In [37]:

```
import glob
import pandas as pd
from pandas import read_csv
import ipywidgets as widgets
from ipywidgets import interact, interact_manual
import plotly.express as px
import plotly.graph_objects as go
import os
import numpy as np
import seaborn as sns
from IPython.display import display, Image
```

In [38]:

```
# get data file names
path =r'/Users/cindymendoncapaez/opt/anaconda3/lib/python3.8/site-packages/folium/finance project/Breakout US stocks'
filenames = glob.glob(path + "/*.csv")

dfs = []
for filename in filenames:
    dfs.append(pd.read_csv(filename))

# Concatenate all data into one DataFrame
big_frame = pd.concat(dfs, ignore_index=True)
```

In [39]:

```
#set the column names
big_frame.columns = ['time', 'open', 'high', 'low', 'close', 'MA50', 'MA20', 'MA10', 'ADR', 'DV M', 'MA20 DV M', 'entry/exit']
big_frame
```

Out[39]:

	time	open	high	low	close	MA50	MA20	MA10	ADR	DV M	MA20 DV M	entry/exit
0	2010-09-09T15:30:00+02:00	17.12000	17.17000	16.78999	17.05000	16.379900	16.839499	16.642000	3.809955	4.920191	8.414308	NaN
1	2010-09-10T15:30:00+02:00	17.11000	17.91499	16.97000	17.82001	16.438900	16.863999	16.800000	3.822202	11.175040	8.550858	NaN
2	2010-09-13T15:30:00+02:00	17.85001	18.95000	17.74001	18.67999	16.526500	16.947999	17.037999	4.012346	25.458171	9.386664	NaN
3	2010-09-14T15:30:00+02:00	18.64000	18.82001	18.37000	18.42000	16.611000	17.011499	17.299999	3.995199	14.444860	9.704984	NaN
4	2010-09-15T15:30:00+02:00	18.35001	18.95000	18.25000	18.92999	16.707599	17.075499	17.593998	3.975215	11.940623	9.674400	NaN
...	...	...	...	...	...	...	...	...	...	...	...	...
158365	2021-12-03T15:30:00+01:00	64.38000	65.00000	61.30000	61.96000	55.036200	62.547000	63.098000	4.287038	21.414607	27.081431	NaN
158366	2021-12-06T15:30:00+01:00	62.98000	64.05000	60.12000	63.45000	55.322200	62.666500	63.187000	4.341776	19.793816	26.606494	NaN
158367	2021-12-07T15:30:00+01:00	64.70000	68.96670	64.68000	68.73000	55.701600	63.010500	63.702000	4.530290	47.703452	27.804088	NaN
158368	2021-12-08T15:30:00+01:00	69.18000	69.78610	67.46100	68.91000	56.126200	63.349000	64.210000	4.584972	32.064560	28.220291	NaN
158369	2021-12-09T15:30:00+01:00	68.77000	69.31600	65.64500	65.85000	56.509000	63.620000	64.323000	4.599803	22.020844	27.434117	NaN

158370 rows × 12 columns

In [40]:

```
#find the entries

big_frame = big_frame.loc[big_frame['entry/exit']=='entry']
big_frame = big_frame.replace('entry',1)
big_frame
```

Out[40]:

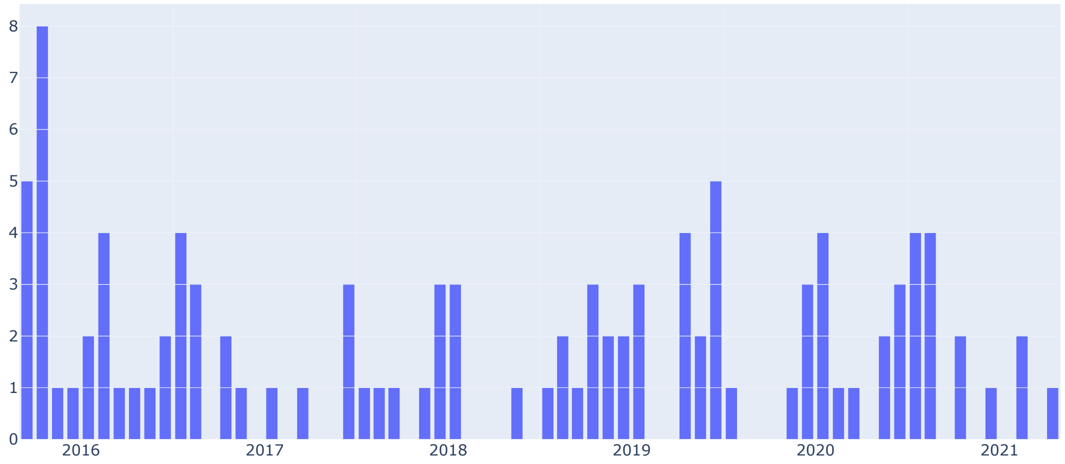
	time	open	high	low	close	MA50	MA20	MA10	ADR	DV M	MA20 DV M	entry/exit
1723	2017-07-14T15:30:00+02:00	152.140000	154.820000	152.120000	154.300000	145.496800	150.569000	151.495000	2.003751	79.477509	241.328168	1
4734	2021-04-23T15:30:00+02:00	27.190000	27.680000	26.810000	27.500000	26.005600	27.001500	26.927000	2.830021	2.045909	1.383159	1
6400	2016-08-03T15:30:00+02:00	23.166532	23.503909	22.930369	23.413942	22.261913	23.623116	23.744571	2.541473	143.524708	207.663470	1
9453	2017-05-31T15:30:00+02:00	84.530000	85.810000	83.305000	85.130000	78.857600	83.711000	84.076000	2.645499	5.526425	5.835718	1
9881	2019-02-12T15:30:00+01:00	86.350000	88.026200	85.870000	87.030000	81.238000	85.656000	86.376000	1.988348	2.244652	4.044765	1
...	...	...	...	...	...	...	...	...	...	...	...	...
150968	2018-02-28T15:30:00+01:00	6.530000	7.456000	6.470000	7.250000	6.030002	6.287500	6.361000	7.785079	1.562838	0.497756	1
153436	2016-08-17T15:30:00+02:00	65.970000	67.370000	65.780000	67.350000	63.107200	66.020500	65.798000	2.121894	100.810129	93.398305	1
155982	2019-05-16T15:30:00+02:00	6.480000	8.179900	6.480000	8.130000	5.875800	6.606500	6.698000	7.200307	15.797977	3.110227	1
156012	2019-06-28T15:30:00+02:00	11.060000	11.980000	10.920000	11.890000	8.983000	11.146000	11.330000	5.910406	32.540900	9.469533	1
157042	2016-09-01T15:30:00+02:00	11.760000	12.170000	11.640000	12.000000	11.068200	11.791500	11.802000	2.915868	2.067458	1.689474	1

107 rows × 12 columns

In [41]:
```
df = big_frame

fig = go.Figure()

fig.add_trace(go.Bar(
    name="Middle-aligned",
    x=df["time"], y=df["entry/exit"],
    xperiod="M1",
    xperiodalignment="middle"
))
fig.update_xaxes(showgrid=True, ticklabelmode="period")
fig.show()
```



In [42]:
```
csv_directory = '/Users/cindymendoncapaez/Downloads/Breakout US stocks/breakout/csv/'

@interact
def show_csv(file=os.listdir(csv_directory)):
    global code
    display(pd.read_csv(csv_directory+file, sep = ';'))
    code = file.split('.csv')[0]

fdir = '/Users/cindymendoncapaez/Downloads/Breakout US stocks/breakout/graphs/'

@interact
def show_images(ticker_name = code):
    list_code = os.listdir(fdir)
    list_match = [x for x in list_code if x.startswith(ticker_name + '_')]
    for file in list_match:
        display(Image(fdir+file))
```

file AEIS.csv

	Unnamed: 0	time	open	high	low	close	MA	MA.1	MA.2	ADR	DV M	MA20 DV M	entry/exit
0	0	2020-10-22T15:30:00+02:00	72.64	73.830	72.0750	73.32	68.6322	68.1715	72.458	3.021762	16.734866	17.416925	NaN
1	1	2020-10-23T15:30:00+02:00	73.28	73.710	72.2800	72.49	68.4806	68.8100	72.667	2.995171	8.959552	17.253716	NaN
2	2	2020-10-26T14:30:00+01:00	71.51	71.820	68.5700	70.15	68.2830	69.2185	72.509	3.031096	15.113966	17.191543	NaN
3	3	2020-10-27T14:30:00+01:00	69.71	70.110	68.9500	69.50	68.0372	69.5480	72.243	2.966021	12.505249	16.696366	NaN
4	4	2020-10-28T14:30:00+01:00	68.29	68.480	66.6500	67.26	67.7932	69.7640	71.757	2.941496	16.116685	16.422192	NaN
...	...	...	...	...	...	...	...	...	...	...	...	...	...
111	111	2021-04-05T15:30:00+02:00	120.00	122.355	117.6000	120.33	107.6792	106.6065	107.991	4.585894	47.463939	33.318239	NaN
112	112	2021-04-06T15:30:00+02:00	119.81	121.400	117.5500	119.54	107.6934	107.7670	109.458	4.405024	26.400510	33.070355	NaN
113	113	2021-04-07T15:30:00+02:00	119.10	119.200	116.4801	117.67	107.7564	108.4520	111.188	4.218549	15.581283	32.254376	NaN

