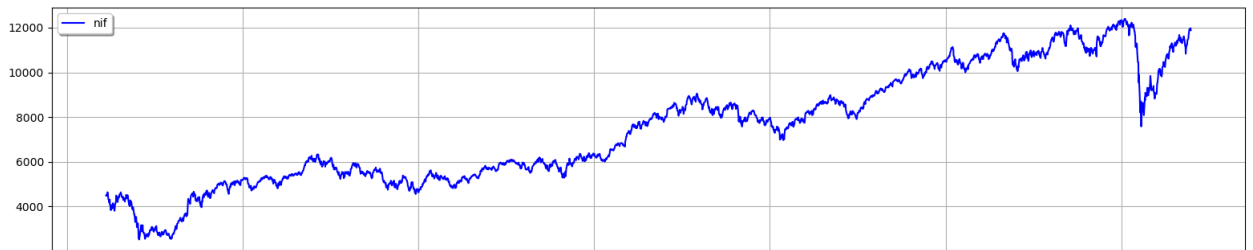


NIFTY BACKTESTING

Data used:

Nifty 50 End of day (EOD) from 11-06-2008 to 15-10-2020,
Where the instrument on 11-06-2008 opened at 4475.00 and
on 15-06-2020 closed at 11885.



Manually looking at the chart, over a long period of time the instrument showed a clear bull run.

- **Strategy_nifty_bbrsi.py**

The strategy follows 2 basic technical indicators,

1. Bollinger bands

Bollinger bands with a period of 20 and 2 standard deviations.

2. RSI

Relative strength index with 15 as period length.

The strategy attempts to predict when the instrument is in an oversold state; it focuses on entering the trade when the

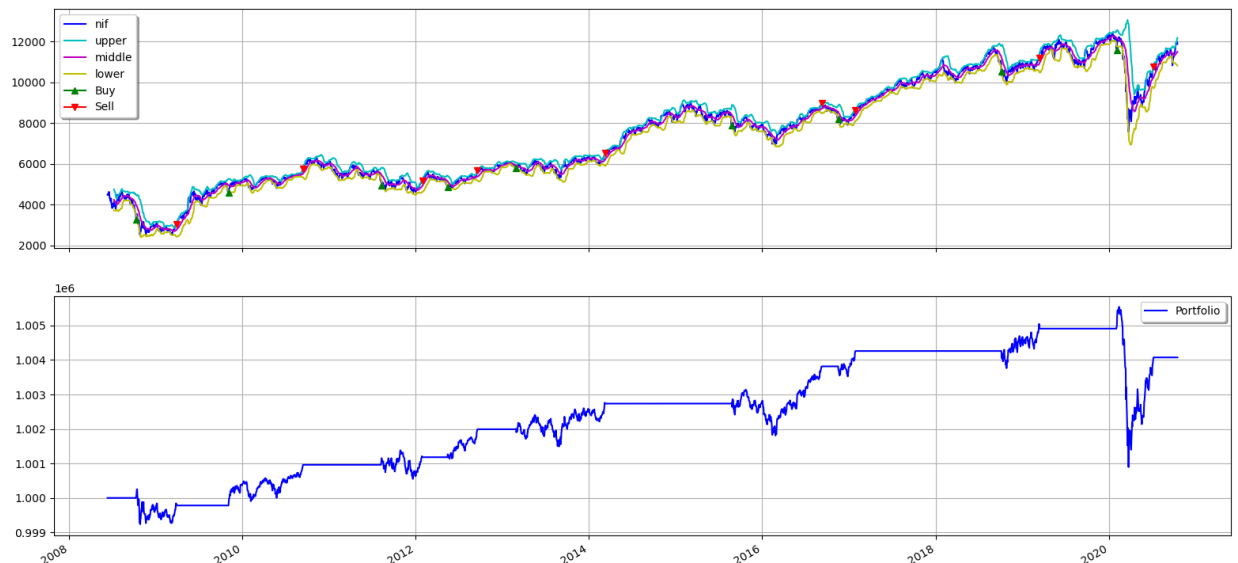
instrument is undervalued over a small timeframe. We buy when the RSI < 30 and price hits the lower band.

