Package 'tcsinvest'

October 14, 2022

Type Package

Title R API for Tinkoff Investments

Version 0.1.1

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Imports httr, data.table, jsonlite, websocket

Description R functions for Tinkoff Investments API <https://tinkoffcreditsystems.github.io/invest-openapi/>. Using this package, analysts and traders can interact with account and market data from within R. Clients for both REST and Streaming protocols implemented.

License GPL-3

Encoding UTF-8

RoxygenNote 7.1.1

URL <https://github.com/arbuzovv/tcsinvest>,tcsinvest.ru

BugReports <https://github.com/arbuzovv/tcsinvest/issues>

Suggests rmarkdown, knitr

VignetteBuilder knitr

NeedsCompilation no

Repository CRAN

Date/Publication 2021-08-17 07:20:02 UTC

R topics documented:

---

cancelOrder   *cancelOrder*

Description

    cancelOrder

Usage

```
cancelOrder(token = "", live = FALSE, orderId = "")
```

Arguments

token	token from tinkoff
live	live trading - TRUE or sandbox (paper) trading - FALSE
orderId	id of order from getOrders

Details

    As described by the official Tinkoff Investments documentation

Value

    returns a list object containing the information about state of operation.

Note

Not for the faint of heart. All profits and losses related are yours and yours alone. If you don't like it, write it yourself.

See Also

getOrders

Examples

```
paper_token = 'your_sandbox_token_from_tcs_account'
cancelOrder(paper_token,'your_order_id')

live_token = 'your_live_token_from_tcs_account'
# remember that this command will close your order in live account !
cancelOrder(live_token,TRUE,'your_order_id')
```

---

getAccounts   *Download available accounts*

Description

Makes a request to the server, and returns an data.table object with information about available accounts if successful.

Usage

```
getAccounts(token = "", live = FALSE, verbose = FALSE)
```

Arguments

token	token from Tinkoff account
live	live trading - TRUE or sandbox (paper) trading - FALSE (default)
verbose	display status of retrieval (default FALSE)

Details

As described by the official Tinkoff Investments documentation

Value

returns an data.table object containing the requested data with available accounts.

Note

Not for the faint of heart. All profits and losses related are yours and yours alone. If you don't like it, write it yourself.

Author(s)

Vyacheslav Arbuzov

See Also

[getBalance](#) [getPortfolio](#)

Examples

```
live = FALSE
token = 'your_sandbox_token_from_tcs_account'
getAccounts(token,live)
```

---

getBalance   *Download balance of account*

Description

Makes a request to the server, and returns an data.table object with information about available balance if successful.

Usage

```
getBalance(token = "", live = FALSE, verbose = FALSE)
```

Arguments

token	token from Tinkoff account
live	live trading - TRUE or sandbox (paper) trading - FALSE (default)
verbose	display status of retrieval (default FALSE)

Details

As described by the official Tinkoff Investments documentation

Value

returns an data.table object containing the information about balance of account.

Note

Not for the faint of heart. All profits and losses related are yours and yours alone. If you don't like it, write it yourself.

Author(s)

Vyacheslav Arbuzov

See Also

getAccounts getPortfolio

Examples

```
live = FALSE
token = 'your_sandbox_token_from_tcs_account'
getBalance(token,live)
```

---

getBonds   *Download Bond data*

Description

Makes a request to the server, and returns an data.table object with information about available bonds if successful.

Usage

```
getBonds(token = "", live = FALSE, verbose = FALSE)
```

Arguments

token	token from Tinkoff account
live	live trading - TRUE or sandbox (paper) trading - FALSE (default)
verbose	display status of retrieval (default FALSE)

Details

As described by the official Tinkoff Investments documentation

Value

returns an data.table object containing the list of available bonds.

Note

Not for the faint of heart. All profits and losses related are yours and yours alone. If you don't like it, write it yourself.

Author(s)

Vyacheslav Arbuzov

See Also

getETFs getCurrencies getStocks

Examples

```
live = FALSE
token = 'your_sandbox_token_from_tcs_account'
getBonds(token,live)
```

---

getCurrencies   *Download Currencies data*

Description

Makes a request to the server, and returns an data.table object with information about available Currencies if successful.

