GANN_Lines_Angles

September 29, 2021

1 Gann Lines and Angles Indicator

https://www.investoo.com/indicators-gann-lines-and-angles/

[1]:
```
import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
from matplotlib.lines import Line2D
import matplotlib.lines as mlines
import matplotlib.transforms as mtransforms

import warnings
warnings.filterwarnings("ignore")

# fix_yahoo_finance is used to fetch data
import fix_yahoo_finance as yf
yf.pdr_override()
```

[2]:
```
# input
symbol = 'AAPL'
start = '2018-12-01'
end = '2019-01-01'

# Read data
df = yf.download(symbol,start,end)

# View Columns
df.head()
```

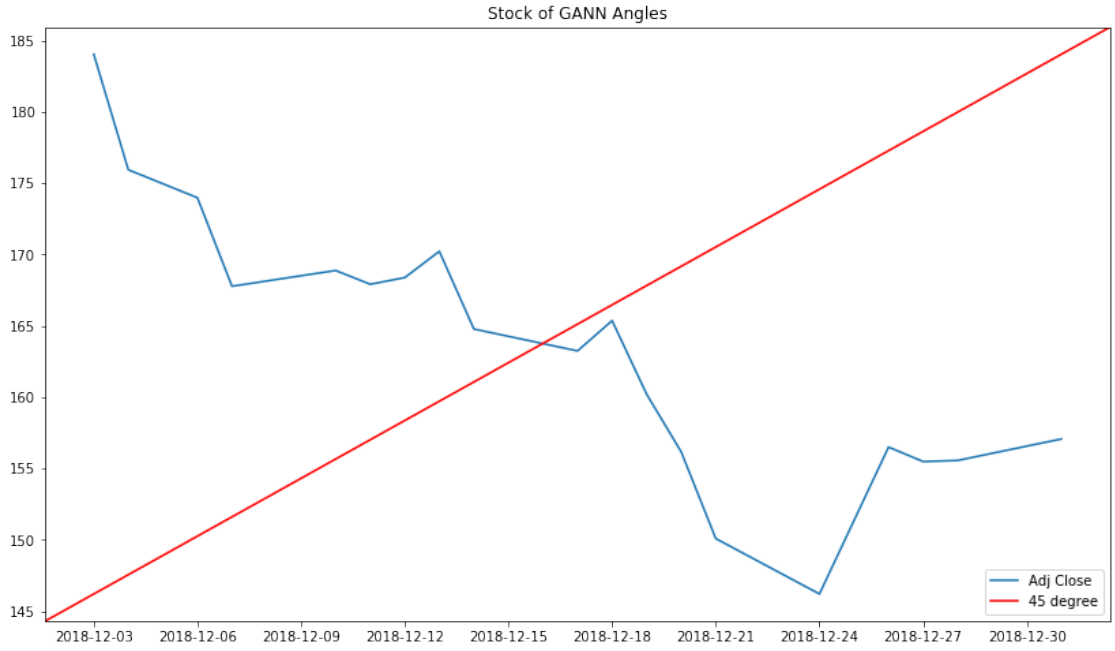
```
[**********100%**********]  1 of 1 downloaded
```

[2]:

Date	Open	High	Low	Close	Adj Close
2018-12-03	184.460007	184.940002	181.210007	184.820007	184.030731
2018-12-04	180.949997	182.389999	176.270004	176.690002	175.935455
2018-12-06	171.759995	174.779999	170.419998	174.720001	173.973862
2018-12-07	173.490005	174.490005	168.300003	168.490005	167.770477
2018-12-10	165.000000	170.089996	163.330002	169.600006	168.875732

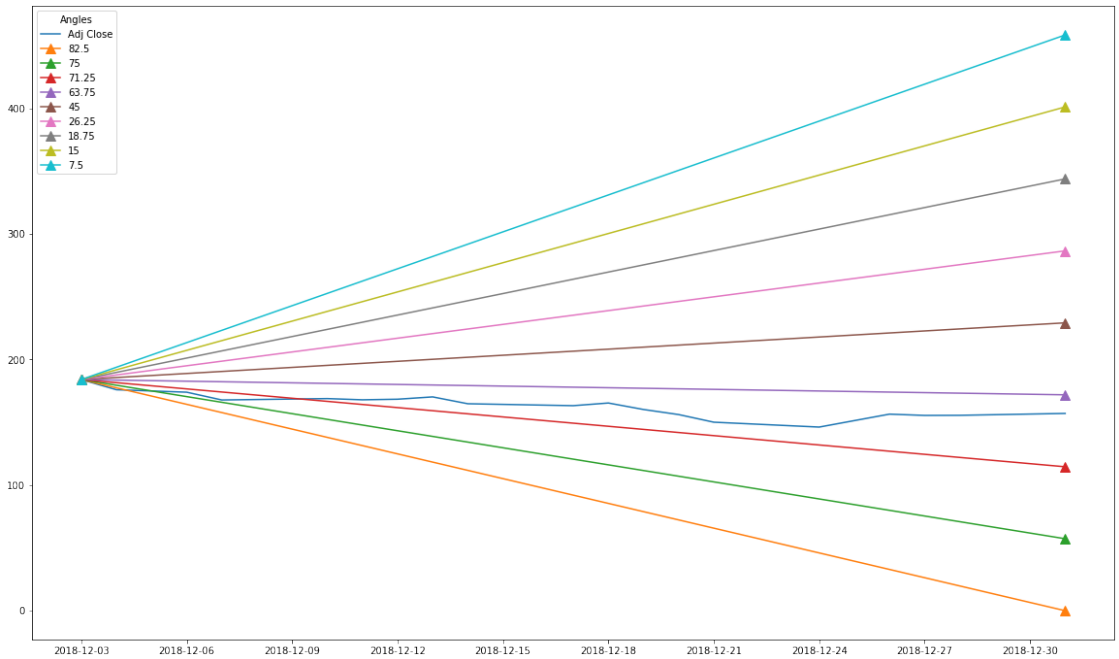
```
              Volume
Date
2018-12-03  40802500
2018-12-04  41344300
2018-12-06  43098400
2018-12-07  42281600
2018-12-10  62026000
```