Backtest Results:

```
Total trades: 10
Avg. profit: $379
Profits std. dev.: $511
Max. profit: $910
Min. profit: $-836

Profitable trades: 8
Avg. profit: $606
Profits std. dev.: $213
Max. profit: $910
Min. profit: $237

Unprofitable trades: 2
Avg. loss: $-528
Losses std. dev.: $309
Max. loss: $-836
Min. loss: $-219
```



Run `strategy_nifty_bbrsi.py` to get the above output.

- **Strategy_nifty_vwapmacd.py**

The strategy follows 2 basic technical indicators,

1. VWAP (Volume weighted average price)

Volume weighted average price with a period of 20.

2. MACD (Momentum average convergence divergence)

MACD with Fast moving avg with period 12, slow moving average period as 26 and signal with period 9.

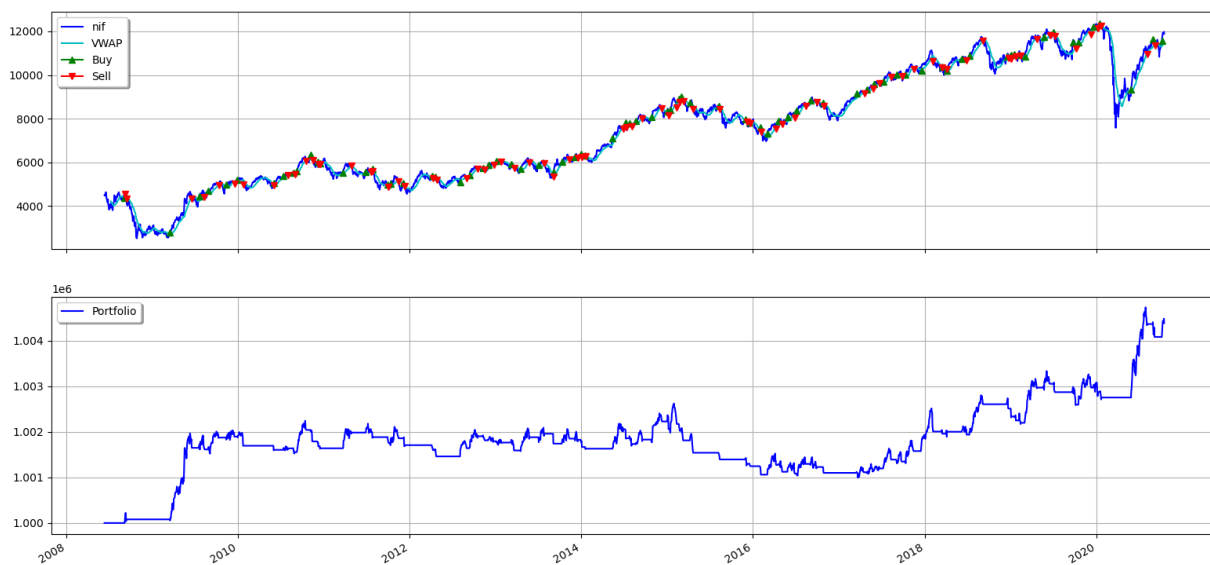
The strategy attempts to predict the ongoing trend of the instrument and enters the position when it predicts the ongoing trend is likely to be followed. The algorithm goes long when current price crosses VWAP and MACD line gives positive crossover with signal line.

Backtest Results:

```
Total trades: 79
Avg. profit: $52
Profits std. dev.: $326
Max. profit: $1612
Min. profit: $-282

Profitable trades: 32
Avg. profit: $310
Profits std. dev.: $379
Max. profit: $1612
Min. profit: $11

Unprofitable trades: 47
Avg. loss: $-124
Losses std. dev.: $70
Max. loss: $-282
Min. loss: $-20
```



Run strategy_nifty_vwapmacd.py to get the above output.