Usage

```
getCurrencies(token = "", live = FALSE, verbose = FALSE)
```

Arguments

token	token from Tinkoff account
live	live trading - TRUE or sandbox (paper) trading - FALSE (default)
verbose	display status of retrieval (default FALSE)

Details

As described by the official Tinkoff Investments documentation

Value

returns an data.table object containing the list of available currencies.

Note

Not for the faint of heart. All profits and losses related are yours and yours alone. If you don't like it, write it yourself.

Author(s)

Vyacheslav Arbuzov

See Also

[getETFs](#) [getBonds](#) [getStocks](#)

Examples

```
live = FALSE
token = 'your_sandbox_token_from_tcs_account'
getCurrencies(token,live)
```

getETFs   *Download ETF data*

Description

Makes a request to the server, and returns an data.table object with information about available ETFs if successful.

Usage

```
getETFs(token = "", live = FALSE, verbose = FALSE)
```

Arguments

token   token from Tinkoff account

live   live trading - TRUE or sandbox (paper) trading - FALSE (default)

verbose   display status of retrieval (default FALSE)

Details

As described by the official Tinkoff Investments documentation

Value

returns an data.table object containing the list of available ETFs.

Note

Not for the faint of heart. All profits and losses related are yours and yours alone. If you don't like it, write it yourself.

Author(s)

Vyacheslav Arbuzov

See Also

[getCurrencies](#) [getBonds](#) [getStocks](#)

Examples

```
live = FALSE
token = 'your_sandbox_token_from_tcs_account'
getETFs(token,live)
```

---

getHistoricalData   *Download Historical Bar Data*

Description

Makes a request to the server, and returns an data.table object with information about prices of instrument if successful.

Usage

```
getHistoricalData(
  token = "",
  live = FALSE,
  figi = "",
  from = Sys.Date() - 1,
  to = Sys.Date(),
  interval = "hour",
  time_transform = TRUE,
  verbose = FALSE
)
```

Arguments

token	token from Tinkoff account
live	live trading - TRUE or sandbox (paper) trading - FALSE (default)
figi	internal tinkoff code for instrument
from	from what date download history
to	to what date download history
interval	timeframe of bars (availible "1min","2min","3min","5min","10min","15min","30min","hour","2hour","4h
time_transform	trasform time from string to POSIXct
verbose	display status of retrieval (default FALSE)

Details

As described by the official Tinkoff Investments documentation

Value

returns an data.table object containing the requested data with historical bar data (OHLCV).

Note

Not for the faint of heart. All profits and losses related are yours and yours alone. If you don't like it, write it yourself.

Author(s)

Vyacheslav Arbuzov

See Also

getOrderBook

Examples

```
live = FALSE
token = 'your_sandbox_token_from_tcs_account'
getHistoricalData(token,live,figi = 'BBG005HLTYH9')
```

---

getOperations   *Download all operations in account*

Description

Makes a request to the server, and returns a list object with information about all operation related with your account if successful.

Usage

```
getOperations(
  token = "",
  live = FALSE,
  from = Sys.Date() - 5,
  to = Sys.Date(),
  verbose = FALSE
)
```

Arguments

token	token from Tinkoff account
live	live trading - TRUE or sandbox (paper) trading - FALSE (default)
from	from what date download history
to	to what date download history
verbose	display status of retrieval (default FALSE)

Details

As described by the official Tinkoff Investments documentation

Value

returns an data.table object containing the information about all operations in account.

Note

Not for the faint of heart. All profits and losses related are yours and yours alone. If you don't like it, write it yourself.

Author(s)

Vyacheslav Arbuzov

See Also

getOrders getTrades

Examples

```
live = FALSE
token = 'your_sandbox_token_from_tcs_account'
getOperations(token,live)
```

---

getOrderBook   *Download current OrderBook snapshot*

Description

Makes a request to the server, and returns an data.table object with information about orderbook for selected instrument if successful.

