1. Checklist

Funções básicas que devemos fazer com o metatrader

1. Instalar Metatrader
2. Configurar Metatrader junto à sua corretora de preferência
3. Instalar biblioteca Metatrader5 no Python
4. Abrir Metatrader via Python
5. Obter dados de ativos do Metatrader via Python
    5.1. Dados de ticks
    5.2. Dados de negociação
    5.3. Dados de oferta (books)
    5.4. Dados de volume
6. Como mandar ordens pelo Python

```
!pip install MetaTrader5
```

```
Requirement already satisfied: MetaTrader5 in c:\programdata\anaconda3\lib\site-packages (5.0.34)
Requirement already satisfied: numpy>=1.7 in c:\programdata\anaconda3\lib\site-packages (from MetaTrader5) (1.19.2)
```

2. Abrindo bibliotecas e Metatrader

```
import numpy as np
import pandas as pd
from datetime import datetime
import pytz
import MetaTrader5 as mt5
```

```
mt5.initialize()
```

```
True
```

```
#mt5.shutdown()
```

```
True
```

```
login = ''
senha = ''
servidor = ''
```

```
mt5.login(login, senha, servidor, timeout)
```

```
mt5.version()
```

```
(500, 3062, '27 Sep 2021')
```

```
mt5.terminal_info()
```

```
TerminalInfo(community_account=False, community_connection=False, connected=True, dlls_allowed=False, trade_allowed=
```

```
mt5.account_info()
```

