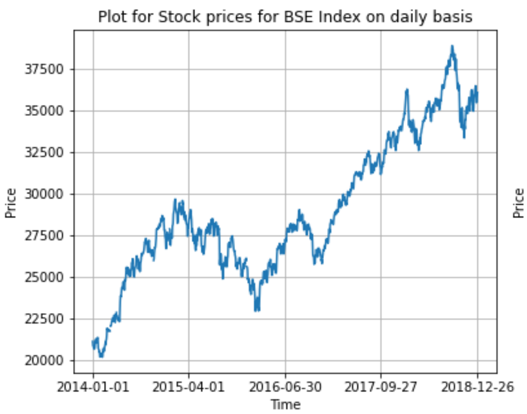
MA 374 – Financial Engineering Lab

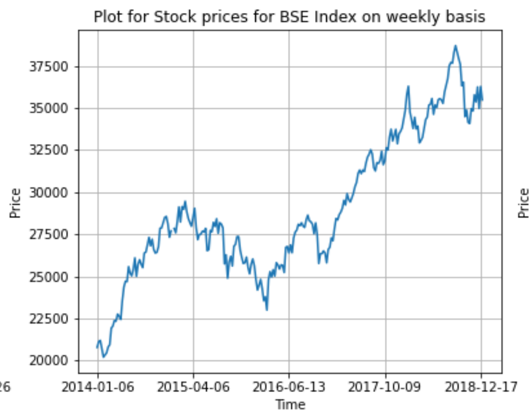
Lab – 6

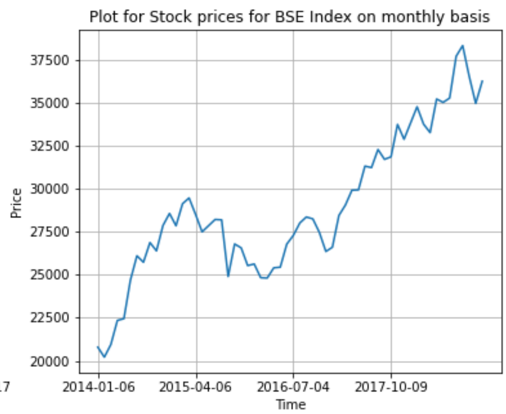
Name - Vishisht Priyadarshi **Roll No** - 180123053

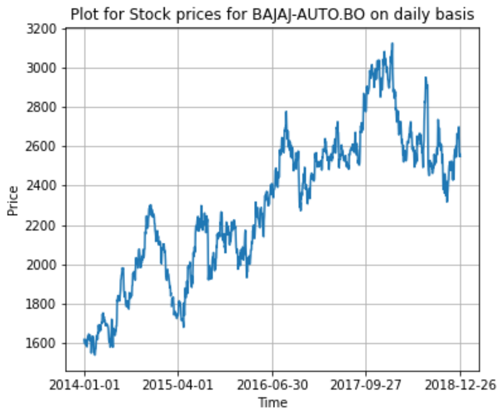
1 QUESTION - 1:

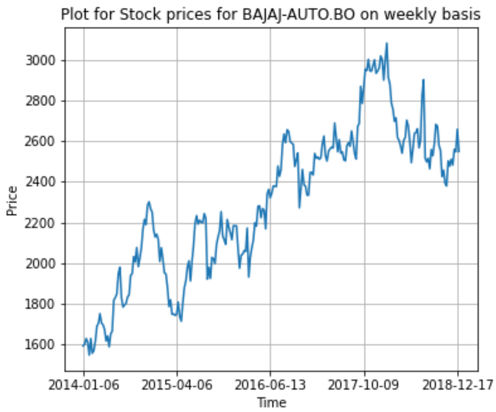
- The plot for the prices for the data in bsedata1 are:

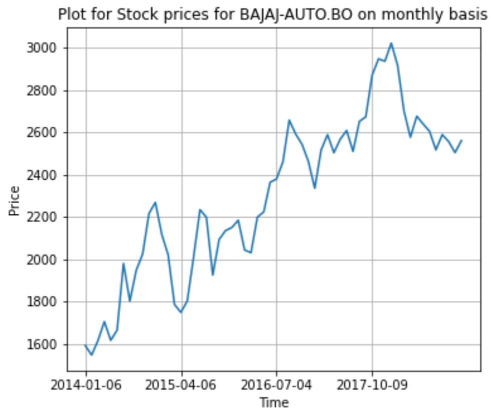


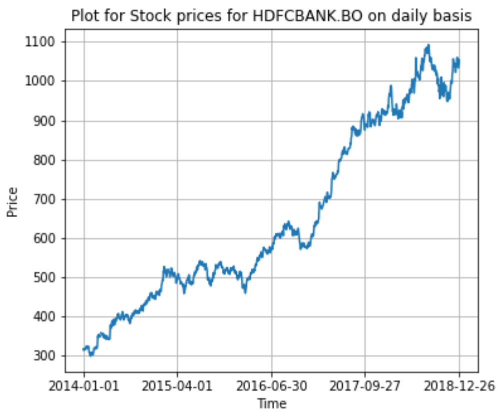


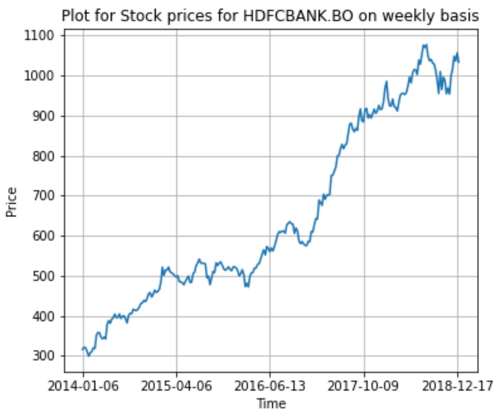


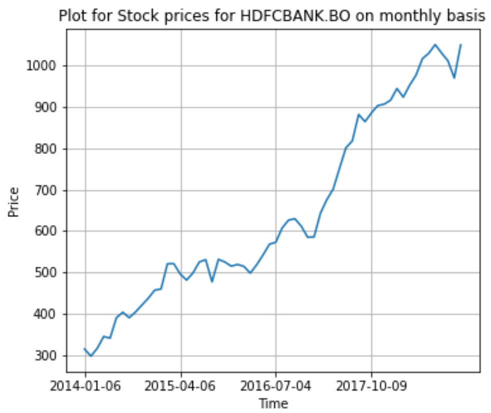


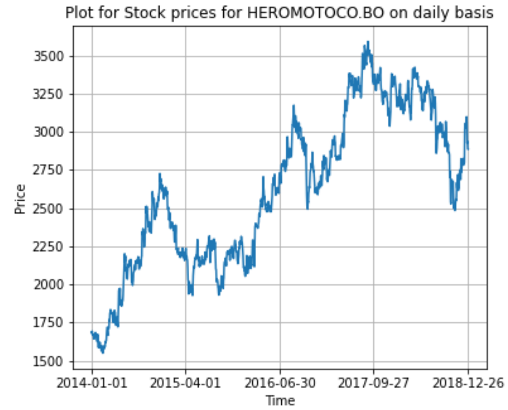


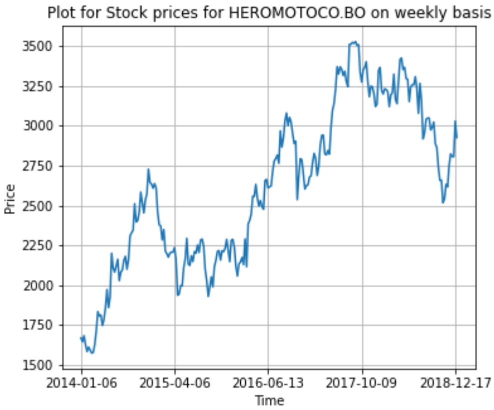


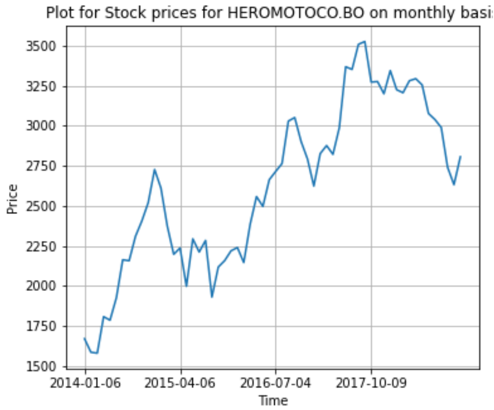


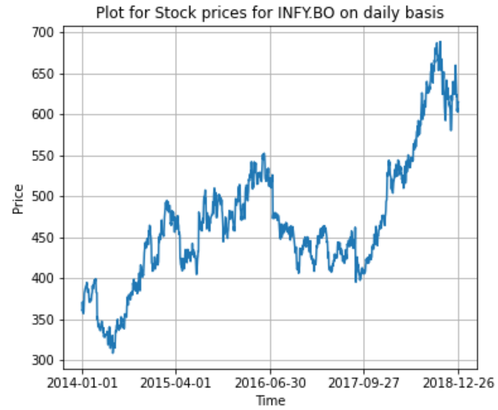


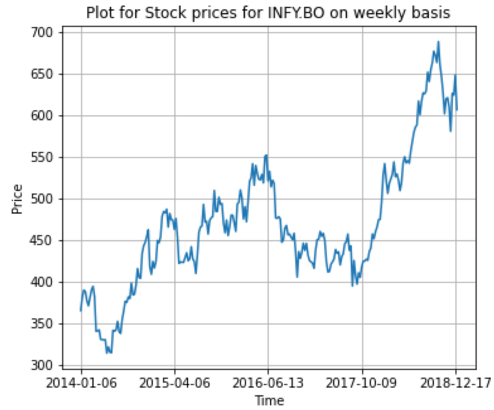


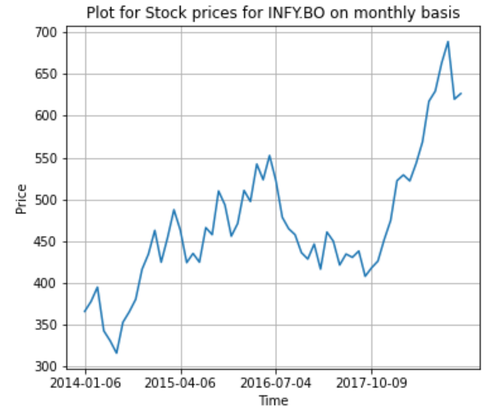

Plot for Stock prices for HEROMOTOCO.BO on daily basis
Price
Time

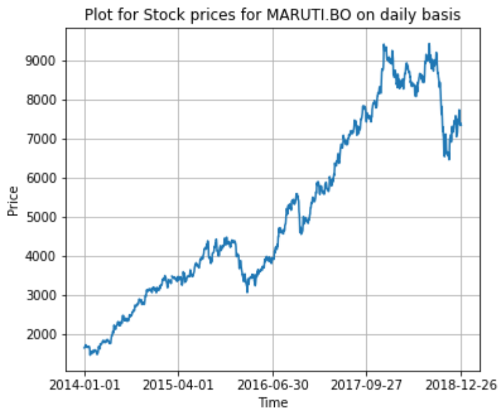

Plot for Stock prices for HEROMOTOCO.BO on weekly basis
Price
Time

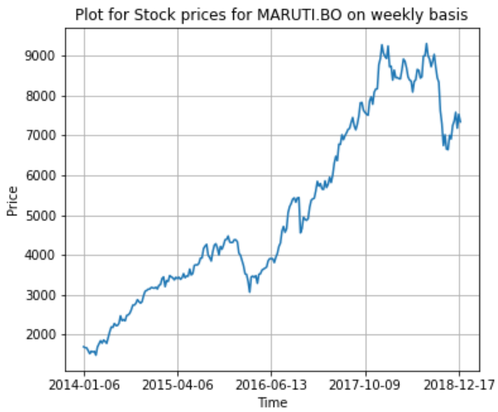

Plot for Stock prices for HEROMOTOCO.BO on monthly basi
Price
Time

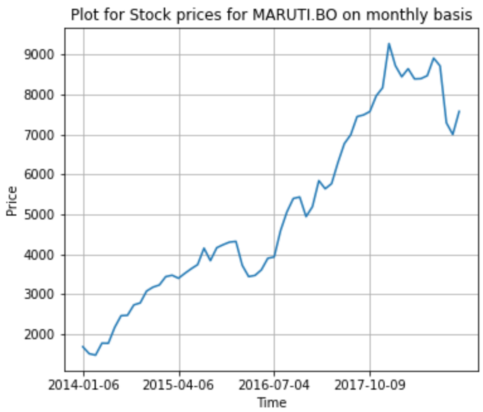

Plot for Stock prices for INFY.BO on daily basis
Price
Time

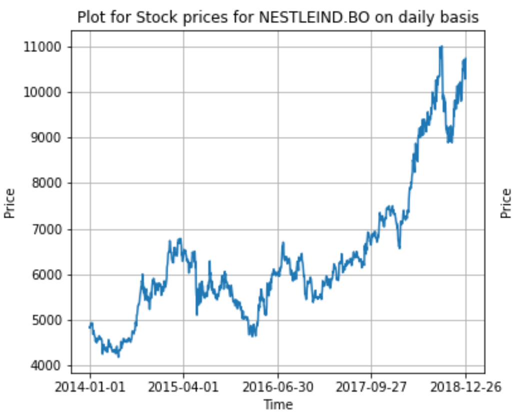

Plot for Stock prices for INFY.BO on weekly basis
Price
Time


Plot for Stock prices for INFY.BO on monthly basis
Price
Time

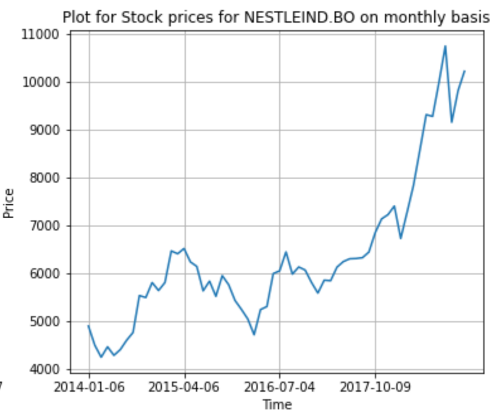

Plot for Stock prices for MARUTI.BO on daily basis
Price
Time

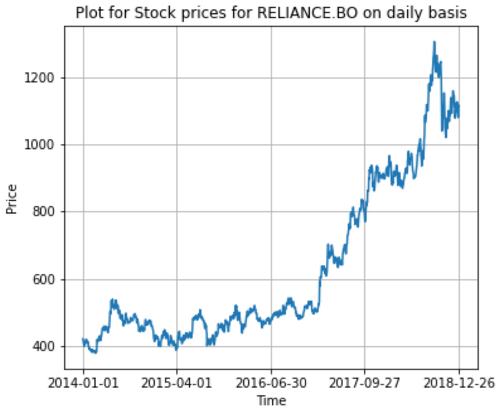

Plot for Stock prices for MARUTI.BO on weekly basis
Price
Time

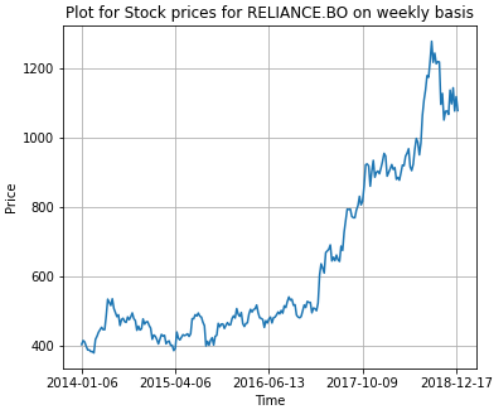

Plot for Stock prices for MARUTI.BO on monthly basis
Price
Time

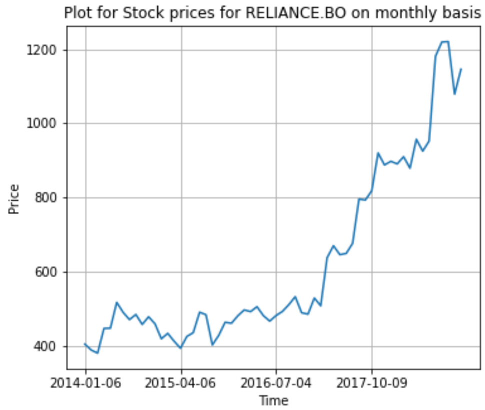

Plot for Stock prices for NESTLEIND.BO on daily basis
Price
Time

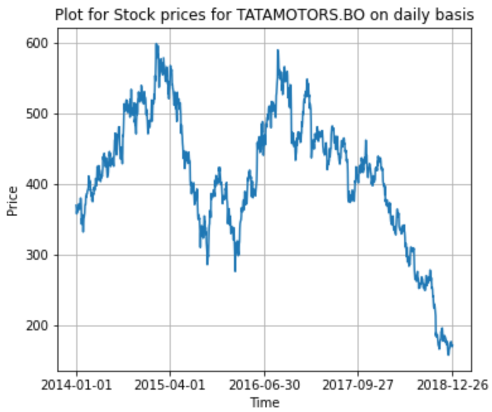

Plot for Stock prices for NESTLEIND.BO on weekly basis
Price
Time

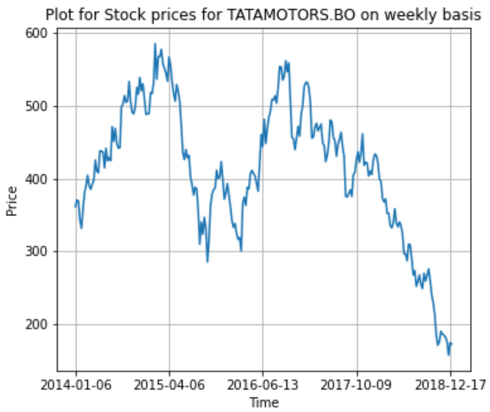

Plot for Stock prices for NESTLEIND.BO on monthly basis
Price
Time

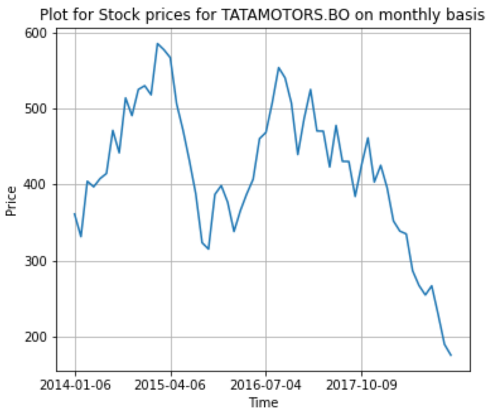

Plot for Stock prices for RELIANCE.BO on daily basis
1200
1000
800
600
400
Price
2014-01-01
2015-04-01
2016-06-30
2017-09-27
2018-12-26
Time

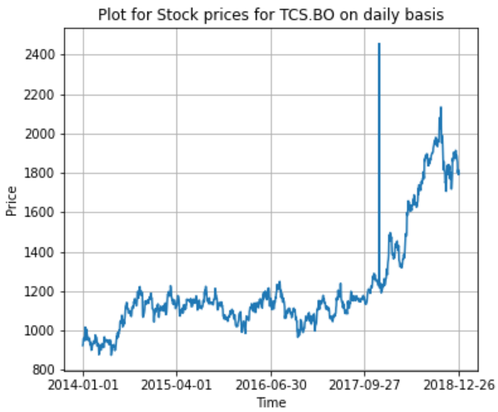

Plot for Stock prices for RELIANCE.BO on weekly basis
1200
1000
800
600
400
Price
2014-01-06
2015-04-06
2016-06-13
2017-10-09
2018-12-17
Time


Plot for Stock prices for RELIANCE.BO on monthly basis
1200
1000
800
600
400
Price
2014-01-06
2015-04-06
2016-07-04
2017-10-09
Time

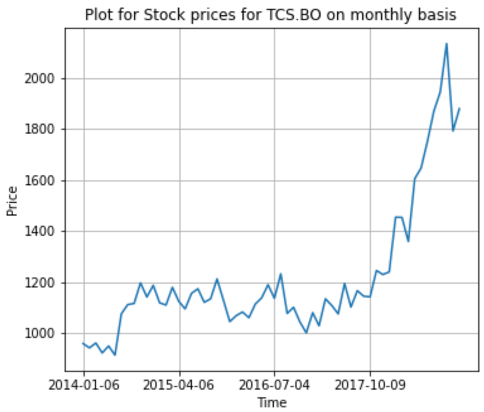

Plot for Stock prices for TATAMOTORS.BO on daily basis
600
500
400
300
200
Price
2014-01-01
2015-04-01
2016-06-30
2017-09-27
2018-12-26
Time

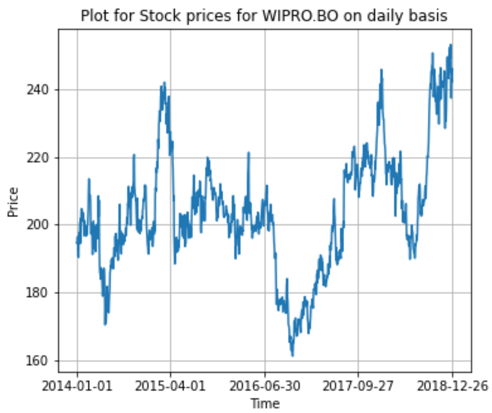

Plot for Stock prices for TATAMOTORS.BO on weekly basis
600
500
400
300
200
Price
2014-01-06
2015-04-06
2016-06-13
2017-10-09
2018-12-17
Time

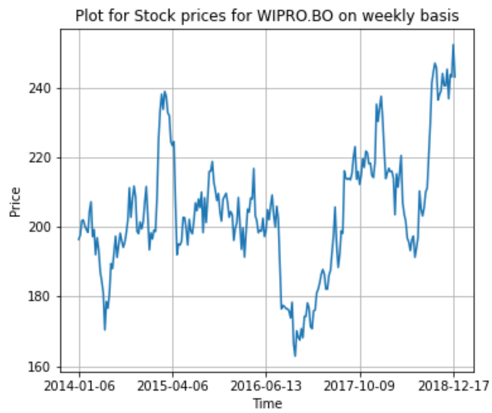

Plot for Stock prices for TATAMOTORS.BO on monthly basis
600
500
400
300
200
Price
2014-01-06
2015-04-06
2016-07-04
2017-10-09
Time

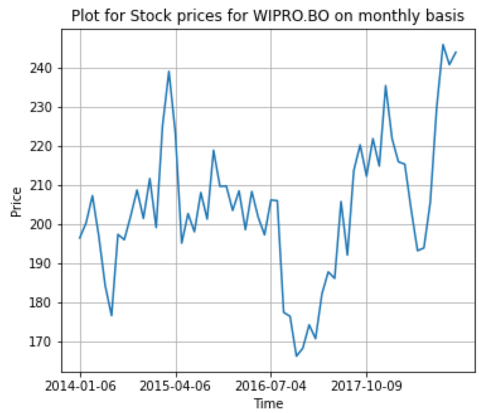

Plot for Stock prices for TCS.BO on daily basis
2400
2200
2000
1800
1600
1400
1200
1000
800
Price
2014-01-01
2015-04-01
2016-06-30
2017-09-27
2018-12-26
Time


Plot for Stock prices for TCS.BO on weekly basis
2000
1800
1600
1400
1200
1000
Price
2014-01-06
2015-04-06
2016-06-13
2017-10-09
2018-12-17
Time

