plot_spdsplits`, 39

`ratelimit`, 40
`recent_fun`, 41

`scale_fill_distiller`, 27
`seltime_fun`, 41
`strava_oauth`, 12, 14–16, 18, 19, 21, 24, 25,
29–36, 39, 42

`units_fun`, 43
`url_activities`, 43
`url_athlete`, 44
`url_clubs`, 45
`url_gear`, 45
`url_segment`, 46
`url_streams`, 47