Day15

March 11, 2021

0.1 Day 15 - Relative Strength Index

source : https://www.investopedia.com/terms/r/rsi.asp

```python
[5]: import pandas as pd
     import numpy as np
     import yfinance as yf

     from plotly.subplots import make_subplots
     import plotly.graph_objects as go
```

```python
[18]: """
          :param ticker: closing prices
          :param start: history start date
          :param end: history end date
          :return: stock's historical data
      """
      def get_data(ticker,start="2020-03-25"):

          return yf.download(ticker, start)


      """
          :param close: closing prices
          :param length: moving average length
      """
      def get_RSI(close,length=20):

          # check if the difference is positive or negative
          delta = close.diff(1).dropna()

          positive = delta.copy()
          negative = delta.copy()

          positive[positive < 0] = 0
          negative[negative > 0] = 0

          avg_gain = positive.rolling(window=length).mean()
```

```
        avg_loss = abs(negative.rolling(window=length).mean())

        rsi = 100 - (100/(1 + avg_gain/avg_loss))

        return rsi
```

[19]:
```
stock_history  = get_data('TWTR','2018-03-06')
stock_close = stock_history['Adj Close']

rsi = get_RSI(stock_close,14)
```

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

[43]:
```
fig = make_subplots(rows=2, cols=1, subplot_titles=("Stock price", "RSI"))

fig.add_trace(go.Scatter(x=stock_close.index, y=stock_close, name='Close'),␣
 ↪row=1, col=1)

fig.add_trace(go.Scatter(x=rsi.index, y=rsi,␣
 ↪name='RSI',line_color="black"),row=2, col=1)
fig.add_hline(y=30,row=2, col=1, line_color="green")
fig.add_hline(y=70,row=2, col=1, line_color="red")


fig.update_layout(title_text="Twitter (TWTR) - RSI",height=700)
fig.show()
```