Package 'alphavantagepf'

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Title Comprehensive R Wrapper for 'Alphavantage Financial Data' API

Version 0.3.2

Description Download 'Alphavantage financial data' <https://www.alphavantage.co/documentation/> to reduced 'data.table' objects. Includes support functions to extract and simplify complex data returned from API calls.

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Encoding UTF-8

Depends R (>= 4.1.0)

Imports dplyr (>= 1.0.0), data.table, glue (>= 1.1.1), httr (>= 1.2.1), jsonlite (>= 1.5), purrr (>= 1.0), readr (>= 1.1.1), stringr (>= 1.2.0), timeDate (>= 4000.0), lubridate (>= 1.0.0), utils (>= 4.0.0), tidyr (>= 0.6.3)

Suggests testthat, knitr, rmarkdown

RoxygenNote 7.3.3

VignetteBuilder knitr

URL https://github.com/derekholmes0/alphavantagepf

BugReports https://github.com/derekholmes0/alphavantagepf/issues

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Contents

Index   **10**

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alphavantagepf   *alphavantagepf: A lightweight R interface to the Alpha Vantage API*

Description

An R interface to the Alpha Vantage API which emphasizes normalized data nd data.table conventions

Details

The `alphavantagepf` package provides a lightweight interface to the Alpha Vantage API. Alpha Vantage is a free source for financial data that in many cases is more accurate than Yahoo Finance and Google Finance. Get a free API KEY at https://www.alphavantage.co. Then use the R interface functions `av_api_key("YOUR_KEY")` to set the API key and the `av_get_pf()` function to get financial data.

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av_api_key   *Set the Alpha Vantage API Key*

Description

`av_api_key()` sets Alphavantage API key and entitlement code

Usage

```
av_api_key(api_key, entitlement = NULL)
```

Arguments

api_key	A character string with your Alpha Vantage API Key.
entitlement	A character string with your Alpha Vantage entitlement status. If not "delayed" or "realtime" entitlement not added to API string.

Details

The Alpha Vantage API key must be set prior to using `av_get_pf()`. You can obtain an API key at the Alpha Vantage Website.

Value

Invisibly returns two item list with API key and entitlement string once set). Use print method to view.

See Also

[av_get_pf()](av_get_pf())

Examples

```
## Not run:
av_api_key("YOUR_API_KEY",entitlement="delayed")
av_get_pf("IBM", "TIME_SERIES_INTRADAY")

## End(Not run)
```

---

av_extract_df   *Extract data from Alpha Vantage returned data*

Description

av_extract_df() pulls out nested data.frames from mixed data returned by [av_get_pf()](av_get_pf()) av_extract_fx()
returns a simplified FX quote in data.table formfrom [av_get_pf()](av_get_pf()) calls. av_extract_analytics()
returns melted data.table from calls to av_get_pf("ANALYTICS_FIXED_WINDOW") or av_get_pf("ANALYTICS_SLIDING_WIN

Usage

```
av_extract_df(indta, grepstring = "", melt = FALSE)

av_extract_fx(indta)

av_extract_analytics(indta, separate_vars = FALSE)
```

Arguments

indta	A data.table as returned by av_get()
grepstring	select which variable (data item) to unnest in data.table returned from av_get_pf
melt	Return data in melted/normalized form
separate_vars	(default : FALSE) separate out multiple levels of variable names into new keys

Details

[av_get_pf()](av_get_pf()) frequently returns a nested data.table, or a structure with nested data.frames. These
are utilities functions to extract, filter and summarize returned values.

Value

Extracted data.tables for nested data returned from [av_get_pf()](av_get_pf()), If grepstring is not specified,
first nested table is returned. av_extract_fx() returns a shortened data.table with FX quotes.