Usage

```
getOrderBook(
  token = "",
  live = FALSE,
  figi = "",
  depth = NULL,
  verbose = FALSE
)
```

Arguments

token	token from Tinkoff account
live	live trading - TRUE or sandbox (paper) trading - FALSE (default)
figi	internal tinkoff code for instrument
depth	depth of orderbook, number of bids and asks (1 <= depth <= 20)
verbose	display status of retrieval (default FALSE)

Details

As described by the official Tinkoff Investments documentation

Value

returns an data.table object containing the information about current OrderBook.

Note

Not for the faint of heart. All profits and losses related are yours and yours alone. If you don't like it, write it yourself.

Author(s)

Vyacheslav Arbuzov

See Also

getHistoricalData

Examples

```
live = FALSE
token = 'your_sandbox_token_from_tcs_account'
getOrderBook(token,live,figi = 'BBG005HLTYH9',depth = 5)
```

---

getOrders	*Download all orders in account*

Description

Makes a request to the server, and returns a data.table object with information about all live orders related with your account if successful.

Usage

```
getOrders(
  token = "",
  live = FALSE,
  only_live_orders = TRUE,
  raw_orders = FALSE,
  from = Sys.Date() - 5,
  to = Sys.Date(),
  time_transform = TRUE
)
```

Arguments

`token`	token from Tinkoff account
`live`	live trading - TRUE or sandbox (paper) trading - FALSE (default)
`only_live_orders`	
	select only live order or use history? (default TRUE)
`raw_orders`	get raw orders from server or use transformation? (default FALSE)
`from`	depth of trading history (from)
`to`	depth of trading history (to)
`time_transform`	trasform time from string to POSIXct

Details

As described by the official Tinkoff Investments documentation

Value

returns an data.table object containing the requested data with orders of current account.

Note

Not for the faint of heart. All profits and losses related are yours and yours alone. If you don't like it, write it yourself.

Author(s)

Vyacheslav Arbuzov

See Also

[getTrades](#) [cancelOrder](#)

Examples

```
live = FALSE
token = 'your_sandbox_token_from_tcs_account'
getOrders(token,live)
```

---

getPortfolio   *Download information about current portfolio*

Description

Makes a request to the server, and returns an data.table object with information about portfolio if successful.

Usage

```
getPortfolio(token = "", live = FALSE, verbose = FALSE)
```

Arguments

token   token from Tinkoff account

live   live trading - TRUE or sandbox (paper) trading - FALSE (default)

verbose   display status of retrieval (default FALSE)

Details

As described by the official Tinkoff Investments documentation

Value

returns an data.table object containing the information about current portfolio state.

Note

Not for the faint of heart. All profits and losses related are yours and yours alone. If you don't like it, write it yourself.

Author(s)

Vyacheslav Arbuzov

See Also

getTrades getOrders

Examples

```
live = FALSE
token = 'your_sandbox_token_from_tcs_account'
getPortfolio(token,live)
```

---

getQuotes   *Download current quotes for instrument*

Description

Makes a request to the server, and returns an data.table object with information about orderbook for selected instrument if successful.

Usage

```
getQuotes(token = "", live = FALSE, figi = "", verbose = FALSE)
```

Arguments

token   token from Tinkoff account

live   live trading - TRUE or sandbox (paper) trading - FALSE (default)

figi   internal tinkoff code for instrument

verbose   display status of retrieval (default FALSE)

Details

Information gets from orderbook function. Also gets list of availible status of instrument: break_in_trading, normal_trading, not_available_for_trading, closing_auction, closing_period, discrete_auction, opening_period, trading_at_closing_auction_price

Value

returns an data.table object containing the requested data with current quotes for instrument.

Note

Not for the faint of heart. All profits and losses related are yours and yours alone. If you don't like it, write it yourself.

Author(s)

Vyacheslav Arbuzov

Examples

```
live = FALSE
token = 'your_sandbox_token_from_tcs_account'
getQuotes(token,live,figi = 'BBG005HLTYH9')
```

---

getStocks *Download stocks data*

Description

Makes a request to the server, and returns an data.table object with information about available stocks if successful.

Usage

```
getStocks(token = "", live = FALSE, verbose = FALSE)
```

Arguments

token   token from Tinkoff account

live   live trading - TRUE or sandbox (paper) trading - FALSE (default)

verbose   display status of retrieval (default FALSE)

Details

As described by the official Tinkoff Investments documentation

Value

returns an data.table object containing the list of available stocks.