3. Explorando dados de mercado financeiro

Quantos ativos financeiros existem

```
mt5.symbols_total()
```

```
22076
```

Que ativos são esses?

```
mt5.symbols_get('WEGE')
```

```
(SymbolInfo(custom=False, chart_mode=1, select=True, visible=True, session_deals=26365, session_buy_orders=0, ses
 SymbolInfo(custom=False, chart_mode=1, select=False, visible=False, session_deals=0, session_buy_orders=0, sessi
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 SymbolInfo(custom=False, chart_mode=1, select=False, visible=False, session_deals=0, session_buy_orders=0, sessi
```

```
opcao_weg = mt5.symbols_get('WEGE')[0]._asdict()
```

```
opcao_weg['session_deals']
```

```
26439
```

```
mt5.symbol_info('WEGE3')
```

```
SymbolInfo(custom=False, chart_mode=1, select=True, visible=True, session_deals=26606, session_buy_orders=0, sessior
```

```
mt5.symbol_info_tick('WEGE3')
```

```
Tick(time=1632847485, bid=40.73, ask=40.75, last=40.73, volume=200, time_msc=1632847485594, flags=0, volume_real=20(
```

```
mt5.symbol_info_tick('WEGE3')
```

```
Tick(time=1632847512, bid=40.75, ask=40.76, last=40.75, volume=1200, time_msc=1632847512801, flags=6, volume_real=12
```

```
import time

t_end = time.time() + 60*1

while time.time() < t_end:

    x = mt5.symbol_info_tick('PETR4')

    print (x)

    time.sleep(2)
```

```
Tick(time=1632847643, bid=26.94, ask=26.95, last=26.95, volume=100, time_msc=1632847643545, flags=0, volume_real=10(
Tick(time=1632847644, bid=26.94, ask=26.95, last=26.94, volume=100, time_msc=1632847644170, flags=0, volume_real=10(
Tick(time=1632847644, bid=26.94, ask=26.95, last=26.94, volume=100, time_msc=1632847644170, flags=0, volume_real=10(
Tick(time=1632847648, bid=26.94, ask=26.95, last=26.94, volume=700, time_msc=1632847648657, flags=0, volume_real=70(
Tick(time=1632847650, bid=26.94, ask=26.95, last=26.94, volume=100, time_msc=1632847650756, flags=0, volume_real=10(
Tick(time=1632847653, bid=26.94, ask=26.95, last=26.94, volume=2200, time_msc=1632847653343, flags=0, volume_real=22
Tick(time=1632847654, bid=26.94, ask=26.95, last=26.94, volume=100, time_msc=1632847654931, flags=0, volume_real=10(
Tick(time=1632847656, bid=26.94, ask=26.95, last=26.95, volume=2000, time_msc=1632847656975, flags=0, volume_real=2(
Tick(time=1632847659, bid=26.94, ask=26.95, last=26.94, volume=2700, time_msc=1632847659074, flags=2, volume_real=27
Tick(time=1632847661, bid=26.94, ask=26.95, last=26.94, volume=400, time_msc=1632847661498, flags=0, volume_real=40(
Tick(time=1632847662, bid=26.94, ask=26.95, last=26.95, volume=100, time_msc=1632847662956, flags=0, volume_real=10(
Tick(time=1632847665, bid=26.94, ask=26.95, last=26.95, volume=200, time_msc=1632847665760, flags=0, volume_real=20(
Tick(time=1632847667, bid=26.93, ask=26.94, last=26.94, volume=500, time_msc=1632847667697, flags=6, volume_real=50(
Tick(time=1632847669, bid=26.93, ask=26.94, last=26.94, volume=1000, time_msc=1632847669608, flags=0, volume_real=1(
Tick(time=1632847671, bid=26.93, ask=26.94, last=26.94, volume=100, time_msc=1632847671572, flags=0, volume_real=10(
Tick(time=1632847673, bid=26.92, ask=26.93, last=26.93, volume=100, time_msc=1632847673455, flags=2, volume_real=10(
Tick(time=1632847675, bid=26.92, ask=26.93, last=26.93, volume=100, time_msc=1632847675190, flags=0, volume_real=10(
Tick(time=1632847677, bid=26.92, ask=26.93, last=26.92, volume=1000, time_msc=1632847677909, flags=0, volume_real=1(
Tick(time=1632847679, bid=26.91, ask=26.93, last=26.92, volume=1000, time_msc=1632847679578, flags=2, volume_real=1(
Tick(time=1632847680, bid=26.92, ask=26.93, last=26.93, volume=100, time_msc=1632847680797, flags=0, volume_real=10(
Tick(time=1632847682, bid=26.93, ask=26.94, last=26.94, volume=100, time_msc=1632847682458, flags=6, volume_real=10(
Tick(time=1632847684, bid=26.93, ask=26.94, last=26.94, volume=100, time_msc=1632847684895, flags=0, volume_real=10(
Tick(time=1632847686, bid=26.94, ask=26.95, last=26.94, volume=200, time_msc=1632847686897, flags=0, volume_real=20(
Tick(time=1632847689, bid=26.94, ask=26.95, last=26.95, volume=100, time_msc=1632847689961, flags=0, volume_real=10(
Tick(time=1632847691, bid=26.94, ask=26.95, last=26.95, volume=3100, time_msc=1632847691934, flags=0, volume_real=31
Tick(time=1632847692, bid=26.94, ask=26.95, last=26.95, volume=100, time_msc=1632847692826, flags=0, volume_real=10(
Tick(time=1632847695, bid=26.94, ask=26.95, last=26.95, volume=100, time_msc=1632847695859, flags=0, volume_real=10(
Tick(time=1632847697, bid=26.94, ask=26.95, last=26.94, volume=2000, time_msc=1632847697412, flags=0, volume_real=2(
Tick(time=1632847697, bid=26.94, ask=26.95, last=26.94, volume=2000, time_msc=1632847697412, flags=0, volume_real=2(
Tick(time=1632847701, bid=26.94, ask=26.95, last=26.95, volume=100, time_msc=1632847701819, flags=0, volume_real=10(
```

Dados de mini-índice e mini-dólar

```
mt5.symbols_get('WINV21')
```

```
(SymbolInfo(custom=False, chart_mode=1, select=False, visible=False, session_deals=0, session_buy_orders=0, session_
```

```
mt5.symbols_get('WDOZ21')
```

```
(SymbolInfo(custom=False, chart_mode=1, select=False, visible=False, session_deals=0, session_buy_orders=0, session_
```