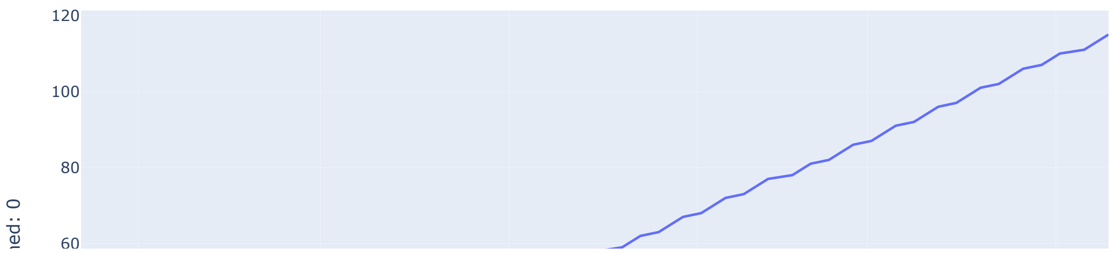
In [43]:
```
path = '/Users/cindymendoncapaez/Downloads/Breakout US stocks/breakout/csv/'

@interact
def show_csv(file=os.listdir(path)):
    global tickers
    tickers = pd.read_csv(path+file, sep = ';')
    code = file.split('.csv')[0]


@interact
def display_time_series(param = tickers):
    list_code = os.listdir(path)
    fig = px.line(tickers, x=tickers['time'], y=param)
    fig.show()
```

file AEIS.csv

param Unnamed: 0



In [44]:
```
#Values

days_high = tickers["high"]
days_low = tickers["low"]
days_close = tickers["close"]

#low range
daily_ranges = []

for ticker in tickers:

    exit_price = days_close

exit_price
```

Out[44]:
```
0       73.32
1       72.49
2       70.15
3       69.50
4       67.26
        ...
111    120.33
112    119.54
113    117.67
114    118.59
115    118.45
Name: close, Length: 116, dtype: float64
```

In [45]:
```
#high range

days_high = tickers["high"]
days_low = tickers["low"]
days_close = tickers["close"]

daily_ranges = []

for ticker in tickers:

    entry_price = (days_low + days_high) /2


entry_price
```

Out[45]:
```
0       72.95250
1       72.99500
2       70.19500
3       69.53000
4       67.56500
          ...
111    119.97750
112    119.47500
113    117.84005
114    118.51000
115    117.47500
Length: 116, dtype: float64
```