See Also

av_get_pf(), av_grep_opts()

Examples

```
## Not run:
av_get_pf("","MARKET_STATUS")  |> av_extract_df()
av_get_pf("","TOP_GAINERS_LOSERS") |> av_extract_df("top_losers")
av_get_pf("USD/BRL","CURRENCY_EXCHANGE_RATE") |> av_extract_fx()
av_get_pf(c("ORCL","IBM"),"ANALYTICS_FIXED_WINDOW") |> av_extract_analytics(separate_vars=TRUE)

## End(Not run)
```

---

av_funhelp   *Extract data from Alpha Vantage retuned data*

Description

Extract data from Alpha Vantage retuned data

Usage

```
av_funhelp(av_fun_grep = "", verbose = TRUE)
```

Arguments

av_fun_grep   A Alpha Vantage function name or portions of one. For a list of parameters,
                visit the Alpha Vantage API documentation.

verbose   (Default: TRUE) Prints the help string

Details

Returns defaults and parameter lists for Alphavantage functions

Value

Help Text and default parameters.

See Also

av_get_pf()

Examples

```
av_funhelp("GLOBAL_QUOTE")
```

---

av_get_pf   *Get financial data from the Alpha Vantage API*

Description

Interface to alphavantage API.

Usage

```
av_get_pf(
  symbol,
  av_fun,
  symbolvarnm = "symbol",
  dfonerror = TRUE,
  melted = "default",
  verbose = FALSE,
  ...
)
```

Arguments

symbol	A character string of an appropriate stock, fund, or currency See parameter "symbol" in [Alpha Vantage API documentation]().
av_fun	A character string matching an appropriate Alpha Vantage "function". See parameter "function" in [Alpha Vantage API documentation]().
symbolvarnm	(default: symbol) Variable name which has the symbol requested. Set to a blank string if not wanted.
dfonerror	(default: TRUE) Return an empty data.table when any error occurs
melted	(default: "default") String specifying when to melt, "default" is chosen by the package, "TRUE|always" always melt, "FALSE|never" never melts
verbose	(default: FALSE) Print debug information helpful for errors. Also copies full url to clipboard.
...	Additional parameters or overrides passed to the Alpha Vantage API. For a list of parameters, visit the [Alpha Vantage API documentation]().

Details

The av_fun **argument replaces the API parameter "function"** because function is a reserved name in R. All other arguments match the Alpha Vantage API parameters.

There is no need to specify the apikey**,** datatype**,** outputsize **or** entitlement **parameters** as arguments to av_get_pf(). Before using, you must set the API key using av_api_key("YOUR_API_KEY"). outputsize defaults to "full" unless overridden with "compact in ...."

Required parameters other than symbol must be passed as named arguments via ....

Optional parameters have defaults which can be obtained by calling [av_funhelp()]() and overridden via ....

There is no need to specify the datatype parameter as an argument to av_get_pf(). The function will return a data.table.

ForEx "FROM/TO" symbol details. FOREX symbols in the av_get_pf() function are supplied in "FROM/TO" format, which are then parsed in the Alpha Vantage API into from_currency and to_currency API parameters. Usage example: av_get_pf("USD/BRL", "FX_DAILY")

Value

Returns a data.table with results dependent on the function called. Mixed data is returned as a melted data.table, possibly with nested data.frames. Time series are returned as data.tables.

See Also

av_api_key(), av_extract_df(), av_extract_fx(), av_grep_opts(),av_funhelp()

