

UsageExample

Project Usage Example

Download Repo

```
rm(list = ls())
#cred <- git2r::cred_user_pass(rstudioapi::askForPassword("username"), rstudioapi::askForPassword("Password"))
#devtools::install_git("https://git-inf.technikum-wien.at/finance/finance2021/pkgs/pittl_hafner_luo.git")

#alternative:
devtools::install_git("https://github.com/anewruser/finance.git")

## Downloading git repo https://github.com/anewruser/finance.git

## curl (4.3.1 -> 4.3.2 ) [CRAN]
## rlang (0.4.10 -> 0.4.11) [CRAN]
## dplyr (1.0.6 -> 1.0.7 ) [CRAN]

## Installing 3 packages: curl, rlang, dplyr

## Installing packages into 'C:/Users/Benedikt/R/win-library/4.0'
## (as 'lib' is unspecified)

##
## There is a binary version available but the source version is later:
## binary source needs_compilation
## curl 4.3.1 4.3.2 TRUE
##
## package 'rlang' successfully unpacked and MD5 sums checked

## Warning: cannot remove prior installation of package 'rlang'

## Warning in file.copy(savedcopy, lib, recursive = TRUE): Problem C:
## \Users\Benedikt\R\win-library\4.0\00LOCK\rlang\libs\x64\rlang.dll nach C:
## \Users\Benedikt\R\win-library\4.0\rlang\libs\x64\rlang.dll zu kopieren:
## Permission denied

## Warning: restored 'rlang'

## package 'dplyr' successfully unpacked and MD5 sums checked

## Warning: cannot remove prior installation of package 'dplyr'
```

```

## Warning in file.copy(savedcopy, lib, recursive = TRUE): Problem C:
## \Users\Benedikt\R\win-library\4.0\00LOCK\dplyr\libs\x64\dplyr.dll nach C:
## \Users\Benedikt\R\win-library\4.0\dplyr\libs\x64\dplyr.dll zu kopieren:
## Permission denied

## Warning: restored 'dplyr'

##
## The downloaded binary packages are in
## C:\Users\Benedikt\AppData\Local\Temp\Rtmp4sBF6p\downloaded_packages

## installing the source package 'curl'

## Warning in i.p(...): installation of package 'curl' had non-zero exit status

##      checking for file 'C:\Users\Benedikt\AppData\Local\Temp\Rtmp4sBF6p\file19c86d295d06\DESCRIPTION'
##      - preparing 'pittlHafnerLuo':
##      checking DESCRIPTION meta-information ...      checking DESCRIPTION meta-information ... v check
##      - checking for LF line-endings in source and make files and shell scripts
##      - checking for empty or unneeded directories
##      - building 'pittlHafnerLuo_0.0.2.0.tar.gz'
##
##

## Installing package into 'C:/Users/Benedikt/R/win-library/4.0'
## (as 'lib' is unspecified)

#devtools::install_git("https://git-inf.technikum-wien.at/finance/finance2021/pkgs/catsar.git", credent

library(tidyquant)

## Warning: package 'tidyquant' was built under R version 4.0.5

## Loading required package: lubridate

## Warning: package 'lubridate' was built under R version 4.0.5

##
## Attaching package: 'lubridate'

## The following objects are masked from 'package:base':
##
##      date, intersect, setdiff, union

## Loading required package: PerformanceAnalytics

## Warning: package 'PerformanceAnalytics' was built under R version 4.0.5

## Loading required package: xts

```

```
## Warning: package 'xts' was built under R version 4.0.5

## Loading required package: zoo

## Warning: package 'zoo' was built under R version 4.0.4

##
## Attaching package: 'zoo'

## The following objects are masked from 'package:base':
##
##      as.Date, as.Date.numeric

##
## Attaching package: 'PerformanceAnalytics'

## The following object is masked from 'package:graphics':
##
##      legend

## Loading required package: quantmod

## Warning: package 'quantmod' was built under R version 4.0.5

## Loading required package: TTR

## Warning: package 'TTR' was built under R version 4.0.5

## Registered S3 method overwritten by 'quantmod':
##      method          from
##      as.zoo.data.frame zoo

## == Need to Learn tidyquant? =====
## Business Science offers a 1-hour course - Learning Lab #9: Performance Analysis & Portfolio Optimization
## </> Learn more at: https://university.business-science.io/p/learning-labs-pro </>
```

```
library(pittlHafnerLuo)
```

Help

```
?pittlHafnerLuo::get_index
```

```
## starting httpd help server ... done
```

Important Notes:

We implemented two sources:

- Yahoo: here we implemented typical web crawling. In addition we used `stockmarketmba.com` to get the identifiers (such as `sedol`) if existing. Hence, this source is very slow
- FCSAPI: here we used a typical API. Please, do not overuse it as there is a monthly as well as hourly limit!!