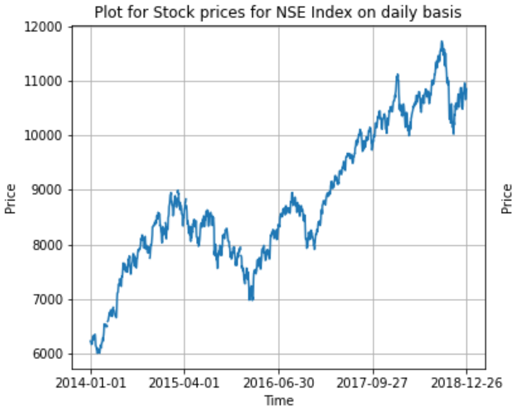

Plot for Stock prices for TCS.BO on monthly basis
2000
1800
1600
1400
1200
1000
Price
2014-01-06
2015-04-06
2016-07-04
2017-10-09
Time

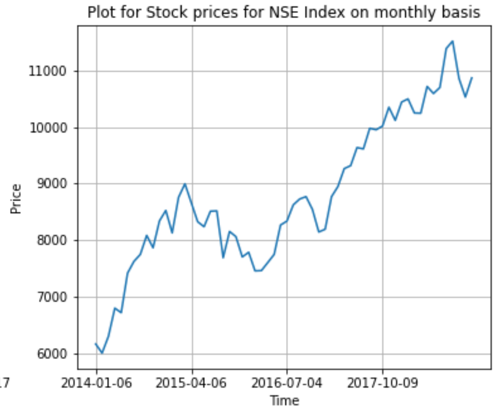

Plot for Stock prices for WIPRO.BO on daily basis
240
220
200
180
160
Price
2014-01-01
2015-04-01
2016-06-30
2017-09-27
2018-12-26
Time

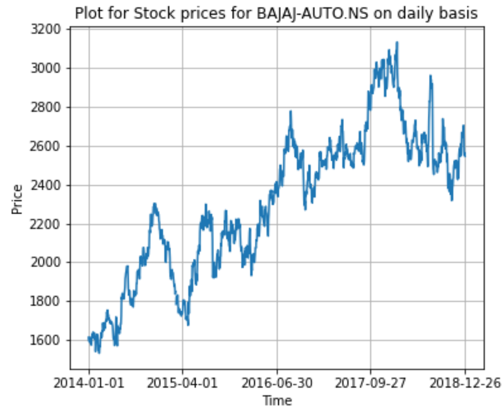

Plot for Stock prices for WIPRO.BO on weekly basis
240
220
200
180
160
Price
2014-01-06
2015-04-06
2016-06-13
2017-10-09
2018-12-17
Time

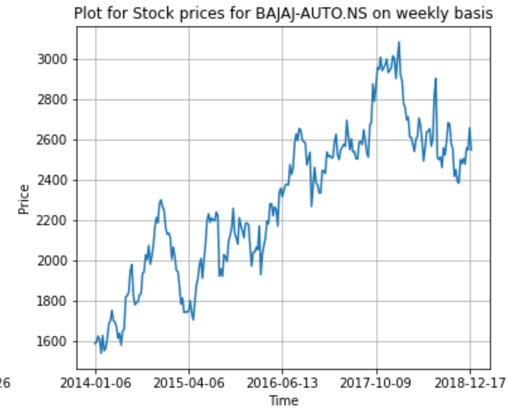

Plot for Stock prices for WIPRO.BO on monthly basis
240
230
220
210
200
190
180
170
Price
2014-01-06
2015-04-06
2016-07-04
2017-10-09
Time

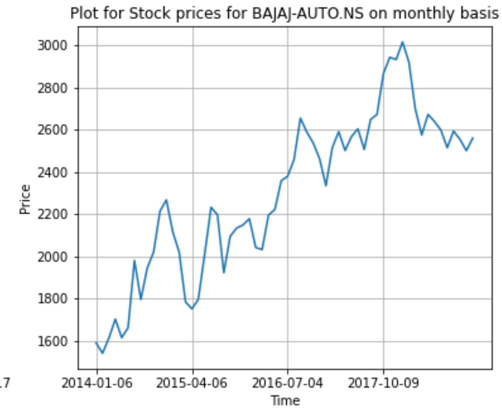
- The plot for the prices for the data in nsedata1 are:

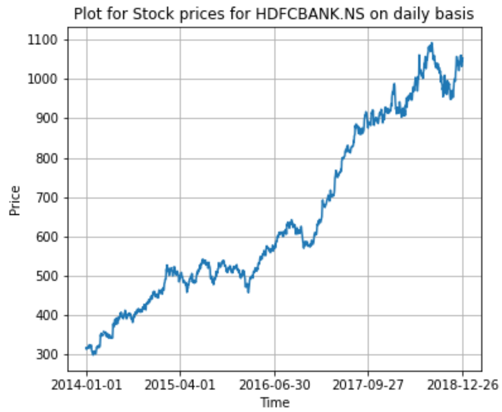


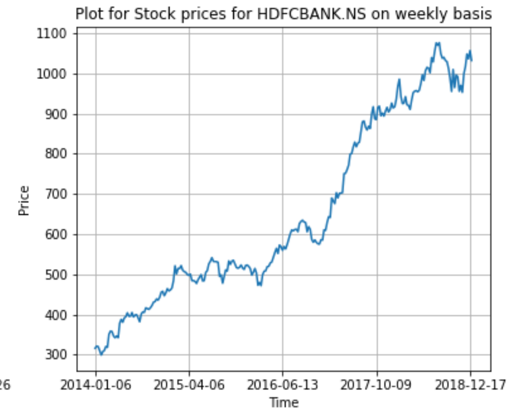


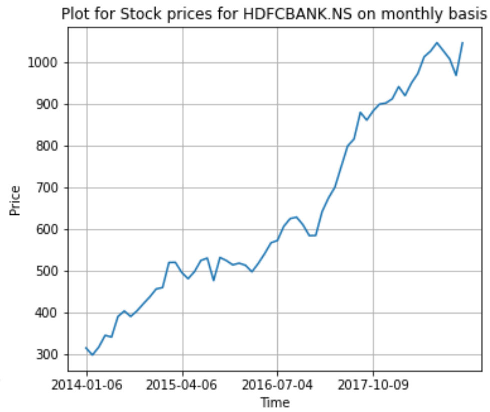


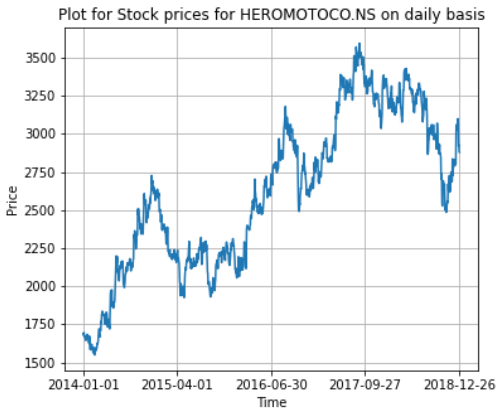


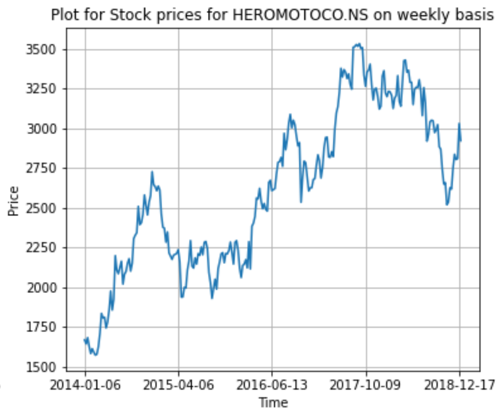


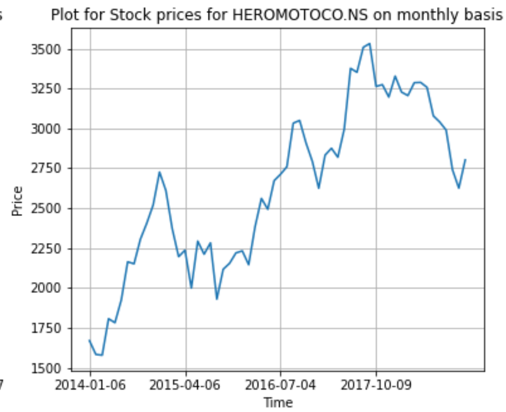


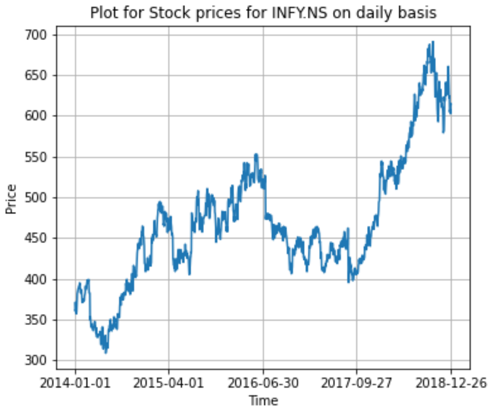


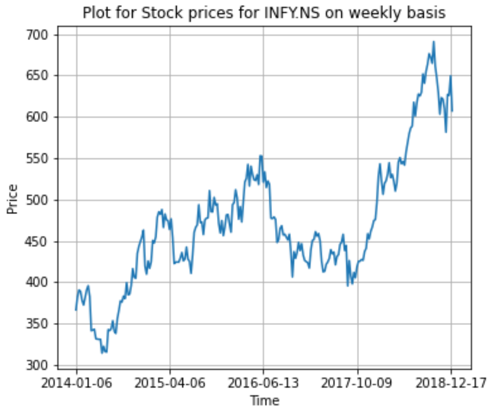


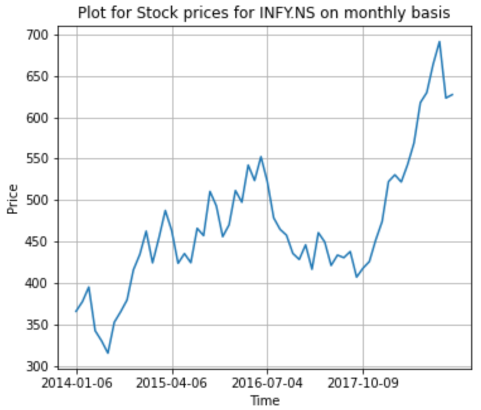


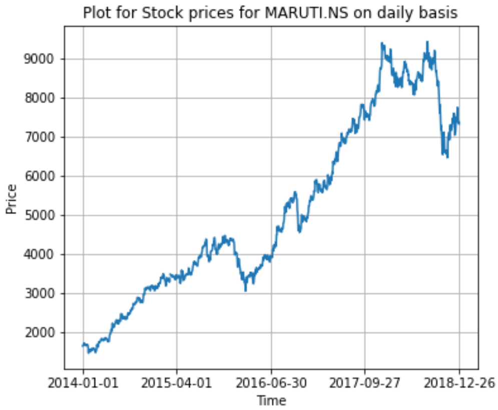


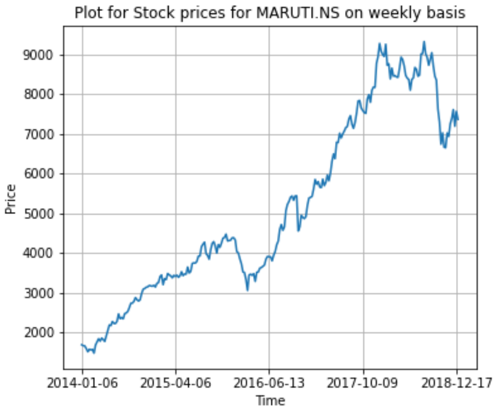


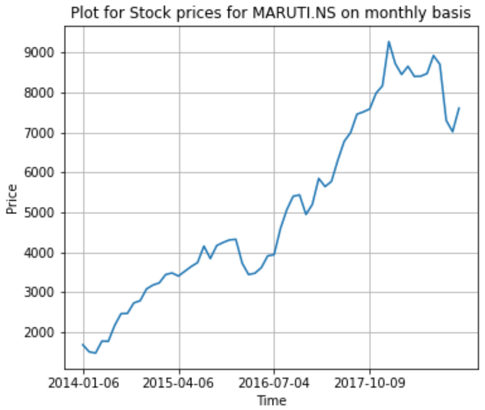

Plot for Stock prices for INFY.NS on daily basis
Price
Time
2014-01-01 2015-04-01 2016-06-30 2017-09-27 2018-12-26

