

MetaTrader5

September 11, 2023

https://www.mql5.com/en/docs/integration/python_metatrader5

```
[18]: import MetaTrader5 as mt5
      from datetime import datetime, timedelta
      import pandas as pd
```

```
[2]: # connect to MetaTrader 5
      if not mt5.initialize():
          print("initialize() failed")
          mt5.shutdown()
```

```
[8]: # Lista todos os símbolos
      symbols = mt5.symbols_get()
```

```
[7]: symbols[0]
```

```
[7]: SymbolInfo(custom=False, chart_mode=1, select=False, visible=False,
session_deals=0, session_buy_orders=0, session_sell_orders=0, volume=0,
volumehigh=0, volumelow=0, time=0, digits=3, spread=0, spread_float=True,
ticks_bookdepth=32, trade_calc_mode=33, trade_mode=4, start_time=0,
expiration_time=1672337459, trade_stops_level=0, trade_freeze_level=0,
trade_exemode=3, swap_mode=0, swap_rollover3days=3, margin_hedged_use_leg=False,
expiration_mode=2, filling_mode=3, order_mode=127, order_gtc_mode=2,
option_mode=0, option_right=0, bid=0.0, bidhigh=0.0, bidlow=0.0, ask=0.0,
askhigh=0.0, asklow=0.0, last=0.0, lasthigh=0.0, lastlow=0.0, volume_real=0.0,
volumehigh_real=0.0, volumelow_real=0.0, option_strike=0.0, point=0.001,
trade_tick_value=0.0005, trade_tick_value_profit=0.0005,
trade_tick_value_loss=0.0005, trade_tick_size=0.001, trade_contract_size=1.0,
trade_accrued_interest=0.0, trade_face_value=0.0, trade_liquidity_rate=0.0,
volume_min=1.0, volume_max=300.0, volume_step=1.0, volume_limit=0.0,
swap_long=0.0, swap_short=0.0, margin_initial=3.2706, margin_maintenance=3.2706,
session_volume=0.0, session_turnover=0.0, session_interest=0.0,
session_buy_orders_volume=0.0, session_sell_orders_volume=0.0, session_open=0.0,
session_close=0.0, session_aw=0.0, session_price_settlement=0.0,
session_price_limit_min=0.0, session_price_limit_max=0.0, margin_hedged=0.0,
price_change=0.0, price_volatility=0.0, price_theoretical=0.0,
price_greeks_delta=0.0, price_greeks_theta=0.0, price_greeks_gamma=0.0,
price_greeks_vega=0.0, price_greeks_rho=0.0, price_greeks_omega=0.0,
```

```
price_sensitivity=0.0, basis='', category='', currency_base='BRL',
currency_profit='BRL', currency_margin='BRL', bank='',
description='COMPROM.CAMBIAL', exchange='', formula='', isin='BRBMEFDC00S8',
name='DCOF23', page='', path='BMF\\DCOF23')
```

```
[10]: # Encontra dados de um ticker
mt5.symbol_info('PETR4')
```

```
[10]: SymbolInfo(custom=False, chart_mode=1, select=False, visible=False,
session_deals=0, session_buy_orders=0, session_sell_orders=0, volume=0,
volumehigh=0, volumelow=0, time=0, digits=2, spread=0, spread_float=True,
ticks_bookdepth=32, trade_calc_mode=32, trade_mode=4, start_time=0,
expiration_time=0, trade_stops_level=0, trade_freeze_level=0, trade_exemode=3,
swap_mode=0, swap_rollover3days=3, margin_hedged_use_leg=False,
expiration_mode=11, filling_mode=3, order_mode=127, order_gtc_mode=0,
option_mode=0, option_right=0, bid=0.0, bidhigh=0.0, bidlow=0.0, ask=0.0,
askhigh=0.0, asklow=0.0, last=0.0, lasthigh=0.0, lastlow=0.0, volume_real=0.0,
volumehigh_real=0.0, volumelow_real=0.0, option_strike=0.0, point=0.01,
trade_tick_value=0.01, trade_tick_value_profit=0.01, trade_tick_value_loss=0.01,
trade_tick_size=0.01, trade_contract_size=1.0, trade_accrued_interest=0.0,
trade_face_value=0.0, trade_liquidity_rate=0.0, volume_min=100.0,
volume_max=56020428.0, volume_step=100.0, volume_limit=0.0, swap_long=0.0,
swap_short=0.0, margin_initial=0.0, margin_maintenance=0.0, session_volume=0.0,
session_turnover=0.0, session_interest=0.0, session_buy_orders_volume=0.0,
session_sell_orders_volume=0.0, session_open=0.0, session_close=0.0,
session_aw=0.0, session_price_settlement=0.0, session_price_limit_min=0.0,
session_price_limit_max=0.0, margin_hedged=0.0, price_change=0.0,
price_volatility=0.0, price_theoretical=0.0, price_greeks_delta=0.0,
price_greeks_theta=0.0, price_greeks_gamma=0.0, price_greeks_vega=0.0,
price_greeks_rho=0.0, price_greeks_omega=0.0, price_sensitivity=0.0, basis='',
category='', currency_base='BRL', currency_profit='BRL', currency_margin='BRL',
bank='', description='PETROBRAS PN EDJ N2', exchange='', formula='',
isin='BRPETRACNPR6', name='PETR4', page='', path='BOVESPA\\A VISTA\\PETR4')
```

0.1 Obtendo dados de Ticks

```
[11]: # https://www.mql5.com/en/docs/integration/python\_metatrader5/
      ↪mt5.copyticksrange_py
mt5.copy_ticks_range()
```

```
[11]: <function MetaTrader5._core.copy_ticks_range>
```

```
[15]: ticker = 'PETR4'
t0 = datetime.today() - timedelta(days=120)
t1 = datetime.today()

# request tick data
```

```
ticks = mt5.copy_ticks_range(ticker, t0, t1, mt5.COPY_TICKS_TRADE)
```

```
[29]: df = pd.DataFrame(ticks)
df.set_index("time", inplace=True)
df.index = pd.to_datetime(df.index, utc=True, unit='s')
```

```
[31]: def buy_or_sell(flag):
    '''
    see https://www.mql5.com/en/forum/75268
    for explanation on MetaTrader flags
    '''
    if (flag & 32) and (flag & 64):
        return 'both'
    elif flag & 32:
        return 'buy'
    elif flag & 64:
        return 'sell'
```

```
[34]: df["flags"] = df["flags"].apply(buy_or_sell)
```

```
[37]: df.tail(50000).to_csv("petr4_ticks.csv", sep=";", decimal=",")
```