In [46]:
```
# Combine tickers table with Entry, Exit and Entry & Exit rows

combined_data = tickers
combined_data['entry_price'] =  entry_price
combined_data['exit_price'] = exit_price
```

```
In [47]: combined_data
```

```
Out[47]:
       Unnamed: 0                       time    open     high       low   close        MA       MA.1     MA.2       ADR       DV M  MA20 DV M  entry/exit  entry_price  exit_price
  0             0  2020-10-22T15:30:00+02:00   72.64   73.830   72.0750   73.32   68.6322    68.1715   72.458  3.021762  16.734866  17.416925         NaN     72.95250       73.32
  1             1  2020-10-23T15:30:00+02:00   73.28   73.710   72.2800   72.49   68.4806    68.8100   72.667  2.995171   8.959552  17.253716         NaN     72.99500       72.49
  2             2  2020-10-26T14:30:00+01:00   71.51   71.820   68.5700   70.15   68.2830    69.2185   72.509  3.031096  15.113966  17.191543         NaN     70.19500       70.15
  3             3  2020-10-27T14:30:00+01:00   69.71   70.110   68.9500   69.50   68.0372    69.5480   72.243  2.966021  12.505249  16.696366         NaN     69.53000       69.50
  4             4  2020-10-28T14:30:00+01:00   68.29   68.480   66.6500   67.26   67.7932    69.7640   71.757  2.941496  16.116685  16.422192         NaN     67.56500       67.26
...           ...                        ...     ...      ...       ...     ...       ...        ...      ...       ...        ...        ...         ...          ...         ...
111           111  2021-04-05T15:30:00+02:00  120.00  122.355  117.6000  120.33  107.6792   106.6065  107.991  4.585894  47.463939  33.318239         NaN    119.97750      120.33
112           112  2021-04-06T15:30:00+02:00  119.81  121.400  117.5500  119.54  107.6934   107.7670  109.458  4.405024  26.400510  33.070355         NaN    119.47500      119.54
113           113  2021-04-07T15:30:00+02:00  119.10  119.200  116.4801  117.67  107.7564   108.4520  111.188  4.218549  15.581283  32.254376         NaN    117.84005      117.67
114           114  2021-04-08T15:30:00+02:00  120.32  120.320  116.7000  118.59  107.9014   109.1930  112.864  4.205248  22.302397  32.495061         NaN    118.51000      118.59
115           115  2021-04-09T15:30:00+02:00  117.39  118.730  116.2200  118.45  108.1874   109.6805  114.501  4.150538  18.653620  32.589697         NaN    117.47500      118.45

116 rows × 15 columns
```

```
In [48]: #First entry & Last exit code with profit. Please notice that the underlined rows are the ones to look at.

         csv_directory = '/Users/cindymendoncapaez/Downloads/Breakout US stocks/breakout/csv/'

         @interact
         def show_csv(file=os.listdir(csv_directory)):
             tickers = pd.read_csv(path+file, sep = ',')
             combined_data = tickers
             combined_data.columns = ['time', 'open', 'high', 'low', 'close', 'MA50', 'MA20', 'MA10', 'ADR', 'DV M', 'MA20 DV M', 'entry/exit']
             days_high = tickers["high"]
             days_low = tickers["low"]
             days_close = tickers["close"]
             combined_data['entry_price'] = (days_low + days_high) /2
             combined_data['exit_price'] = days_close
             last_exit = combined_data.groupby(['entry/exit'], as_index='exit').last()
             first_entry = combined_data.groupby(['entry/exit'], as_index='entry').first()
             last_exit_style = last_exit.style.set_properties(subset = pd.IndexSlice[['exit'], :], **{'background-color' : 'yellow'})
             first_entry_style = first_entry.style.set_properties(subset = pd.IndexSlice[['entry'], :], **{'background-color' : 'yellow'})
             display (first_entry_style)
             display (last_exit_style)
```

```
file  BATS_AMPE, 1D_7952a.csv

                                 time      open      high       low     close      MA50      MA20      MA10        ADR      DV M  MA20 DV M  entry_price  exit_price
entry/exit
     entry  2017-11-13T15:30:00+01:00  1.140000  1.260000  1.140000  1.240000  0.850100  1.115210  1.144000  11.801697  2.615341   1.209093     1.200000    1.240000
      exit  2017-11-14T15:30:00+01:00  1.280000  1.320000  1.080000  1.190000  0.863028  1.125000  1.157000  12.487276  1.358449   1.247654     1.200000    1.190000

                                 time      open      high       low     close      MA50      MA20      MA10        ADR       DV M  MA20 DV M  entry_price  exit_price
entry/exit
     entry  2017-12-12T15:30:00+01:00  1.600000  1.690000  1.540000  1.680000  1.257448  1.592000  1.632000  15.806241   0.985087   2.211793     1.615000    1.680000
      exit  2018-01-04T15:30:00+01:00  3.010000  3.100000  2.410000  2.510000  1.859800  2.615500  3.259000  19.587206  12.865098   8.229892     2.755000    2.510000
```

```
In [49]: #Profit, risk and R calculators


         @interact
         def show_csv(file=os.listdir(csv_directory)):
             tickers = pd.read_csv(path+file, sep = ',')
             combined_data = tickers
             combined_data.columns = ['time', 'open', 'high', 'low', 'close', 'MA50', 'MA20', 'MA10', 'ADR', 'DV M', 'MA20 DV M', 'entry/exit']
             days_high = tickers["high"]
             days_low = tickers["low"]
             days_close = tickers["close"]
             combined_data = combined_data[combined_data['entry/exit'].isin(["entry","exit"])]
             combined_data['entry_price']= np.NaN
             combined_data['exit_price'] = np.NaN
             combined_data['profit'] = np.NaN
             combined_data['risk'] = np.NaN
             combined_data['R'] = np.NaN
             combined_data.loc[combined_data['entry/exit'].isin(["entry"]), 'entry_price'] = (combined_data['low'] + combined_data['high']) /2
             combined_data.loc[combined_data['entry/exit'].isin(["exit"]), 'exit_price'] = combined_data['close']
             combined_data['entry_price'] = combined_data['entry_price'].fillna(method='ffill')
             combined_data.loc[combined_data['entry/exit'].isin(["exit"]), 'profit'] = combined_data['exit_price']-combined_data['entry_price']
             combined_data.loc[combined_data['entry/exit'].isin(["entry"]),'risk'] = combined_data['entry_price']-combined_data['low']
             combined_data['risk'] = combined_data['risk'].fillna(method='ffill')
             combined_data.loc[combined_data['entry/exit'].isin(["exit"]), 'R'] = combined_data['profit']/combined_data['risk']
             display(combined_data)
```