Usage Examples

FCS

Unfortunately, the ATX is not supported by that API!

```
dow<-pittlHafnerLuo::get_index("Dow Jones","fcs","united-states")
```

```
## ATTENTION: you are using fcsapi with an access key. If you use that method too often, the the contin
```

```
#attention: symbols of the fcs api might not 100% match with tidyquant symbols!
dow %>% tidyquant::tq_get(get="stock.prices",from="2021-06-01")
```

```
## Warning: x = 'UTX', get = 'stock.prices': Error in getSymbols.yahoo(Symbols = "UTX", env = <environm
## Argument "conn" fehlt (ohne Standardwert)
## Removing UTX.
```

```
## # A tibble: 551 x 15
##   symbol company identifier sedol weight sector      shares_held local_currency
##   <chr>   <chr>   <lgl>      <lgl> <lgl> <chr>      <lgl>      <chr>
## 1 BA      Boeing   NA         NA    NA    Capital Go~ NA        USD
## 2 BA      Boeing   NA         NA    NA    Capital Go~ NA        USD
## 3 BA      Boeing   NA         NA    NA    Capital Go~ NA        USD
## 4 BA      Boeing   NA         NA    NA    Capital Go~ NA        USD
## 5 BA      Boeing   NA         NA    NA    Capital Go~ NA        USD
## 6 BA      Boeing   NA         NA    NA    Capital Go~ NA        USD
## 7 BA      Boeing   NA         NA    NA    Capital Go~ NA        USD
## 8 BA      Boeing   NA         NA    NA    Capital Go~ NA        USD
## 9 BA      Boeing   NA         NA    NA    Capital Go~ NA        USD
## 10 BA     Boeing   NA         NA    NA    Capital Go~ NA        USD
## # ... with 541 more rows, and 7 more variables: date <date>, open <dbl>,
## #   high <dbl>, low <dbl>, close <dbl>, volume <dbl>, adjusted <dbl>
```

```
Sys.sleep(60)
pittlHafnerLuo::get_index("DAX","fcs","germany")
```

```
## ATTENTION: you are using fcsapi with an access key. If you use that method too often, the the contin
```

```
## # A tibble: 30 x 8
##   symbol company   identifier sedol weight sector  shares_held local_currency
##   <chr>  <chr>      <lgl>      <lgl> <lgl> <chr>    <lgl>      <chr>
## 1 BASFN  BASF        NA          NA    NA    Basic M~ NA          EUR
## 2 BAYGN  Bayer        NA          NA    NA    Healthc~ NA          EUR
## 3 ALVG   Allianz     NA          NA    NA    Financi~ NA          EUR
## 4 ADSGN  Adidas       NA          NA    NA    Consume~ NA          EUR
## 5 LHAG   Lufthansa   NA          NA    NA    Transpo~ NA          EUR
## 6 SIEGn  Siemens AG  NA          NA    NA    Capital~ NA          EUR
## 7 DBKGn  Deutsche ~ NA          NA    NA    Financi~ NA          EUR
## 8 CONG   Continent~ NA          NA    NA    Consume~ NA          EUR
## 9 DPWGn  Deutsche ~ NA          NA    NA    Services NA          EUR
## 10 DAIGn Daimler     NA          NA    NA    Consume~ NA          EUR
## # ... with 20 more rows
```

```
Sys.sleep(60)
pittlHafnerLuo::get_index("JASDAQ", "fcs", "japan")
```