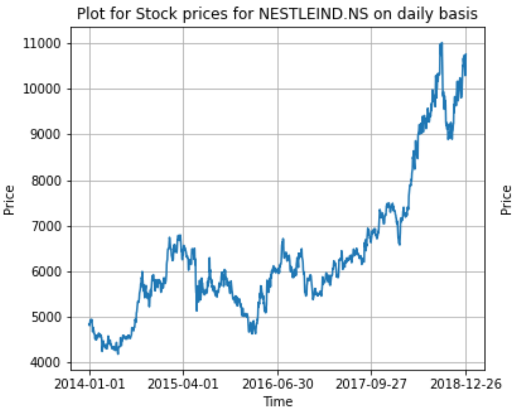

Plot for Stock prices for INFY.NS on weekly basis
Price
Time
2014-01-06 2015-04-06 2016-06-13 2017-10-09 2018-12-17


Plot for Stock prices for INFY.NS on monthly basis
Price
Time
2014-01-06 2015-04-06 2016-07-04 2017-10-09

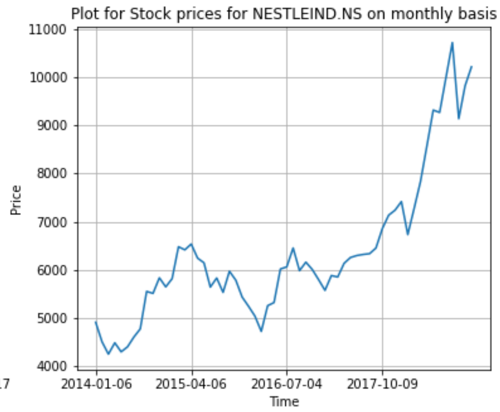

Plot for Stock prices for MARUTI.NS on daily basis
Price
Time
2014-01-01 2015-04-01 2016-06-30 2017-09-27 2018-12-26

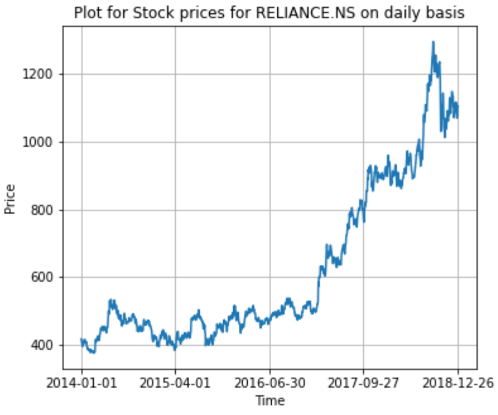

Plot for Stock prices for MARUTI.NS on weekly basis
Price
Time
2014-01-06 2015-04-06 2016-06-13 2017-10-09 2018-12-17

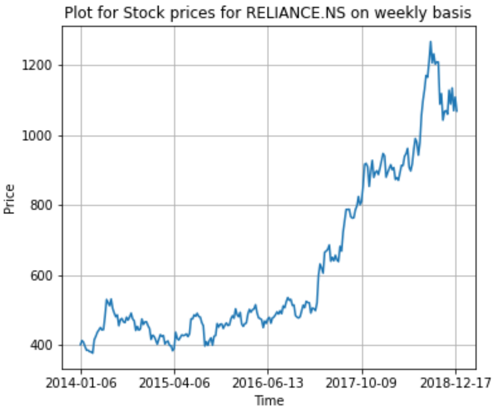

Plot for Stock prices for MARUTI.NS on monthly basis
Price
Time
2014-01-06 2015-04-06 2016-07-04 2017-10-09

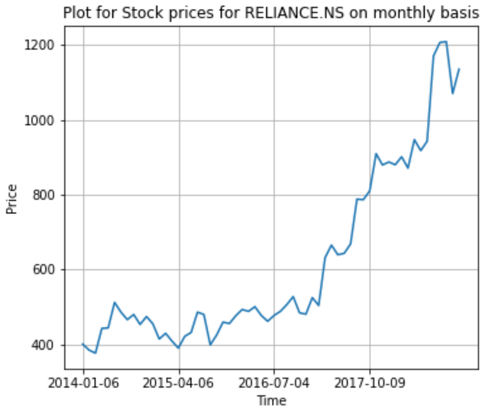

Plot for Stock prices for NESTLEIND.NS on daily basis
Price
Time
2014-01-01 2015-04-01 2016-06-30 2017-09-27 2018-12-26

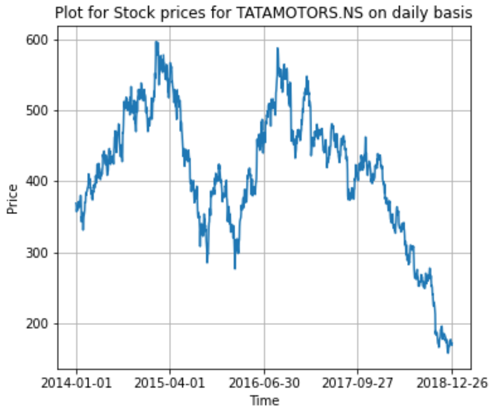

Plot for Stock prices for NESTLEIND.NS on weekly basis
Price
Time
2014-01-06 2015-04-06 2016-06-13 2017-10-09 2018-12-17

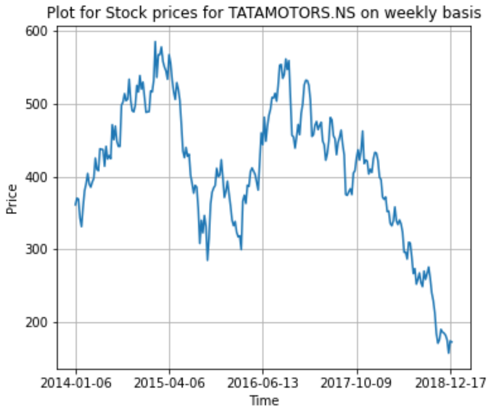

Plot for Stock prices for NESTLEIND.NS on monthly basis
Price
Time
2014-01-06 2015-04-06 2016-07-04 2017-10-09

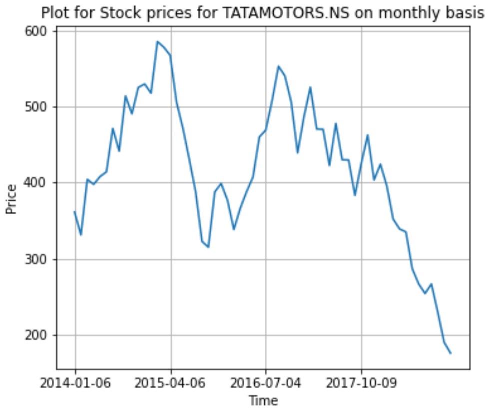

Plot for Stock prices for RELIANCE.NS on daily basis
Price
Time
2014-01-01 2015-04-01 2016-06-30 2017-09-27 2018-12-26

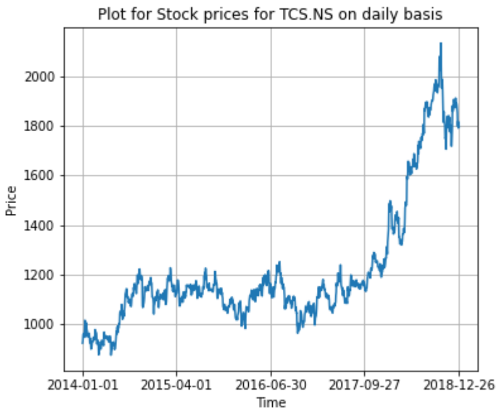

Plot for Stock prices for RELIANCE.NS on weekly basis
Price
Time
2014-01-06 2015-04-06 2016-06-13 2017-10-09 2018-12-17

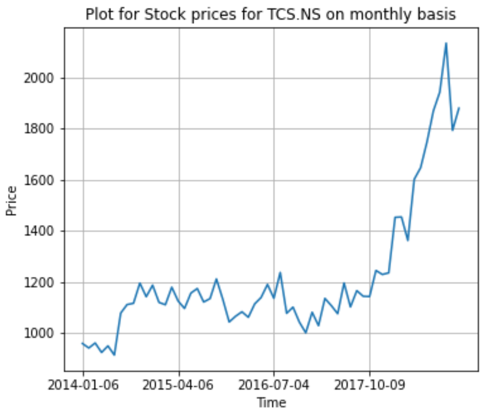

Plot for Stock prices for RELIANCE.NS on monthly basis
Price
Time
2014-01-06 2015-04-06 2016-07-04 2017-10-09