file BATS_AMPE, 1D_7952a.csv

```
<ipython-input-49-d5bc074f9822>:13: SettingWithCopyWarning:


A value is trying to be set on a copy of a slice from a DataFrame.
Try using .loc[row_indexer,col_indexer] = value instead

See the caveats in the documentation: https://pandas.pydata.org/pandas-docs/stable/user_guide/indexing.html#returning-a-view-versus-a
-copy (https://pandas.pydata.org/pandas-docs/stable/user_guide/indexing.html#returning-a-view-versus-a-copy)

<ipython-input-49-d5bc074f9822>:14: SettingWithCopyWarning:


A value is trying to be set on a copy of a slice from a DataFrame.
Try using .loc[row_indexer,col_indexer] = value instead

See the caveats in the documentation: https://pandas.pydata.org/pandas-docs/stable/user_guide/indexing.html#returning-a-view-versus-a
-copy (https://pandas.pydata.org/pandas-docs/stable/user_guide/indexing.html#returning-a-view-versus-a-copy)

<ipython-input-49-d5bc074f9822>:15: SettingWithCopyWarning:


A value is trying to be set on a copy of a slice from a DataFrame.
Try using .loc[row_indexer,col_indexer] = value instead

See the caveats in the documentation: https://pandas.pydata.org/pandas-docs/stable/user_guide/indexing.html#returning-a-view-versus-a
-copy (https://pandas.pydata.org/pandas-docs/stable/user_guide/indexing.html#returning-a-view-versus-a-copy)

<ipython-input-49-d5bc074f9822>:16: SettingWithCopyWarning:


A value is trying to be set on a copy of a slice from a DataFrame.
Try using .loc[row_indexer,col_indexer] = value instead

See the caveats in the documentation: https://pandas.pydata.org/pandas-docs/stable/user_guide/indexing.html#returning-a-view-versus-a
-copy (https://pandas.pydata.org/pandas-docs/stable/user_guide/indexing.html#returning-a-view-versus-a-copy)

<ipython-input-49-d5bc074f9822>:17: SettingWithCopyWarning:


A value is trying to be set on a copy of a slice from a DataFrame.
Try using .loc[row_indexer,col_indexer] = value instead

See the caveats in the documentation: https://pandas.pydata.org/pandas-docs/stable/user_guide/indexing.html#returning-a-view-versus-a
-copy (https://pandas.pydata.org/pandas-docs/stable/user_guide/indexing.html#returning-a-view-versus-a-copy)

/Users/cindymendoncapaez/.local/lib/python3.8/site-packages/pandas/core/indexing.py:1743: SettingWithCopyWarning:


A value is trying to be set on a copy of a slice from a DataFrame.
Try using .loc[row_indexer,col_indexer] = value instead

See the caveats in the documentation: https://pandas.pydata.org/pandas-docs/stable/user_guide/indexing.html#returning-a-view-versus-a
-copy (https://pandas.pydata.org/pandas-docs/stable/user_guide/indexing.html#returning-a-view-versus-a-copy)

<ipython-input-49-d5bc074f9822>:20: SettingWithCopyWarning:


A value is trying to be set on a copy of a slice from a DataFrame.
Try using .loc[row_indexer,col_indexer] = value instead

See the caveats in the documentation: https://pandas.pydata.org/pandas-docs/stable/user_guide/indexing.html#returning-a-view-versus-a
-copy (https://pandas.pydata.org/pandas-docs/stable/user_guide/indexing.html#returning-a-view-versus-a-copy)

<ipython-input-49-d5bc074f9822>:23: SettingWithCopyWarning:


A value is trying to be set on a copy of a slice from a DataFrame.
Try using .loc[row_indexer,col_indexer] = value instead

See the caveats in the documentation: https://pandas.pydata.org/pandas-docs/stable/user_guide/indexing.html#returning-a-view-versus-a
-copy (https://pandas.pydata.org/pandas-docs/stable/user_guide/indexing.html#returning-a-view-versus-a-copy)
```