[3]:
```
# Line Chart
plt.figure(figsize=(14,8))
plt.plot(df['Adj Close'])
y_lim = plt.ylim()
x_lim = plt.xlim()
plt.plot(x_lim, y_lim, 'k-', color = 'r', label='45 degree')
plt.ylim(y_lim)
plt.xlim(x_lim)
plt.title('Stock of GANN Angles')
plt.legend(loc='best')
plt.show()
```



[4]:
```
import math

angles = [82.5,75,71.25,63.75,45,26.25,18.75,15,7.5]
# radians = [0,7.5,15,18.5,26.25,45,63.75,71.25,75,82.5,90]
```

```
radians = [0.1309,0.261799,0.3228859,0.45814893,0.785398,1.1126474,1.2435471,1.
 ↪309,1.439897]
# math.degrees(angles)
fig, ax = plt.subplots(figsize=(20,12))
ax.plot(df.index, df['Adj Close'])

x_0 = 0
y_0 = 0


for i in range(len(radians)):
    ax.plot([df.index[0], df.index[-1]], [df['Adj Close'][0], math.degrees(math.
 ↪radians(i)*(180/math.pi))], marker='^', markersize=10, label=angles[i])
    #ax.plot([df.index[0], df.index[-1]], [df['Adj Close'][0], math.
 ↪degrees(i)], marker='^', markersize=10, label=angles[i])

plt.legend(title="Angles")
plt.show()
```



1.1 Candlestick with GANN Lines Angles

[5]:
```
from matplotlib import dates as mdates
import datetime as dt
```

```
df['VolumePositive'] = df['Open'] < df['Adj Close']
dfc = df.dropna()
dfc = df.reset_index()
dfc['Date'] = mdates.date2num(dfc['Date'].astype(dt.date))
dfc.head()
```

[5]:

	Date	Open	High	Low	Close	Adj Close	Volume	VolumePositive
0	737031.0	184.460007	184.940002	181.210007	184.820007	184.030731	40802500	False
1	737032.0	180.949997	182.389999	176.270004	176.690002	175.935455	41344300	False
2	737034.0	171.759995	174.779999	170.419998	174.720001	173.973862	43098400	True
3	737035.0	173.490005	174.490005	168.300003	168.490005	167.770477	42281600	False
4	737038.0	165.000000	170.089996	163.330002	169.600006	168.875732	62026000	True

[6]:
```
from mpl_finance import candlestick_ohlc

# Plot Example Angle line
angles = [82.5,75,71.25,63.75,45,26.25,18.75,15,7.5]

# plot the points
fig = plt.figure(figsize=(18,8))
ax = plt.subplot(111)

candlestick_ohlc(ax,dfc.values, width=0.5, colorup='g', colordown='r', alpha=1.
 ↪0)
ax.xaxis_date()
ax.xaxis.set_major_formatter(mdates.DateFormatter('%d-%m-%Y'))
x_0 = 0
y_0 = 0


for i in range(len(angles)):
    ax.plot([df.index[0], df.index[-1]], [df['Adj Close'][0], math.degrees(math.
 ↪radians(i)*(180/math.pi))], marker='^', markersize=10, label=angles[i])

axv = ax.twinx()
colors = df.VolumePositive.map({True: 'g', False: 'r'})
axv.bar(dfc.Date, dfc['Volume'], color=colors, alpha=0.4)
axv.axes.yaxis.set_ticklabels([])
axv.set_ylim(0, 3*dfc.Volume.max())
ax.grid(True)
```

```
ax.set_title('Stock Closing Price')
ax.set_ylabel('Price')
ax.set_xlabel('Date')
ax.legend(loc='best')
```

[6]: <matplotlib.legend.Legend at 0x2205e178cc0>