Note

Not for the faint of heart. All profits and losses related are yours and yours alone. If you don't like it, write it yourself.

Author(s)

Vyacheslav Arbuzov

See Also

[getCurrencies](#) [getBonds](#) [getETFs](#)

Examples

```
live = FALSE
token = 'your_sandbox_token_from_tcs_account'
getStocks(token,live)
```

---

getSymbolInfo	*Information for instrument. by figi*

Description

Makes a request to the server, and returns an data.table object with information about instrument if successful.

Usage

```
getSymbolInfo(token = "", live = FALSE, figi = "", verbose = FALSE)
```

Arguments

token	token from Tinkoff account
live	live trading - TRUE or sandbox (paper) trading - FALSE (default)
figi	internal tinkoff code for instrument
verbose	display status of retrieval (default FALSE)

Details

As described by the official Tinkoff Investments documentation

Value

returns an data.table object containing the information about instrument.

Note

Not for the faint of heart. All profits and losses related are yours and yours alone. If you don't like it, write it yourself.

Author(s)

Vyacheslav Arbuzov

See Also

[getTickerInfo](#)

Examples

```
live = FALSE
token = 'your_sandbox_token_from_tcs_account'
getSymbolInfo(token,live,figi = 'BBG005HLTYH9')
```

---

getTickerInfo *Information for instrument. by ticker*

Description

Makes a request to the server, and returns an data.table object with information about instrument if successful.

Usage

```
getTickerInfo(token = "", live = FALSE, ticker = "", verbose = FALSE)
```

Arguments

token	token from Tinkoff account
live	live trading - TRUE or sandbox (paper) trading - FALSE (default)
ticker	internal tinkoff code for instrument
verbose	display status of retrieval (default FALSE)

Details

As described by the official Tinkoff Investments documentation

Value

returns an data.table object containing the information about instrument.

Note

Not for the faint of heart. All profits and losses related are yours and yours alone. If you don't like it, write it yourself.

Author(s)

Vyacheslav Arbuzov

See Also

[getSymbolInfo](#)

Examples

```
live = FALSE
token = 'your_sandbox_token_from_tcs_account'
getTickerInfo(token,live,'SBER')
```

---

getTrades   *Download trades of current account*

Description

Makes a request to the server, and returns an data.table object with information about account trades if successful.

Usage

```
getTrades(
  token = "",
  live = FALSE,
  from = Sys.Date() - 5,
  to = Sys.Date(),
  symbol_info = FALSE,
  time_transform = TRUE,
  verbose = FALSE
)
```

Arguments

token	token from Tinkoff account
live	live trading - TRUE or sandbox (paper) trading - FALSE (default)
from	from what date download trades
to	to what date download trades
symbol_info	download full information about instruments of trades (4 additional requests)
time_transform	trasform time from string to POSIXct
verbose	display status of retrieval (default FALSE)

Details

parsing this data from getOperaions function

Value

returns an data.table object containing the requested data with trades of current account.

Note

Not for the faint of heart. All profits and losses related are yours and yours alone. If you don't like it, write it yourself.

Author(s)

Vyacheslav Arbuzov

See Also

getOrders

Examples

```
live = FALSE
token = 'your_sandbox_token_from_tcs_account'
getTrades(token,live)
```

---

getUniverse   *Download universe data (stocks,bonds,etfs,currencies)*

Description

Makes 4 request to the server, and returns an data.table object with information about available instruments in Tinkoff

Usage

```
getUniverse(token = "", live = FALSE)
```

Arguments

token   token from Tinkoff account

live   live trading - TRUE or sandbox (paper) trading - FALSE (default)

Details

this function for not from official list of functions.

Value

returns an data.table object containing the list of available stocks,bonds,etfs,currencies.

Note

Not for the faint of heart. All profits and losses related are yours and yours alone. If you don't like it, write it yourself.

Author(s)

Vyacheslav Arbuzov

See Also

getCurrencies getBonds getETFs getStocks

Examples

```
live = FALSE
token = 'your_sandbox_token_from_tcs_account'
getUniverse(token,live)
```

---

limitOrder   *Place limit order*

Description

this function will place your order in to account.