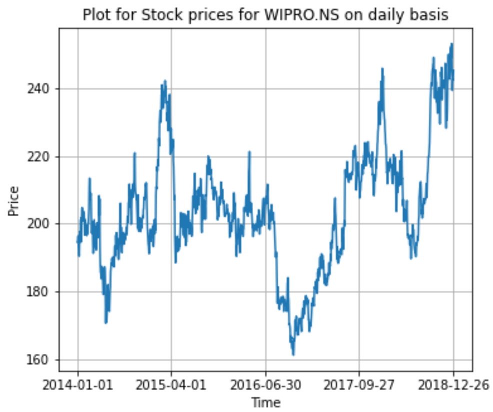


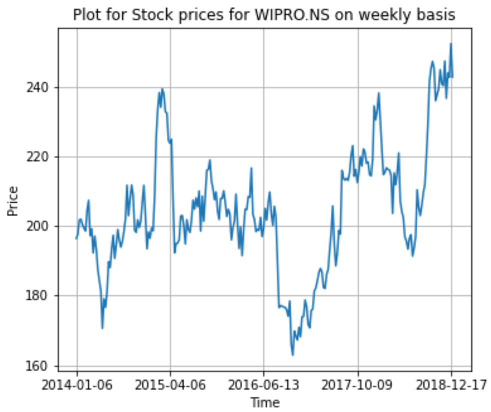


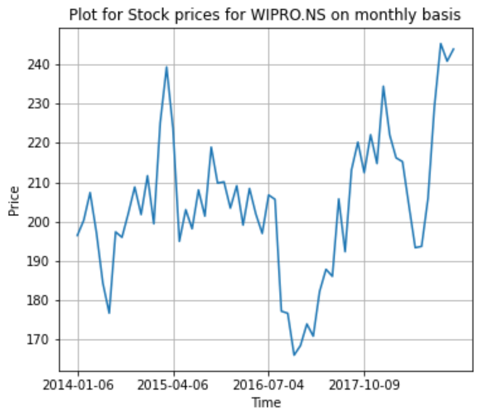






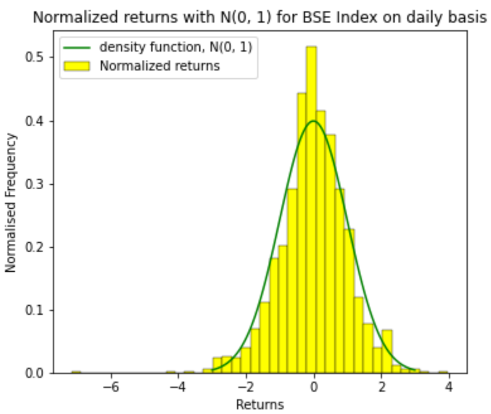


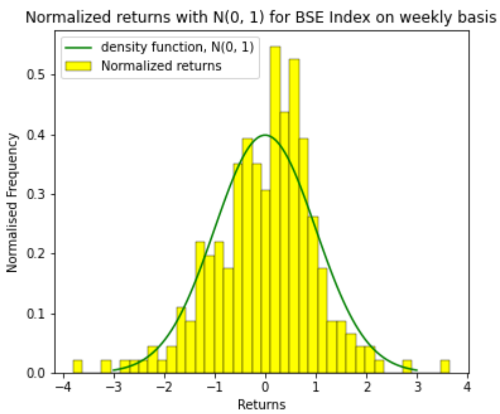


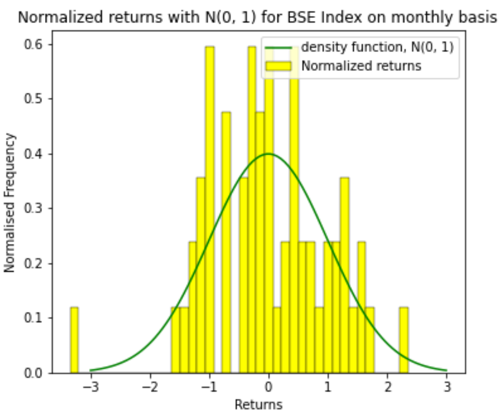


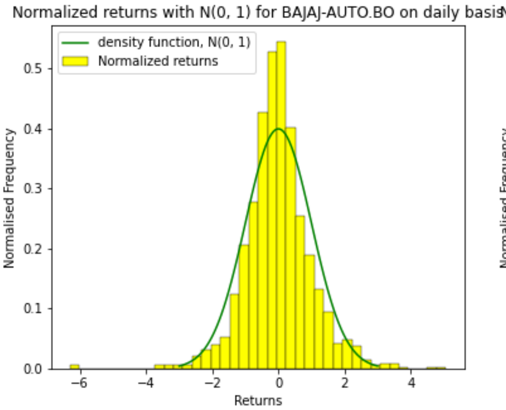
2 QUESTION - 2:

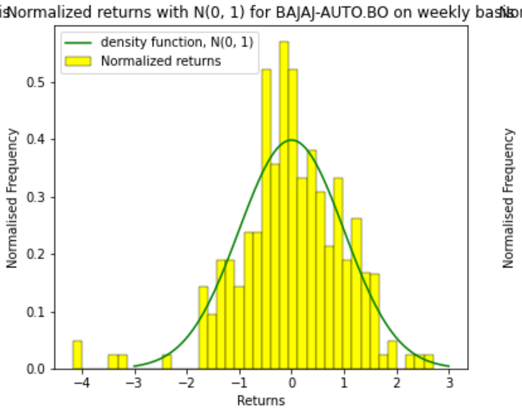
- The plot for the returns R_i for the data in bsedata1 are:

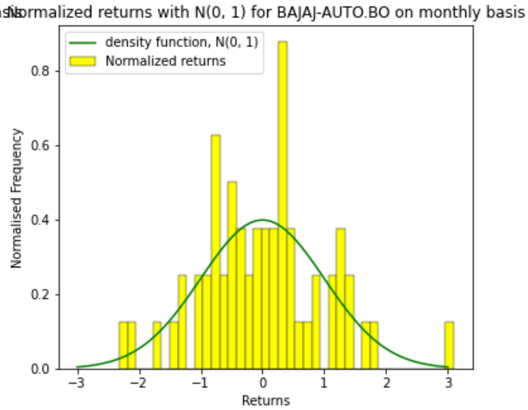


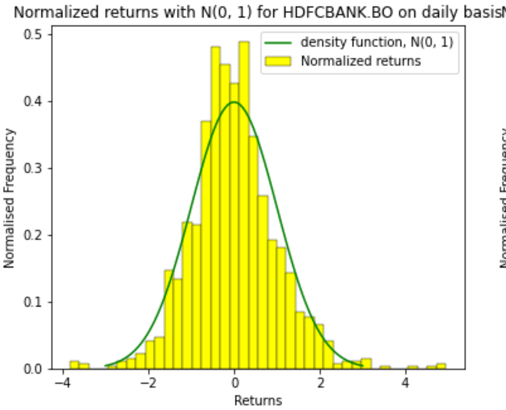


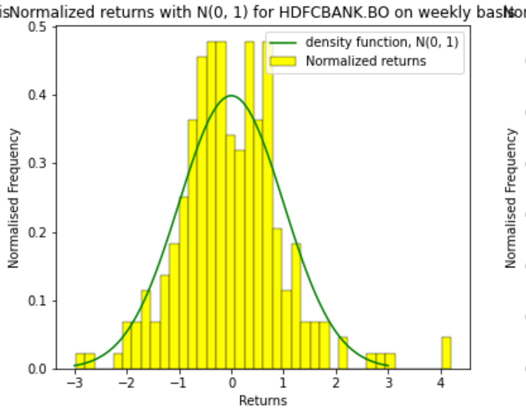


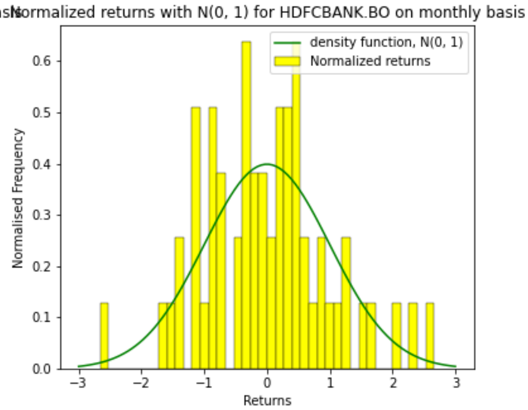

Normalized returns with N(0, 1) for BAJAJ-AUTO.BO on daily basis
density function, N(0, 1)
Normalized returns
Normalised Frequency
Returns

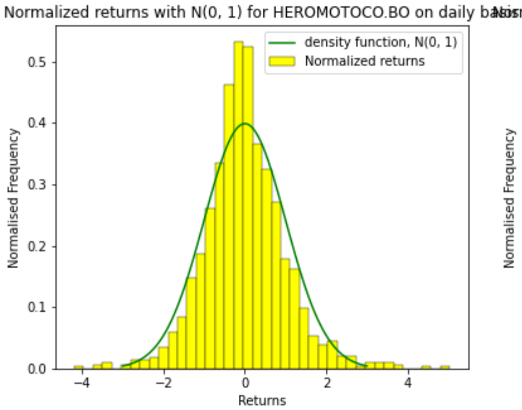

Normalized returns with N(0, 1) for BAJAJ-AUTO.BO on weekly basis
density function, N(0, 1)
Normalized returns
Normalised Frequency
Returns

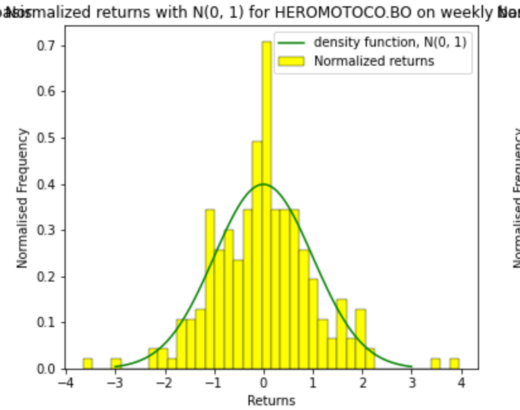

Normalized returns with N(0, 1) for BAJAJ-AUTO.BO on monthly basis
density function, N(0, 1)
Normalized returns
Normalised Frequency
Returns

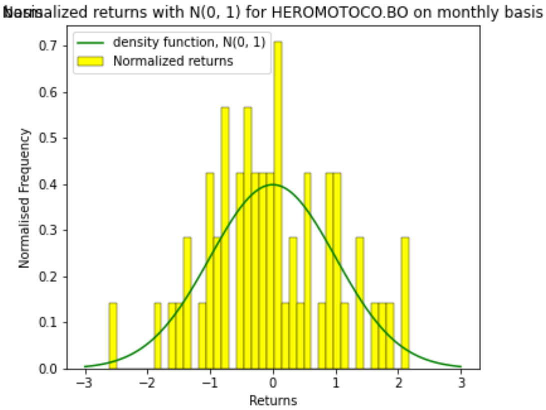

Normalized returns with N(0, 1) for HDFCBANK.BO on daily basis
density function, N(0, 1)
Normalized returns
Normalised Frequency
Returns

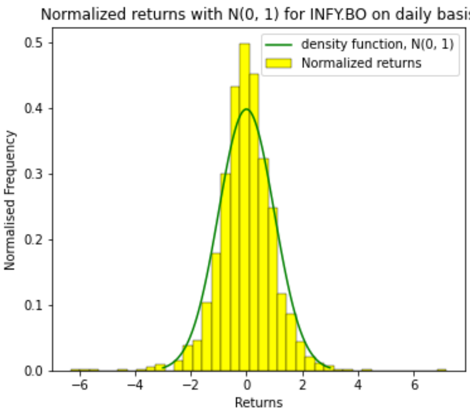

Normalized returns with N(0, 1) for HDFCBANK.BO on weekly basis
density function, N(0, 1)
Normalized returns
Normalised Frequency
Returns

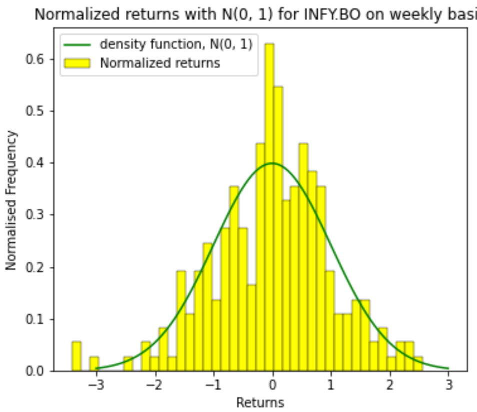

Normalized returns with N(0, 1) for HDFCBANK.BO on monthly basis
density function, N(0, 1)
Normalized returns
Normalised Frequency
Returns

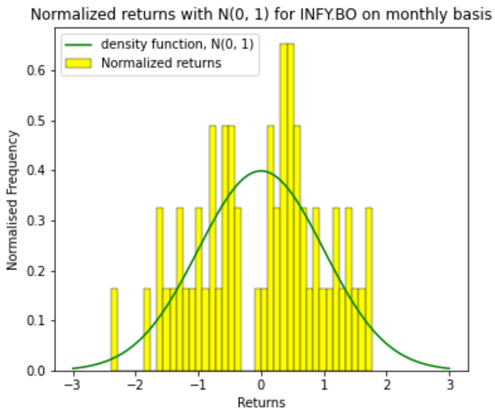

Normalized returns with N(0, 1) for HEROMOTOCO.BO on daily basis
density function, N(0, 1)
Normalized returns
Normalised Frequency
Returns