	time	open	high	low	close	MA50	MA20	MA10	ADR	DV M	MA20 DV M	entry/exit	entry_price	exit_price	profit	risk	R

	time	open	high	low	close	MA50	MA20	MA10	ADR	DV M	MA20 DV M	entry/exit	entry_price	exit_price	profit	risk	R
1682	2017-11-13T15:30:00+01:00	1.14	1.26	1.14	1.24	0.850100	1.11521	1.144	11.801697	2.615341	1.209093	entry	1.200	NaN	NaN	0.060	NaN
1683	2017-11-14T15:30:00+01:00	1.28	1.32	1.08	1.19	0.863028	1.12500	1.157	12.487276	1.358449	1.247654	exit	1.200	1.19	-0.010	0.060	-0.166667
1702	2017-12-12T15:30:00+01:00	1.60	1.69	1.54	1.68	1.257448	1.59200	1.632	15.806241	0.985087	2.211793	entry	1.615	NaN	NaN	0.075	NaN
1716	2018-01-03T15:30:00+01:00	3.45	3.49	2.99	3.01	1.829600	2.57600	3.269	18.585119	8.026219	7.625960	exit	1.615	3.01	1.395	0.075	18.600000
1717	2018-01-04T15:30:00+01:00	3.01	3.10	2.41	2.51	1.859800	2.61550	3.259	19.587206	12.865098	8.229892	exit	1.615	2.51	0.895	0.075	11.933333

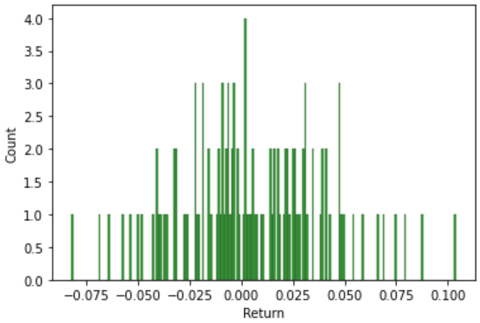
In [53]:
```
returns = combined_data
returns['Return'] = returns['close'].pct_change()
returns.head()
```

Out[53]:

	Unnamed: 0	time	open	high	low	close	MA	MA.1	MA.2	ADR	DV M	MA20 DV M	entry/exit	entry_price	exit_price	Return
0	0	2020-10-22T15:30:00+02:00	72.64	73.83	72.075	73.32	68.6322	68.1715	72.458	3.021762	16.734866	17.416925	NaN	72.9525	73.32	NaN
1	1	2020-10-23T15:30:00+02:00	73.28	73.71	72.280	72.49	68.4806	68.8100	72.667	2.995171	8.959552	17.253716	NaN	72.9950	72.49	-0.011320
2	2	2020-10-26T14:30:00+01:00	71.51	71.82	68.570	70.15	68.2830	69.2185	72.509	3.031096	15.113966	17.191543	NaN	70.1950	70.15	-0.032280
3	3	2020-10-27T14:30:00+01:00	69.71	70.11	68.950	69.50	68.0372	69.5480	72.243	2.966021	12.505249	16.696366	NaN	69.5300	69.50	-0.009266
4	4	2020-10-28T14:30:00+01:00	68.29	68.48	66.650	67.26	67.7932	69.7640	71.757	2.941496	16.116685	16.422192	NaN	67.5650	67.26	-0.032230

In [55]:
```
sns.histplot(returns['Return'],color='green',bins=200)
```

Out[55]:
```
<AxesSubplot:xlabel='Return', ylabel='Count'>
```



In [ ]: