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December 23, 2023

1 December SPY Analysis

1.0.1 2015-2023

This simple analysis is a quick and dirty example of how we can pull in the SPY ticker data to look at the closing prices over the last several years. Do we see any trends we can expect in the last week of the year? Is it time to make a move or be cautious?

[ ]:
```
import yfinance as yf
import pandas as pd
import matplotlib.pyplot as plt
from matplotlib.cm import tab20
```

[ ]:
```
sym = yf.Ticker("SPY")
```

[ ]:
```
years = range(2015, 2024)
bounds = [(str(yr)+"-12-01", str(yr)+"-12-31") for yr in years]
cols_to_drop = [
    "Open", "Dividends", "Stock Splits", "Capital Gains", "Volume"
]

dec = (sym.history(start=start, end=end) for start, end in bounds)
dec = pd.concat(dec)
dec = dec.sort_index()

dec = dec.drop(cols_to_drop, axis=1)
dec['Year'] = dec.index.year
dec['Day'] = dec.index.day

display(dec)
```

Date	High	Low	Close	Year	Day
2015-12-01 00:00:00-05:00	182.011949	180.535611	181.891068	2015	1
2015-12-02 00:00:00-05:00	182.167332	179.775843	180.034851	2015	2
2015-12-03 00:00:00-05:00	180.570132	176.771387	177.513870	2015	3
2015-12-04 00:00:00-05:00	181.278100	177.513883	180.975922	2015	4
2015-12-07 00:00:00-05:00	181.070873	178.886593	179.879456	2015	7
…	…	…	…	…	…

```
2023-12-18 00:00:00-05:00  472.980011  469.890015  471.970001  2023   18
2023-12-19 00:00:00-05:00  474.920013  472.450012  474.839996  2023   19
2023-12-20 00:00:00-05:00  475.899994  467.820007  468.260010  2023   20
2023-12-21 00:00:00-05:00  472.980011  468.839996  472.700012  2023   21
2023-12-22 00:00:00-05:00  475.380005  471.700012  473.649994  2023   22

[179 rows x 5 columns]
```

[ ]:
```python
fig, ax = plt.subplots()
for year in years:
    data = dec[dec['Year'] == year]
    ax.plot(data['Day'], data['Close'], label=year)


ax.set_xlabel('Day of December')
ax.set_ylabel('Closing Price')
ax.set_title('SPY December Closing Prices')
ax.legend(bbox_to_anchor=(1.2, 1))
#ax.legend(title='Year')

plt.show()
```