Usage

```
limitOrder(
  token = "",
  live = FALSE,
  figi = "",
  direction = NULL,
  lots = NULL,
  price = NULL
)
```

Arguments

token	token from Tinkoff account
live	live trading - TRUE or sandbox (paper) trading - FALSE (default)
figi	internal tinkoff code for instrument
direction	"Buy" or "Sell"
lots	number of lots to buy
price	price of limit order

Details

As described by the official Tinkoff Investments documentation. If you want live trading, use sandbox=FALSE with live token

Value

returns a list object containing the information about state of operation.

Note

Not for the faint of heart. All profits and losses related are yours and yours alone. If you don't like it, write it yourself.

Author(s)

Vyacheslav Arbuzov

See Also

marketOrder

Examples

```
paper_token = 'your_sandbox_token_from_tcs_account'
limitOrder(paper_token,figi='BBG005HLTYH9',direction='Buy',lots=1,price=100)

live_token = 'your_live_token_from_tcs_account'
# remember that this command will place limit order in your live account !
limitOrder(live_token,live=TRUE,figi='BBG005HLTYH9',direction='Buy',lots=1,price=100)
```

---

marketOrder	*Place market order*

Description

this function will place your order in to account.

Usage

```
marketOrder(token = "", live = FALSE, figi = "", direction = NULL, lots = NULL)
```

Arguments

token	token from Tinkoff account
live	live trading - TRUE or sandbox (paper) trading - FALSE (default)
figi	internal tinkoff code for instrument
direction	"Buy" or "Sell"
lots	number of lots to buy

Details

As described by the official Tinkoff Investments documentation. If you want live trading, use sandbox=FALSE with live token

Value

returns a list object containing the information about state of operation.

Note

Not for the faint of heart. All profits and losses related are yours and yours alone. If you don't like it, write it yourself.

Author(s)

Vyacheslav Arbuzov

See Also

limitOrder

Examples

```
paper_token = 'your_sandbox_token_from_tcs_account'
marketOrder(paper_token,figi='BBG005HLTYH9',direction='Buy',lots=1)

live_token = 'your_live_token_from_tcs_account'
# remember that this command will place limit order in your live account !
marketOrder(live_token,live=TRUE,figi='BBG005HLTYH9',direction='Buy',lots=1)
```

---

sandboxBalance   *Working with sandbox. Set balance*

Description

Set balance for sandbox account

Usage

```
sandboxBalance(token = "", balance = NULL, currency = "RUB")
```

Arguments

token   token from Tinkoff account

balance   balance of money in sandbox account

currency   currency of sandbox account. "USD","EUR" or "RUB"

Details

If you need to create few money position, use this function for each position

Value

returns a list object containing the information about state of operation.

Note

Not for the faint of heart. All profits and losses related are yours and yours alone. If you don't like it, write it yourself.

Author(s)

Vyacheslav Arbuzov

See Also

sandboxPositions

Examples

```
token = 'your_token_from_tcs_account'
sandboxBalance(token,balance = 10000,currency = 'USD')
```

---

sandboxDeleteAccount   *Working with sandbox. Delete account*

Description

Delete sandbox account

Usage

```
sandboxDeleteAccount(token = "")
```

Arguments

token   token from Tinkoff account (only sandbox token)

Details

If you need to create few money position, use this function for each position

Value

returns a list object containing the information about state of operation.

Note

Not for the faint of heart. All profits and losses related are yours and yours alone. If you don't like it, write it yourself.

Author(s)

Vyacheslav Arbuzov

See Also

sandboxRegister

Examples

```
token = 'your_token_from_tcs_account'
sandboxDeleteAccount(token)
```

---

sandboxDeletePositions

Working with sandbox. Delete positions

Description

Delete sandbox positions (all positions: stocks, etfs,bonds and money)

Usage

```
sandboxDeletePositions(token = "")
```

Arguments

token   token from Tinkoff account (only sandbox token)

Details

If you need to create few money position, use this function for each position

Value

returns a list object containing the information about state of operation.

Note

Not for the faint of heart. All profits and losses related are yours and yours alone. If you don't like it, write it yourself.