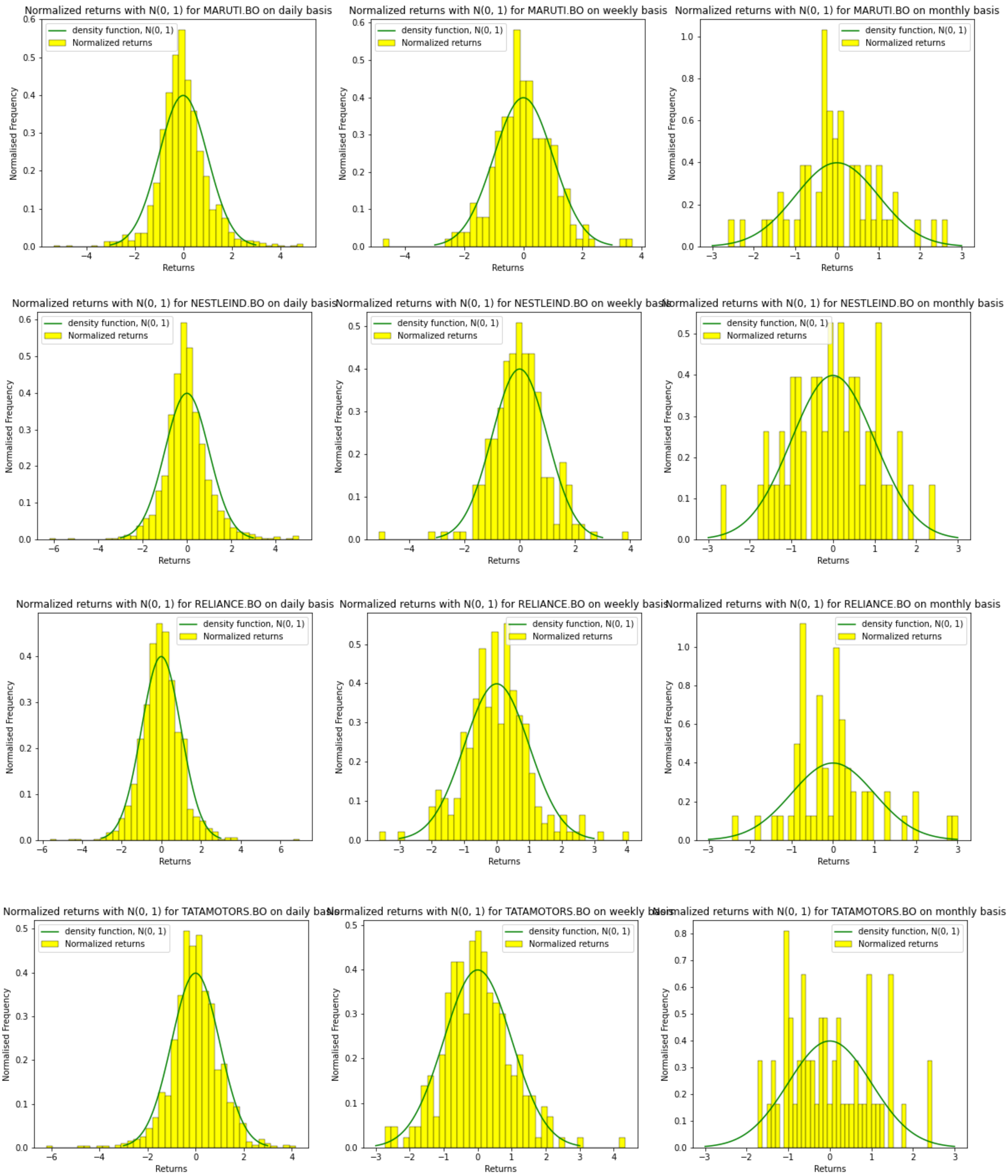

Normalized returns with N(0, 1) for HEROMOTOCO.BO on weekly basis
density function, N(0, 1)
Normalized returns
Normalised Frequency
Returns

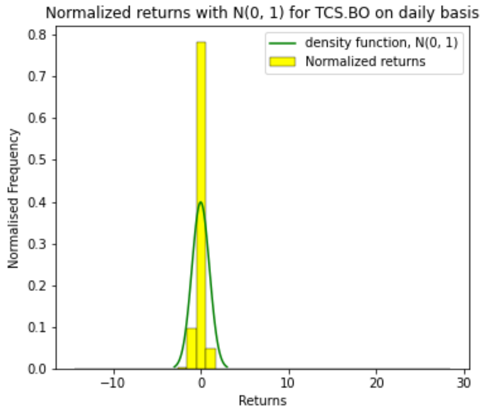

Normalized returns with N(0, 1) for HEROMOTOCO.BO on monthly basis
density function, N(0, 1)
Normalized returns
Normalised Frequency
Returns

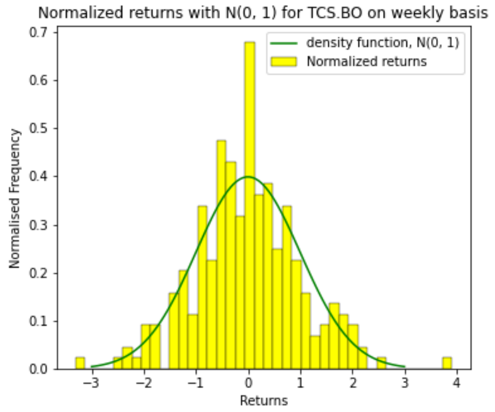

Normalized returns with N(0, 1) for INFY.BO on daily basis
density function, N(0, 1)
Normalized returns
Normalised Frequency
Returns

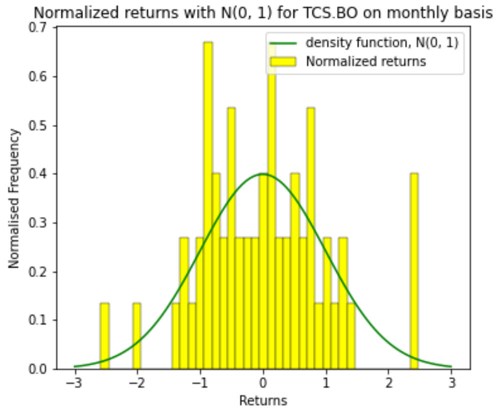

Normalized returns with N(0, 1) for INFY.BO on weekly basis
density function, N(0, 1)
Normalized returns
Normalised Frequency
Returns

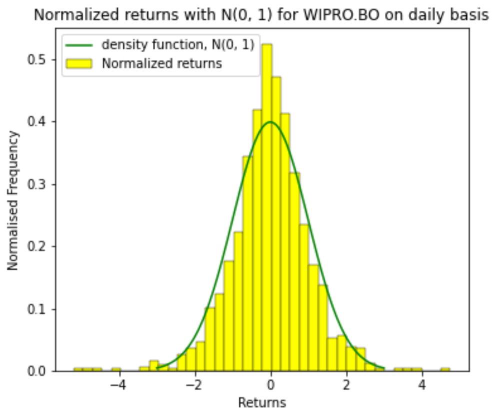

Normalized returns with N(0, 1) for INFY.BO on monthly basis
density function, N(0, 1)
Normalized returns
Normalised Frequency
Returns

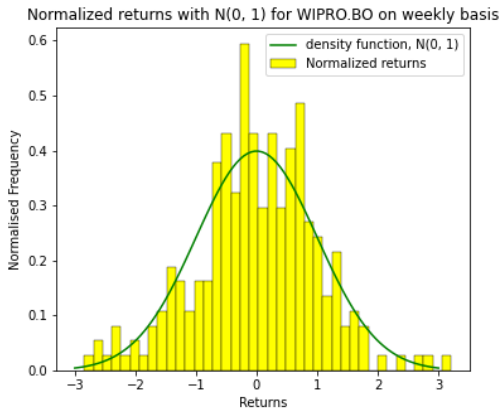

Normalized returns with N(0, 1) for MARUTI.BO on daily basis
Normalized returns with N(0, 1) for MARUTI.BO on weekly basis
Normalized returns with N(0, 1) for MARUTI.BO on monthly basis
Normalized returns with N(0, 1) for NESTLEIND.BO on daily basis
Normalized returns with N(0, 1) for NESTLEIND.BO on weekly basis
Normalized returns with N(0, 1) for NESTLEIND.BO on monthly basis
Normalized returns with N(0, 1) for RELIANCE.BO on daily basis
Normalized returns with N(0, 1) for RELIANCE.BO on weekly basis
Normalized returns with N(0, 1) for RELIANCE.BO on monthly basis
Normalized returns with N(0, 1) for TATAMOTORS.BO on daily basis
Normalized returns with N(0, 1) for TATAMOTORS.BO on weekly basis
Normalized returns with N(0, 1) for TATAMOTORS.BO on monthly basis
density function, N(0, 1)
Normalized returns
Normalised Frequency
Returns

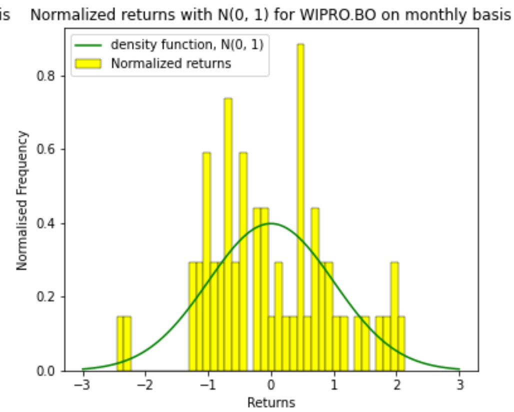




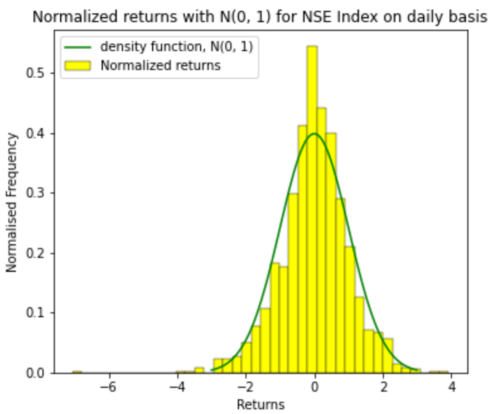


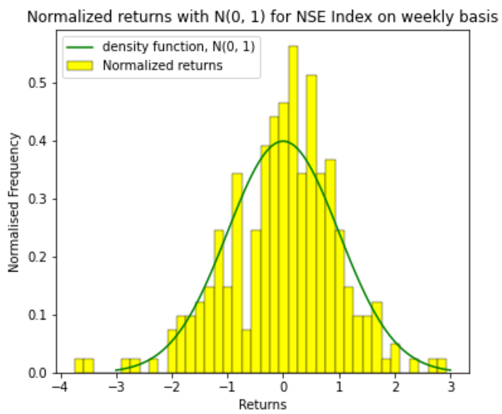


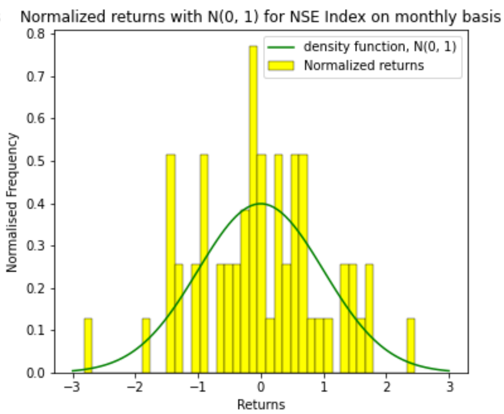


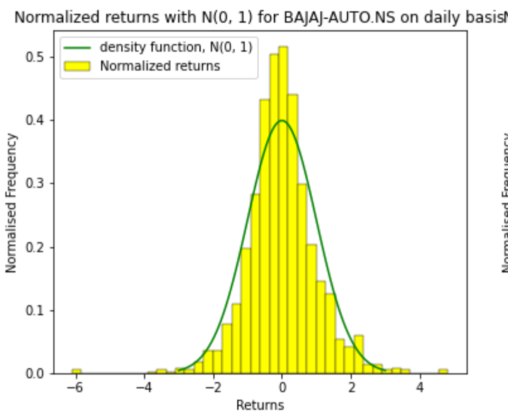


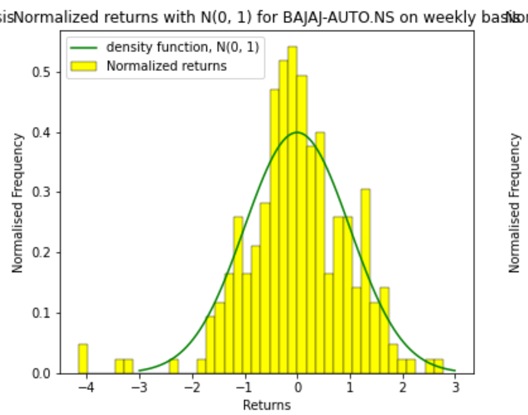
- The plot for the returns R_i for the data in nsedata1 are:

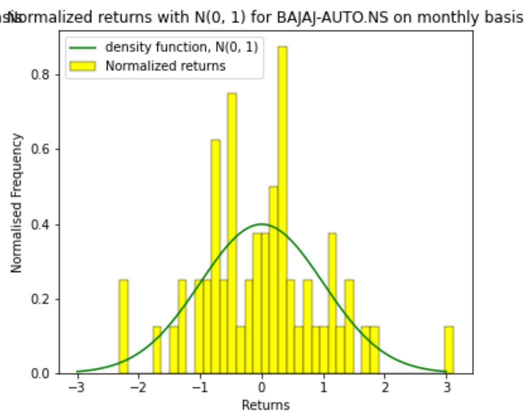


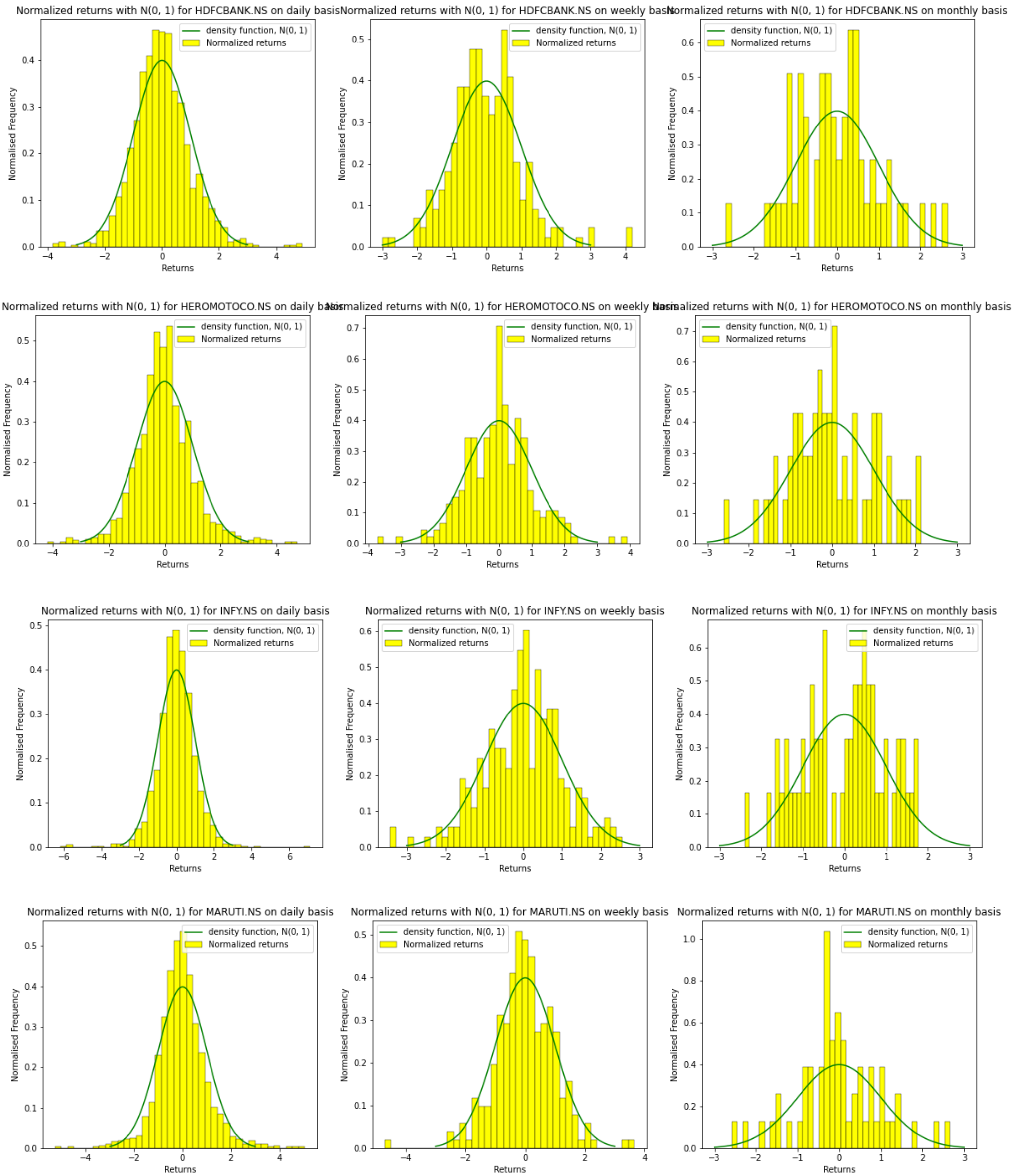


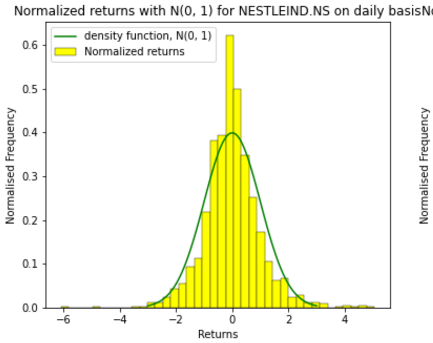


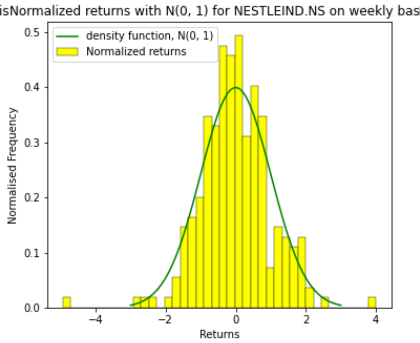


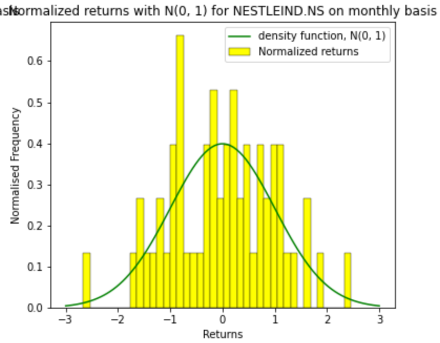


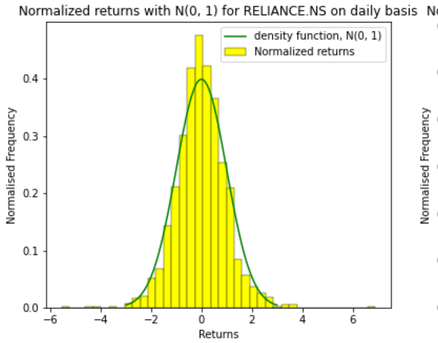


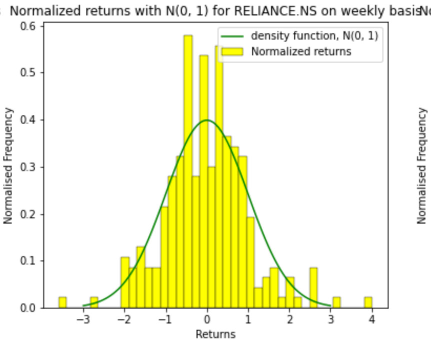

Normalized returns with N(0, 1) for HDFCBANK.NS on daily basis
Normalized returns with N(0, 1) for HDFCBANK.NS on weekly basis
Normalized returns with N(0, 1) for HDFCBANK.NS on monthly basis
Normalized returns with N(0, 1) for HEROMOTOCO.NS on daily basis
Normalized returns with N(0, 1) for HEROMOTOCO.NS on weekly basis
Normalized returns with N(0, 1) for HEROMOTOCO.NS on monthly basis
Normalized returns with N(0, 1) for INFY.NS on daily basis
Normalized returns with N(0, 1) for INFY.NS on weekly basis
Normalized returns with N(0, 1) for INFY.NS on monthly basis
Normalized returns with N(0, 1) for MARUTI.NS on daily basis
Normalized returns with N(0, 1) for MARUTI.NS on weekly basis
Normalized returns with N(0, 1) for MARUTI.NS on monthly basis
density function, N(0, 1)
Normalized returns
Normalised Frequency
Returns

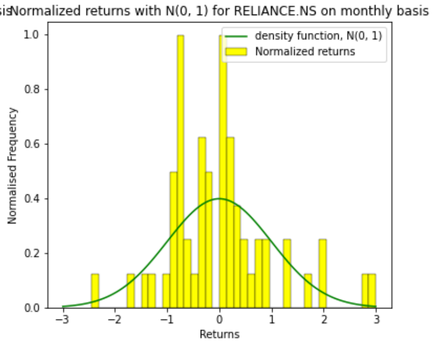

Normalized returns with N(0, 1) for NESTLEIND.NS on daily basis
density function, N(0, 1)
Normalized returns
Normalised Frequency
Returns

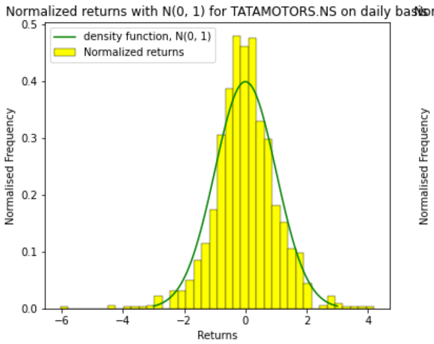

Normalized returns with N(0, 1) for NESTLEIND.NS on weekly basis
density function, N(0, 1)
Normalized returns
Normalised Frequency
Returns

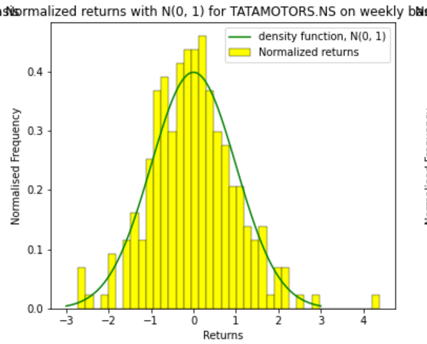

Normalized returns with N(0, 1) for NESTLEIND.NS on monthly basis
density function, N(0, 1)
Normalized returns
Normalised Frequency
Returns

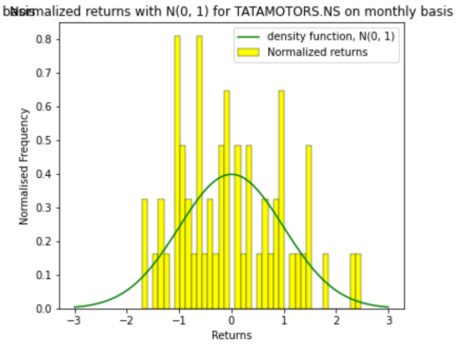

Normalized returns with N(0, 1) for RELIANCE.NS on daily basis
density function, N(0, 1)
Normalized returns
Normalised Frequency
Returns

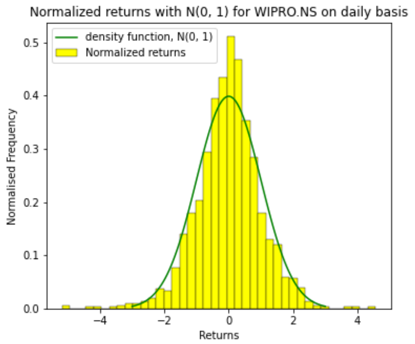

Normalized returns with N(0, 1) for RELIANCE.NS on weekly basis
density function, N(0, 1)
Normalized returns
Normalised Frequency
Returns