Book de ofertas

```
mt5.market_book_add('VAMO3')
```

```
True
```

```
mt5.market_book_get('VAMO3')
```

```
(BookInfo(type=1, price=16.29, volume=500, volume_dbl=500.0),
 BookInfo(type=1, price=16.25, volume=400, volume_dbl=400.0),
 BookInfo(type=1, price=16.2, volume=8800, volume_dbl=8800.0),
 BookInfo(type=1, price=16.16, volume=1000, volume_dbl=1000.0),
 BookInfo(type=1, price=16.09, volume=400, volume_dbl=400.0),
 BookInfo(type=1, price=16.0, volume=1700, volume_dbl=1700.0),
 BookInfo(type=1, price=15.99, volume=3000, volume_dbl=3000.0),
 BookInfo(type=1, price=15.97, volume=7800, volume_dbl=7800.0),
 BookInfo(type=1, price=15.95, volume=500, volume_dbl=500.0),
 BookInfo(type=1, price=15.93, volume=100, volume_dbl=100.0),
 BookInfo(type=1, price=15.9, volume=100, volume_dbl=100.0),
 BookInfo(type=1, price=15.88, volume=100, volume_dbl=100.0),
 BookInfo(type=1, price=15.85, volume=100, volume_dbl=100.0),
 BookInfo(type=1, price=15.82, volume=100, volume_dbl=100.0),
 BookInfo(type=1, price=15.8, volume=400, volume_dbl=400.0),
 BookInfo(type=1, price=15.61, volume=200, volume_dbl=200.0),
 BookInfo(type=1, price=15.0, volume=2700, volume_dbl=2700.0),
 BookInfo(type=1, price=13.58, volume=20000, volume_dbl=20000.0),
 BookInfo(type=1, price=10.0, volume=500, volume_dbl=500.0),
 BookInfo(type=3, price=0.0, volume=197500, volume_dbl=197500.0),
 BookInfo(type=4, price=0.0, volume=63800, volume_dbl=63800.0),
 BookInfo(type=2, price=16.51, volume=1000, volume_dbl=1000.0),
 BookInfo(type=2, price=16.3, volume=7600, volume_dbl=7600.0),
 BookInfo(type=2, price=15.8, volume=100, volume_dbl=100.0),
 BookInfo(type=2, price=15.71, volume=100, volume_dbl=100.0),
 BookInfo(type=2, price=15.7, volume=2000, volume_dbl=2000.0),
 BookInfo(type=2, price=15.68, volume=1000, volume_dbl=1000.0),
 BookInfo(type=2, price=15.66, volume=700, volume_dbl=700.0),
 BookInfo(type=2, price=15.65, volume=14100, volume_dbl=14100.0),
 BookInfo(type=2, price=15.6, volume=400, volume_dbl=400.0),
 BookInfo(type=2, price=15.57, volume=300, volume_dbl=300.0),
 BookInfo(type=2, price=15.55, volume=100, volume_dbl=100.0),
 BookInfo(type=2, price=15.51, volume=1000, volume_dbl=1000.0),
 BookInfo(type=2, price=15.5, volume=1600, volume_dbl=1600.0),
 BookInfo(type=2, price=15.36, volume=4000, volume_dbl=4000.0),
 BookInfo(type=2, price=15.33, volume=2000, volume_dbl=2000.0),
 BookInfo(type=2, price=15.31, volume=600, volume_dbl=600.0),
 BookInfo(type=2, price=15.3, volume=4200, volume_dbl=4200.0),
 BookInfo(type=2, price=15.27, volume=7000, volume_dbl=7000.0),
 BookInfo(type=2, price=15.26, volume=100, volume_dbl=100.0))
```

4. Obtendo dados de cotação de ativos

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

4.1. Função copy_rates_from

```
hoje = datetime.today()
```

```
acao = mt5.copy_rates_from("WEGE3", mt5.TIMEFRAME_M5, hoje, 10000)
```

```
acao
```

```
array([(1617900000, 38.02, 38.09, 38.  , 38.08, 249, 1,  126800),
       (1617900300, 38.07, 38.09, 38.05, 38.09, 221, 1,   84800),
```

```
(1617900600, 38.09, 38.09, 38.  , 38.03, 331, 1, 1500200), ...,
(1633104000, 40.19, 40.23, 40.14, 40.19,  95, 1,   72100),
(1633104300, 40.19, 40.23, 40.18, 40.23,  73, 1,   40000),
(1633104600, 40.22, 40.23, 40.2 , 40.22,  18, 1,    6300)],
dtype=[('time', '<i8'), ('open', '<f8'), ('high', '<f8'), ('low', '<f8'), ('close', '<f8'), ('tick_volume', '<
```

```
acao_df = pd.DataFrame(acao)
```

```
acao_df['time'] = pd.to_datetime(acao_df['time'], unit = 's')
```

```
acao_df.head()
```

	time	open	high	low	close	tick_volume	spread	real_volume
0	2021-04-08 16:40:00	38.02	38.09	38.00	38.08	249	1	126800
1	2021-04-08 16:45:00	38.07	38.09	38.05	38.09	221	1	84800
2	2021-04-08 16:50:00	38.09	38.09	38.00	38.03	331	1	1500200
3	2021-04-09 10:05:00	37.72	37.90	37.68	37.79	253	1	97000
4	2021-04-09 10:10:00	37.79	37.87	36.87	36.87	956	1	440000

```
acao_df.shape
```

