RSI2

September 29, 2021

1 RSI(2)

https://stockcharts.com/school/doku.php?id=chart_school:trading_strategies:rsi2

```python
[1]: import numpy as np
     import pandas as pd
     import matplotlib.pyplot as plt

     import warnings
     warnings.filterwarnings("ignore")

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

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

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

     # View Columns
     df.head()
```

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

```
[2]:                  Open        High         Low       Close   Adj Close  \
     Date
     2018-01-02  170.160004  172.300003  169.259995  172.259995  168.987320
     2018-01-03  172.529999  174.550003  171.960007  172.229996  168.957886
     2018-01-04  172.539993  173.470001  172.080002  173.029999  169.742706
     2018-01-05  173.440002  175.369995  173.050003  175.000000  171.675278
     2018-01-08  174.350006  175.610001  173.929993  174.350006  171.037628

                    Volume
     Date
```

```
2018-01-02   25555900
2018-01-03   29517900
2018-01-04   22434600
2018-01-05   23660000
2018-01-08   20567800
```

```
[3]: # Simple way to do RSI
     import talib as ta

     df['MA5'] = df['Adj Close'].rolling(5).mean()
     df['MA200'] = df['Adj Close'].rolling(200).mean()
     df['RSI2'] = ta.RSI(df['Adj Close'], timeperiod=2)
     df.head()
```

```
[3]:                    Open        High         Low       Close    Adj Close  \
     Date
     2018-01-02   170.160004  172.300003  169.259995  172.259995   168.987320
     2018-01-03   172.529999  174.550003  171.960007  172.229996   168.957886
     2018-01-04   172.539993  173.470001  172.080002  173.029999   169.742706
     2018-01-05   173.440002  175.369995  173.050003  175.000000   171.675278
     2018-01-08   174.350006  175.610001  173.929993  174.350006   171.037628

                    Volume         MA5  MA200        RSI2
     Date
     2018-01-02   25555900         NaN    NaN         NaN
     2018-01-03   29517900         NaN    NaN         NaN
     2018-01-04   22434600         NaN    NaN   96.385157
     2018-01-05   23660000         NaN    NaN   99.370987
     2018-01-08   20567800  170.080164    NaN   64.314873
```

```
[4]: fig = plt.figure(figsize=(14,10))
     ax1 = plt.subplot(2, 1, 1)
     ax1.plot(df['Adj Close'])
     ax1.plot(df['MA5'], label='MA5')
     ax1.plot(df['MA200'], label='MA200')
     ax1.set_title('Stock '+ symbol +' Closing Price')
     ax1.set_ylabel('Price')
     ax1.legend(loc='best')

     ax2 = plt.subplot(2, 1, 2)
     ax2.plot(df['RSI2'], label='Relative Strengths Index')
     ax2.text(s='Overbought', x=df.RSI2.index[30], y=70, fontsize=14)
     ax2.text(s='Oversold', x=df.RSI2.index[30], y=30, fontsize=14)
     ax2.axhline(y=70, color='red')
     ax2.axhline(y=30, color='red')
     ax2.fill_between(df.index, y1=30, y2=70, color='#adccff', alpha='0.3')
     ax2.axhline(y=95, color='darkblue')
```

```
ax2.axhline(y=5, color='darkblue')
ax2.grid()
ax2.set_ylabel('RSI2')
ax2.set_xlabel('Date')
```