Examples

```
## Not run:
av_api_key("YOUR_API_KEY")
av_api_key("YOUR_API_KEY","delayed") # if you have such access

# example code

# ---- 1.0 SINGLE NAME EQUITY SUMMARY INFORMATION AND SEARCH ----

av_get_pf("IBM","OVERVIEW") |> str()

av_get_pf("EWZ","ETF_PROFILE")
av_get_pf("EWZ","ETF_PROFILE") |> av_extract_df("holdings")

av_get_pf("","SYMBOL_SEARCH",keywords="COMMERCE")

# ---- 2.0 MARKET QUOTES  ----

av_get_pf("IBM","GLOBAL_QUOTE")

av_get_pf("USD/BRL","CURRENCY_EXCHANGE_RATE") |> av_extract_fx()

av_get_pf(c("ORCL","IBM","EWZ","ARGT"),"REALTIME_BULK_QUOTES",melt=FALSE)
# Note you need advanced permissioning for REALTIME_BULK_QUOTES

# ---- 3.0 SINGLE NAME HISTORICAL DATA  ----

av_get_pf("IBM","TIME_SERIES_DAILY")

av_get_pf("IBM","TIME_SERIES_INTRADAY")

# ---- 4.0 MARKET PRICING DATA  ----

av_get_pf("","MARKET_STATUS")  |> av_extract_df()

av_get_pf("","TOP_GAINERS_LOSERS") |> av_extract_df("top_losers")
```

```
av_get_pf("","TREASURY_YIELD",maturity='7year')

 # ---- 4.0 SINGLE NAME NON-PRICING DATA  ----

av_get_pf("IBM","DIVIDENDS")

av_get_pf("IBM","EARNINGS")  |> av_extract_df("quarter",melt=TRUE)

av_get_pf("IBM","NEWS_SENTIMENT") |> av_extract_df("feed")

av_get_pf("IBM","EARNINGS_CALL_TRANSCRIPT",quarter="2024Q3")  |> av_extract_df("transcript")
 # Note that quarter is a required parameter, not specifying will throw an error

 # ---- 5.0 SINGLE NAME OPTION PRICING DATA  ----

av_get_pf("IBM","HISTORICAL_OPTIONS") |> av_grep_opts("F,M,put",mindays=2)

# ---- 6.0 TECHNICAL INDICATORS  ----

av_funhelp("SMA")  # Shows parameters and defaults chosen by this package.
av_get_pf("IBM","SMA",time_period=20)

# ---- 7.0 WINDOW ANALYTICS  ----

av_get_pf(c("ORCL","IBM","EWZ","ARGT"),"ANALYTICS_FIXED_WINDOW",verbose=TRUE) |>
            av_extract_analytics(separate_vars=TRUE)

## End(Not run)
```

---

av_grep_opts	*Extract data from Alpha Vantage returned data*

Description

Extract data from Alpha Vantage returned data

Usage

```
av_grep_opts(
  indta,
  grepstring = "F,M,call",
  mindays = 3,
  startdt = Sys.Date(),
  deltarange = c(0.1, 0.55)
)
```

Arguments

`indta`	A data.table as returned by [av_get_pf()](#)
`grepstring`	(default F,M,call) Three item string to select maturities and option types from `indta`. Each item is an abbreviated code for what to select.

- How far out to go: `F` for first contract (e.g. front week), `B` for second/back contract, anything else for all contracts.
- Maturity Schedule: `M` for monthly contracts, `Q` for quarterly contract, anythign else for weekly contracts.
- Option Type: `call`, `put`, or `all`

`mindays`	(default 3). Minimum number of days to expiration to be passed through from `startdt`
`startdt`	(default Sys.Date()). Date from which expirations will be considered.
`deltarange`	(default `c(0.1,0.55)`) Two number list with minimum and maximum absolute valued deltas to pass through.

Details

[av_get_pf()](#) returns a large list of options. This function helps to narrow down the list by maturity and moneyness.

Value

A reduced set of options obtained from [av_get_pf()](#) using Alphavantage `HISTORICAL_OPTIONS` function.

See Also

[av_get_pf()](#)

Examples

```
## Not run:
av_get_pf("IBM","HISTORICAL_OPTIONS") |> av_grep_opts("F,M,put",mindays=2)

## End(Not run)
```

---

av_make_funcmap   *Extract data from Alpha Vantage retuned data*

Description

Extract data from Alpha Vantage retuned data

Usage

```
av_make_funcmap()
```

Details

Creates a data.table with API signatures and default values for Alphavantage API calls

Value

function map dat.table, also written to data directory

See Also

[av_get_pf()](av_get_pf())

Examples

```
## Not run:
av_make_funcmap()

## End(Not run)
```

Index