ATTENTION: you are using fcsapi with an access key. If you use that method too often, the the contin

```
## # A tibble: 730 x 8
##   symbol company   identifier sedol weight sector  shares_held local_currency
##   <chr>  <chr>      <lgl>      <lgl> <lgl> <chr>    <lgl>      <chr>
## 1 3189  ANAP        NA          NA    NA    Services NA          JPY
## 2 7177  GMO Click~ NA          NA    NA    Financi~ NA          JPY
## 3 3536  Axas Hold~ NA          NA    NA    Services NA          JPY
## 4 3537  Shoei Yak~ NA          NA    NA    Basic M~ NA          JPY
## 5 3933  CHleru Co  NA          NA    NA    Technol~ NA          JPY
## 6 7185  Hirose Tu~ NA          NA    NA    Financi~ NA          JPY
## 7 1380  Akikawa F~ NA          NA    NA    Consume~ NA          JPY
## 8 1381  Axyz       NA          NA    NA    Consume~ NA          JPY
## 9 1382  Hob        NA          NA    NA    Consume~ NA          JPY
## 10 1383  Berg Earth NA          NA    NA    Consume~ NA          JPY
## # ... with 720 more rows
```

Yahoo Finance

Be careful: too many connections will lead to a 503 exception: then simply re-run the failed chunk!

```
Sys.sleep(5)
atx<-pittlHafnerLuo::get_index("ATX") #no identifier, sedol are available
```

```
##
## Getting data from https://finance.yahoo.com/quote/%5EATX/components?p=%5EATX
```

```
atx %>% tidyquant::tq_get(get="stock.prices", from="2021-06-01")
```

```
## # A tibble: 380 x 15
##   symbol company   identifier sedol weight sector  shares_held local_currency
##   <chr>  <chr>      <lgl>      <lgl> <dbl> <chr>    <lgl>      <chr>
## 1 CAI.VI CA Immobil~ NA          NA    0.0153 Real E~ NA          EUR
```

```
## 2 CAI.VI CA Immobil~ NA      0.0153 Real E~ NA      EUR
## 3 CAI.VI CA Immobil~ NA      0.0153 Real E~ NA      EUR
## 4 CAI.VI CA Immobil~ NA      0.0153 Real E~ NA      EUR
## 5 CAI.VI CA Immobil~ NA      0.0153 Real E~ NA      EUR
## 6 CAI.VI CA Immobil~ NA      0.0153 Real E~ NA      EUR
## 7 CAI.VI CA Immobil~ NA      0.0153 Real E~ NA      EUR
## 8 CAI.VI CA Immobil~ NA      0.0153 Real E~ NA      EUR
## 9 CAI.VI CA Immobil~ NA      0.0153 Real E~ NA      EUR
## 10 CAI.VI CA Immobil~ NA      0.0153 Real E~ NA      EUR
## # ... with 370 more rows, and 7 more variables: date <date>, open <dbl>,
## #   high <dbl>, low <dbl>, close <dbl>, volume <dbl>, adjusted <dbl>
```

```
Sys.sleep(10)
pittlHafnerLuo::get_index("GDAXI") #no identifier, sedol are available
```

```
##
## Getting data from https://finance.yahoo.com/quote/%5EGDAXI/components?p=%5EGDAXI
```

```
## # A tibble: 30 x 8
##   symbol company identifier sedol weight sector shares_held local_currency
##   <chr>   <chr>      <lgl>    <lgl>    <dbl> <chr>    <lgl>      <chr>
## 1 HEN3.DE Henkel A~ NA      NA      0.00551 Consum~ NA      EUR
## 2 DB1.DE  Deutsche~ NA      NA      0.00628 Financ~ NA      EUR
## 3 ENR.DE  Siemens ~ NA      NA      0.0296 Utilit~ NA      EUR
## 4 DWNI.DE Deutsche~ NA      NA      0.0252 Real E~ NA      EUR
## 5 DPW.DE  Deutsche~ NA      NA      0.0397 Indust~ NA      EUR
## 6 DTE.DE  Deutsche~ NA      NA      0.125  Commun~ NA      EUR
## 7 FME.DE  Freseniu~ NA      NA      0.00922 Health~ NA      EUR
## 8 ADS.DE  adidas AG NA      NA      0.00962 Consum~ NA      EUR
## 9 ALV.DE  Allianz ~ NA      NA      0.0125 Financ~ NA      EUR
## 10 BAYN.DE Bayer Ak~ NA      NA      0.0324 Health~ NA      EUR
## # ... with 20 more rows
```