[4]: Text(0.5,0,'Date')
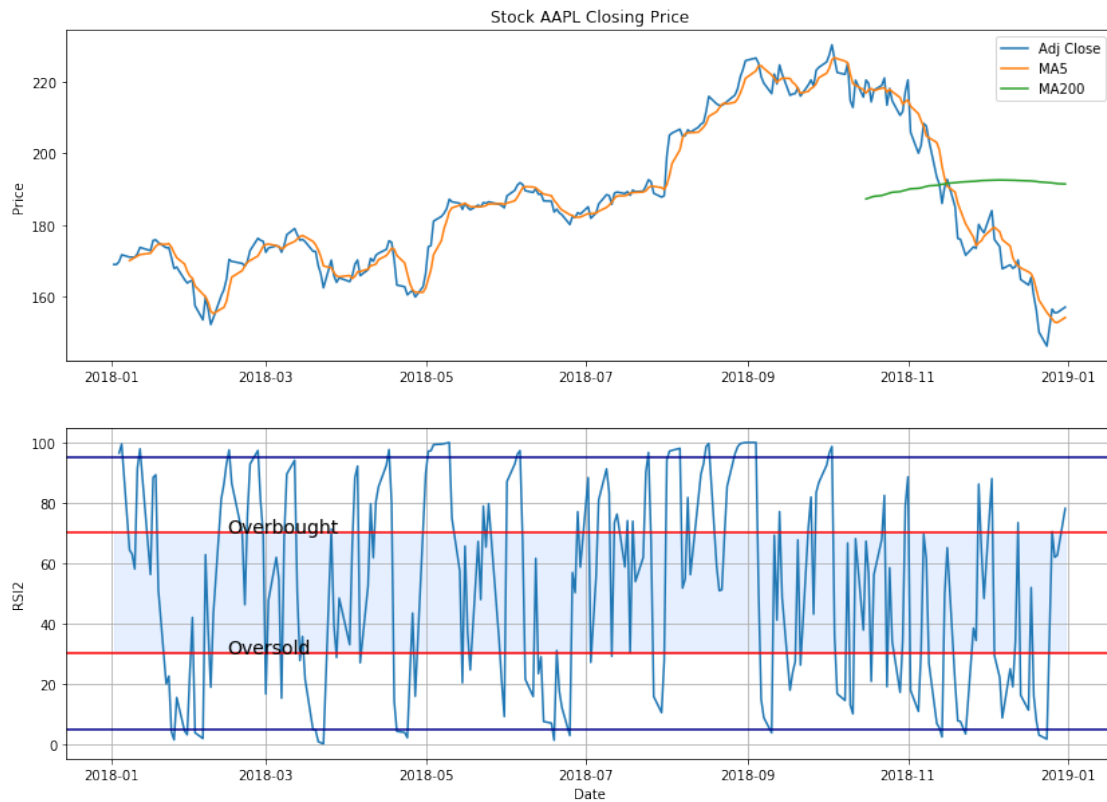
1.1 Candlestick with RSI2 Strategy

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

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

[5]:
```
        Date        Open         High          Low        Close    Adj Close  \
0   736696.0   170.160004   172.300003   169.259995   172.259995   168.987320
```

```
1  736697.0  172.529999  174.550003  171.960007  172.229996  168.957886
2  736698.0  172.539993  173.470001  172.080002  173.029999  169.742706
3  736699.0  173.440002  175.369995  173.050003  175.000000  171.675278
4  736702.0  174.350006  175.610001  173.929993  174.350006  171.037628

      Volume         MA5  MA200       RSI2  VolumePositive
0  25555900         NaN    NaN        NaN           False
1  29517900         NaN    NaN        NaN           False
2  22434600         NaN    NaN  96.385157           False
3  23660000         NaN    NaN  99.370987           False
4  20567800  170.080164    NaN  64.314873           False
```

[6]:
```python
from mpl_finance import candlestick_ohlc

fig = plt.figure(figsize=(14,10))
ax1 = plt.subplot(2, 1, 1)
ax1.plot(df['MA5'], label='MA5')
ax1.plot(df['MA200'], label='MA200')
candlestick_ohlc(ax1,dfc.values, width=0.5, colorup='g', colordown='r', alpha=1.
 ↪0)
ax1.xaxis_date()
ax1.xaxis.set_major_formatter(mdates.DateFormatter('%d-%m-%Y'))
ax1.grid(True, which='both')
ax1.minorticks_on()
ax1v = ax1.twinx()
colors = dfc.VolumePositive.map({True: 'g', False: 'r'})
ax1v.bar(dfc.Date, dfc['Volume'], color=colors, alpha=0.4)
ax1v.axes.yaxis.set_ticklabels([])
ax1v.set_ylim(0, 3*df.Volume.max())
ax1.set_title('Stock '+ symbol +' Closing Price')
ax1.set_ylabel('Price')
ax1.legend(loc='best')

ax2 = plt.subplot(2, 1, 2)
ax2.plot(df['RSI2'], label='Relative Strengths Index')
ax2.text(s='Overbought', x=df.RSI2.index[30], y=70, fontsize=14)
ax2.text(s='Oversold', x=df.RSI2.index[30], y=30, fontsize=14)
ax2.axhline(y=70, color='red')
ax2.axhline(y=30, color='red')
ax2.fill_between(dfc.Date, y1=30, y2=70, color='#adccff', alpha='0.3')
ax2.axhline(y=95, color='darkblue')
ax2.axhline(y=5, color='darkblue')
ax2.grid()
ax2.set_ylabel('RSI2')
ax2.set_xlabel('Date')
```

[6]: Text(0.5,0,'Date')

Stock AAPL Closing Price