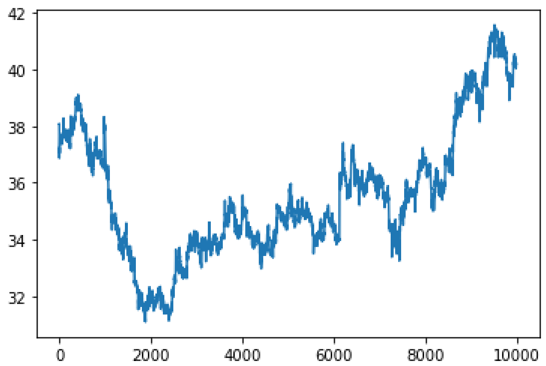
```
(10000, 8)
```

```
acao_df.tail()
```

	time	open	high	low	close	tick_volume	spread	real_volume
9995	2021-10-01 15:50:00	40.13	40.21	40.11	40.21	87	1	47600
9996	2021-10-01 15:55:00	40.21	40.23	40.18	40.20	90	1	50100
9997	2021-10-01 16:00:00	40.19	40.23	40.14	40.19	95	1	72100
9998	2021-10-01 16:05:00	40.19	40.23	40.18	40.23	73	1	40000
9999	2021-10-01 16:10:00	40.22	40.23	40.20	40.22	18	1	6300

```
acao_df.close.plot()
```

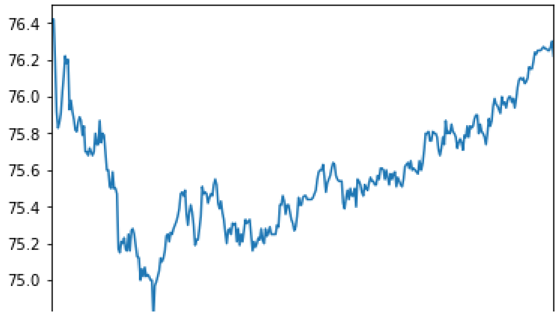
```
<AxesSubplot:>
```




```
hoje = datetime.today()
acao = mt5.copy_rates_from("AAPL34", mt5.TIMEFRAME_M1, hoje, 350)
acao_df = pd.DataFrame(acao)
acao_df['time'] = pd.to_datetime(acao_df['time'], unit = 's')
acao_df.index = acao_df['time']

acao_df.close.plot()
```

```
<AxesSubplot:xlabel='time'>
```

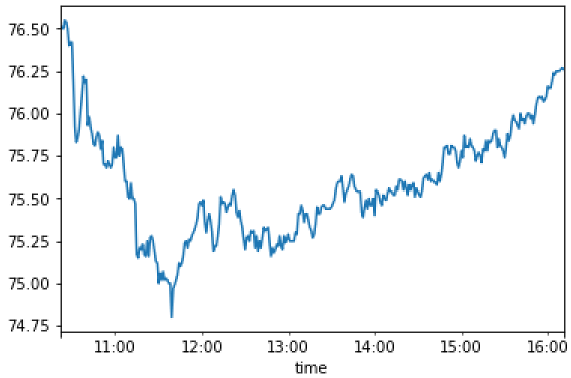


4.2. Função copy_rates_from_pos

```
acao = mt5.copy_rates_from_pos("AAPL34", mt5.TIMEFRAME_M1, 10, 350)
acao_df = pd.DataFrame(acao)
acao_df['time'] = pd.to_datetime(acao_df['time'], unit = 's')
acao_df.index = acao_df['time']

acao_df.close.plot()
```

```
<AxesSubplot:xlabel='time'>
```



4.3. Função copy_rates_range

```
fuso = pytz.timezone("Etc/GMT-3")
```

```
inicio = datetime(2021, 9, 30, hour = 10, tzinfo = fuso)
fim = datetime(2021, 9, 30, hour = 17, tzinfo = fuso)
```

```
acao = mt5.copy_rates_range("WEGE3", mt5.TIMEFRAME_D1, inicio, fim)
```

```
acao
```

```
array([],
      dtype=[('time', '<i8'), ('open', '<f8'), ('high', '<f8'), ('low', '<f8'), ('close', '<f8'), ('tick_volume', '<
```

```
acao = mt5.copy_rates_range("WEGE3", mt5.TIMEFRAME_D1, inicio, fim)
acao_df = pd.DataFrame(acao)
acao_df['time'] = pd.to_datetime(acao_df['time'], unit = 's')
acao_df.index = acao_df['time']

acao_df.close.plot()
```

```
<AxesSubplot:xlabel='time'>
```