For US shares, we also have identifiers and sedol!

```
Sys.sleep(15)
pittlHafnerLuo::get_index("IXIC")
```

```
##
## Getting data from https://finance.yahoo.com/quote/%5EIXIC/components?p=%5EIXIC
```

```
## # A tibble: 30 x 8
##   symbol company identifier sedol weight sector shares_held local_currency
##   <chr>   <chr>      <chr>    <chr>    <dbl> <chr>    <lgl>      <chr>
## 1 FEYE  FireEye, ~ BD4R405  31816~ 1.14e-1 Techn~ NA      USD
## 2 SCOA  Scion Tec~ <NA>    G3106~ 3.09e-3 Finan~ NA      USD
## 3 NVCR  NovoCure ~ BYSS4X4  G6674~ 2.85e-2 Healt~ NA      USD
## 4 NEBC  Nebula Ca~ <NA>    <NA>    8.54e-3 Finan~ NA      USD
## 5 HLAH  Hamilton ~ <NA>    <NA>    1.90e-2 Finan~ NA      USD
## 6 SCOB  ScION Tec~ <NA>    <NA>    1.80e-3 Finan~ NA      USD
## 7 NVEC  NVE Corpo~ 2072126  62944~ 1.64e-3 Techn~ NA      USD
## 8 CVCO  Cavco Ind~ 2787022  14956~ 7.18e-4 Consu~ NA      USD
```

```
## 9 SDH Global In~ <NA> <NA> 2.00e-3 Indus~ NA USD
## 10 BSBK Bogota Fi~ BKV29H4 09723~ 3.38e-4 Finan~ NA USD
## # ... with 20 more rows
```

```
Sys.sleep(5)
pittlHafnerLuo::get_index("OMX")
```

```
##
## Getting data from https://finance.yahoo.com/quote/%5EOMX/components?p=%5EOMX
```

```
## # A tibble: 30 x 8
##   symbol company identifier sedol weight sector shares_held local_currency
##   <chr> <chr> <lgl> <lgl> <dbl> <chr> <lgl> <chr>
## 1 ATCO-A~ Atlas Co~ NA NA 0.0111 Indust~ NA SEK
## 2 GETI-B~ Getinge ~ NA NA 0.0202 Health~ NA SEK
## 3 ALFA.ST Alfa Lav~ NA NA 0.0134 Indust~ NA SEK
## 4 SCA-B.~ Svenska ~ NA NA 0.0170 Basic ~ NA SEK
## 5 INVE-B~ Investor~ NA NA 0.0371 Financ~ NA SEK
## 6 SKF-B.~ AB SKF (~ NA NA 0.0163 Indust~ NA SEK
## 7 SWED-A~ Swedbank~ NA NA 0.0463 Financ~ NA SEK
## 8 ATCO-B~ Atlas Co~ NA NA 0.00313 Indust~ NA SEK
## 9 TELIA.~ Telia Co~ NA NA 0.113 Commun~ NA SEK
## 10 NDA-SE~ Nordea B~ NA NA 0.108 Financ~ NA SEK
## # ... with 20 more rows
```

Also for that members, we get identifiers!

```
Sys.sleep(15)
pittlHafnerLuo::get_index("IXIC") #nasdaq
```

```
##
## Getting data from https://finance.yahoo.com/quote/%5EIXIC/components?p=%5EIXIC
```

```
## # A tibble: 30 x 8
##   symbol company identifier sedol weight sector shares_held local_currency
##   <chr> <chr> <chr> <chr> <dbl> <chr> <lgl> <chr>
## 1 FEYE FireEye, ~ BD4R405 31816~ 1.16e-1 Techn~ NA USD
## 2 NVCR NovoCure ~ BYSS4X4 G6674~ 2.85e-2 Healt~ NA USD
## 3 SCOA Scion Tec~ <NA> G3106~ 3.08e-3 Finan~ NA USD
## 4 NEBC Nebula Ca~ <NA> <NA> 8.51e-3 Finan~ NA USD
## 5 HLAH Hamilton ~ <NA> <NA> 1.89e-2 Finan~ NA USD
## 6 SCOB ScION Tec~ <NA> <NA> 1.79e-3 Finan~ NA USD
## 7 BBI Brickell ~ BKT6XS7 10802~ 8.83e-2 Healt~ NA USD
## 8 NVEC NVE Corpo~ 2072126 62944~ 1.63e-3 Techn~ NA USD
## 9 CVCO Cavco Ind~ 2787022 14956~ 7.14e-4 Consu~ NA USD
## 10 SDH Global In~ <NA> <NA> 1.99e-3 Indus~ NA USD
## # ... with 20 more rows
```