Author(s)

Vyacheslav Arbuzov

See Also

sandboxPositions

Examples

```
token = 'your_token_from_tcs_account'
sandboxDeletePositions(token)
```

---

sandboxPositions   *Working with sandbox. Set Positions*

Description

Set positions for sandbox account

Usage

```
sandboxPositions(token = "", balance = NULL, figi = "")
```

Arguments

token	token from Tinkoff account
balance	balance of figi instrument in sandbox account
figi	internal tinkoff code for instrument

Details

If you need to create few money position, use this function for each position

Value

returns a list object containing the information about state of operation.

Note

Not for the faint of heart. All profits and losses related are yours and yours alone. If you don't like it, write it yourself.

Author(s)

Vyacheslav Arbuzov

See Also

[sandboxDeletePositions](#)

Examples

```
token = 'your_token_from_tcs_account'
sandboxPositions(token,balance = 100,figi = 'BBG000BMFNP4')
```

---

sandboxRegister *Working with sandbox. Register account*

Description

Register sandbox account

Usage

```
sandboxRegister(token = "")
```

Arguments

token   token from Tinkoff account (only sandbox token)

Details

If you need to create few money position, use this function for each position

Value

returns a list object containing the information about state of operation.

Note

Not for the faint of heart. All profits and losses related are yours and yours alone. If you don't like it, write it yourself.

Author(s)

Vyacheslav Arbuzov

See Also

[sandboxDeleteAccount](#)

Examples

```
token = 'your_token_from_tcs_account'
sandboxRegister(token)
```

---

streamClient *Create stream client*

Description

this function creates client for streaming

Usage

```
streamClient(token = "")
```

Arguments

token   token from Tinkoff account

Details

As described by the official Tinkoff Investments documentation. If you want live trading, use sandbox=FALSE with live token

Value

returns a WebSocket object containing the information about connection.

Note

Not for the faint of heart. All profits and losses related are yours and yours alone. If you don't like it, write it yourself.

Author(s)

Vyacheslav Arbuzov

See Also

streamStatus streamClose streamSubscribe

streamClose *Close stream connection*

Description

this function close connection

Usage

```
streamClose(client = NULL)
```

Arguments

client   object from streamClient result, class of object ws

Details

As described by the official Tinkoff Investments documentation. If you want live trading, use sandbox=FALSE with live token

Value

returns status of connection

Note

Not for the faint of heart. All profits and losses related are yours and yours alone. If you don't like it, write it yourself.

Author(s)

Vyacheslav Arbuzov

See Also

streamStatus streamClient streamSubscribe

---

streamStatus *Check stream status*

Description

this function return current status of connection

Usage

```
streamStatus(client = NULL)
```

Arguments

client   object from streamClient result, class of object ws

Details

As described by the official Tinkoff Investments documentation. If you want live trading, use sandbox=FALSE with live token

Value

returns status of connection

Note

Not for the faint of heart. All profits and losses related are yours and yours alone. If you don't like it, write it yourself.

Author(s)

Vyacheslav Arbuzov

See Also

streamClose streamClient streamSubscribe

---

streamSubscribe   *Subscribe/Unsubscribe to stream*

Description

this function subscribes and unsubscribe for streaming

Usage

```
streamSubscribe(
  client = NULL,
  subscribe = TRUE,
  type = "candle",
  figi = "BBG004730N88",
  FUN = "print",
  interval = "1min",
  depth = 10
)
```

Arguments

client	object from streamClient result, class of object ws
subscribe	subscribe - TRUE (default) or unsubscribe - FALSE
type	type of events for subscription: "candle","orderbook" or "instrument_info"
figi	internal tinkoff code for instrument
FUN	function for handler (default print)
interval	timeframe of bars (availible "1min","2min","3min","5min","10min","15min","30min","hour","2hour","4l
depth	depth of orderbook, number of bids and asks (1 <= depth <= 20)

Details

As described by the official Tinkoff Investments documentation.

Value

returns result of stream handler

Note

Not for the faint of heart. All profits and losses related are yours and yours alone. If you don't like it, write it yourself.

Author(s)

Vyacheslav Arbuzov

See Also

streamStatus streamClose streamClient

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