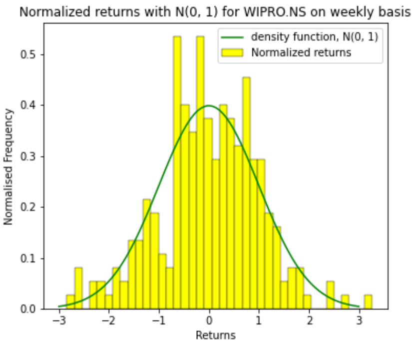

Normalized returns with N(0, 1) for RELIANCE.NS on monthly basis
density function, N(0, 1)
Normalized returns
Normalised Frequency
Returns

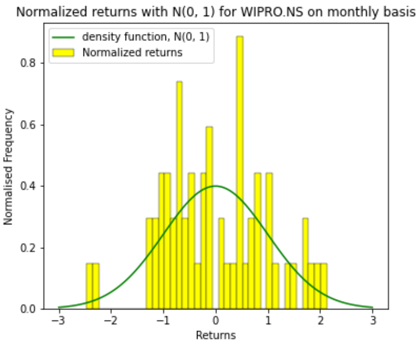

Normalized returns with N(0, 1) for TATAMOTORS.NS on daily basis
density function, N(0, 1)
Normalized returns
Normalised Frequency
Returns

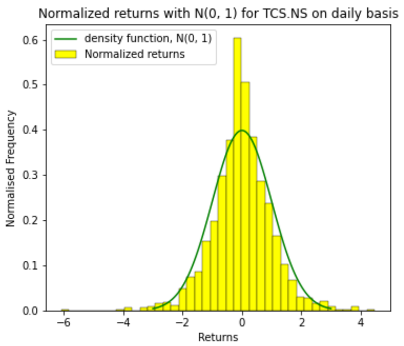

Normalized returns with N(0, 1) for TATAMOTORS.NS on weekly basis
density function, N(0, 1)
Normalized returns
Normalised Frequency
Returns

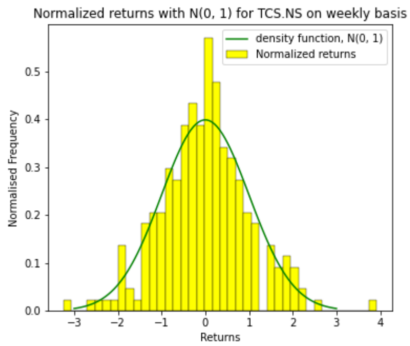

Normalized returns with N(0, 1) for TATAMOTORS.NS on monthly basis
density function, N(0, 1)
Normalized returns
Normalised Frequency
Returns

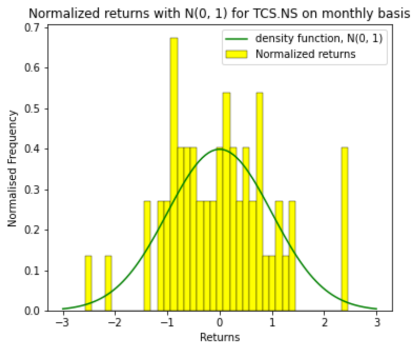

Normalized returns with N(0, 1) for WIPRO.NS on daily basis
density function, N(0, 1)
Normalized returns
Normalised Frequency
Returns


Normalized returns with N(0, 1) for WIPRO.NS on weekly basis
density function, N(0, 1)
Normalized returns
Normalised Frequency
Returns


Normalized returns with N(0, 1) for WIPRO.NS on monthly basis
density function, N(0, 1)
Normalized returns
Normalised Frequency
Returns


Normalized returns with N(0, 1) for TCS.NS on daily basis
density function, N(0, 1)
Normalized returns
Normalised Frequency
Returns


Normalized returns with N(0, 1) for TCS.NS on weekly basis
density function, N(0, 1)
Normalized returns
Normalised Frequency
Returns

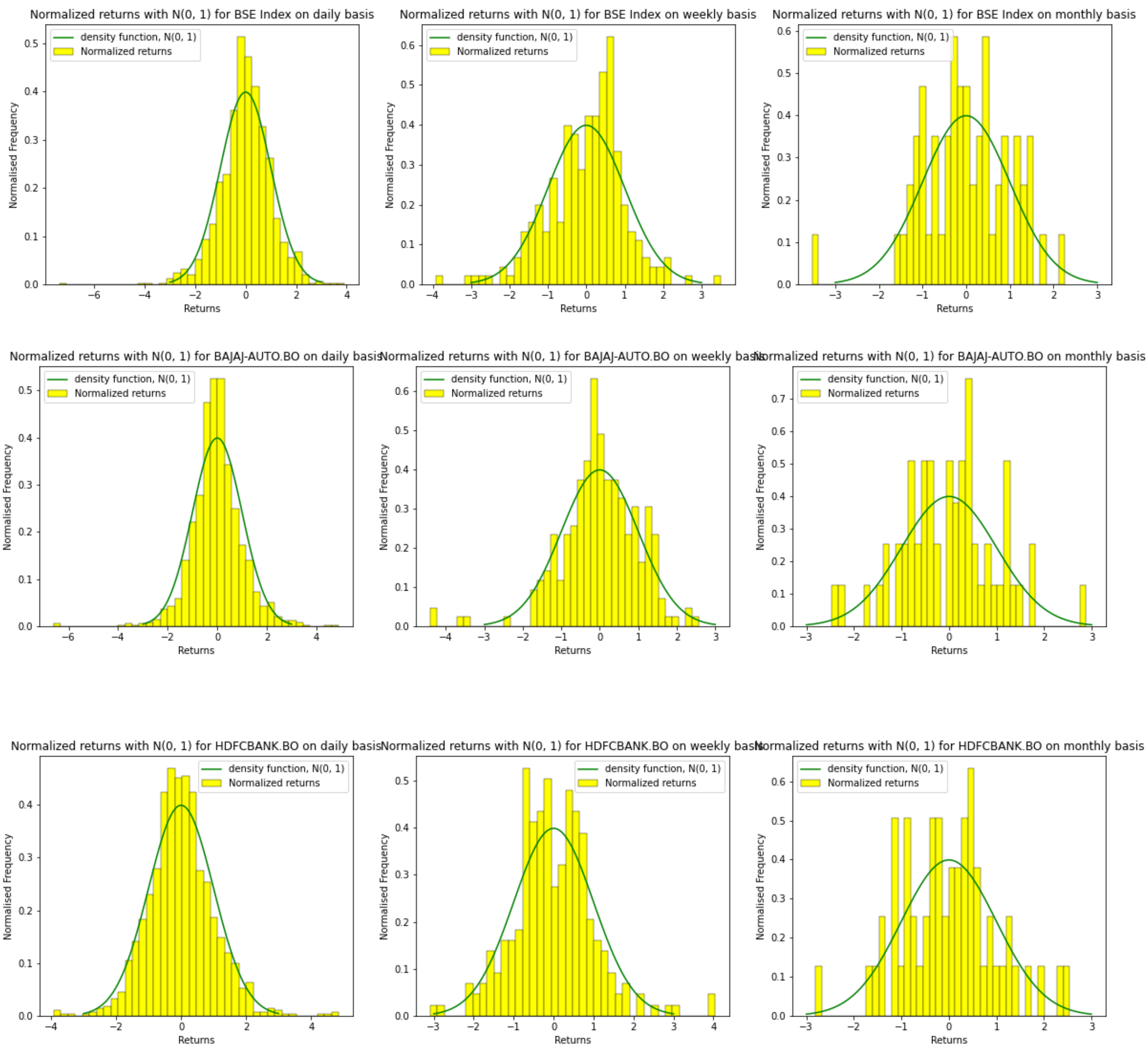

Normalized returns with N(0, 1) for TCS.NS on monthly basis
density function, N(0, 1)
Normalized returns
Normalised Frequency
Returns

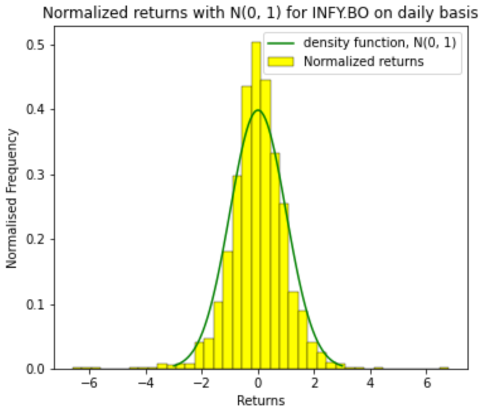
Observations –

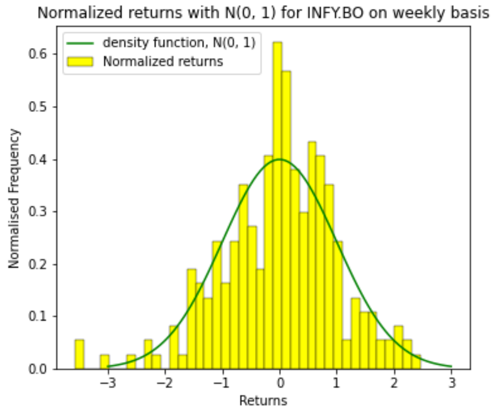
1. We can observe that the N(0, 1) roughly estimates the normalized returns, which is more accurate if the returns are computed on daily basis instead of weekly or monthly.
2. The deviations are due to the random fluctuations in the real world market, so, naïve Gaussian distribution can't completely model it.
3. It is more evident when a closer look is taken at the tails of these plots. The curve for N(0, 1) steeply decreases to 0, but the returns on the prices does not. At the tails, there seem to be more deviations, and more proper model using a mix of different distributions is required to capture those changes.
4. Such a behaviour is called as leptokurtic, i.e., high peaks and heavy tails. Jump diffusion model (by Merton) take these so called jumps at the tails into account.

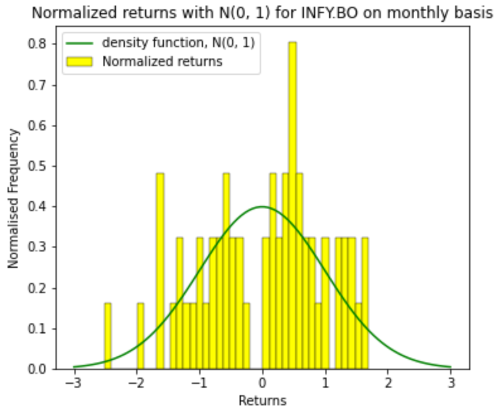
3 QUESTION – 3 :

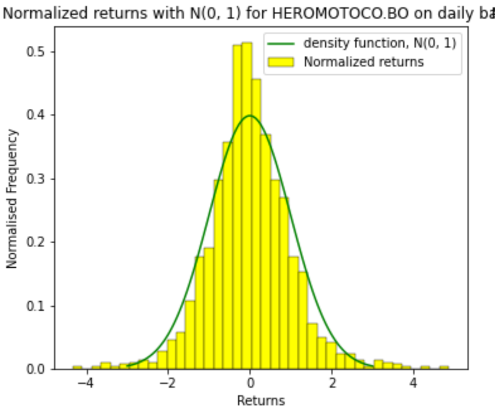
- The plot for the log returns R_i for the data in bsedata1 are:

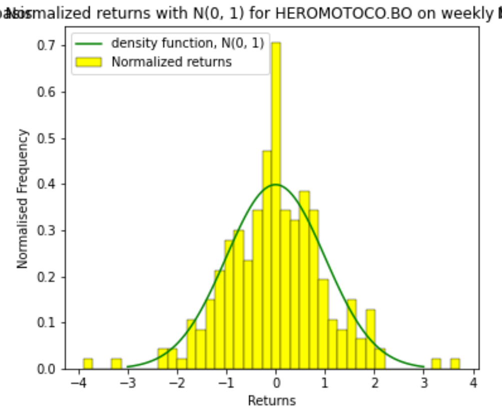


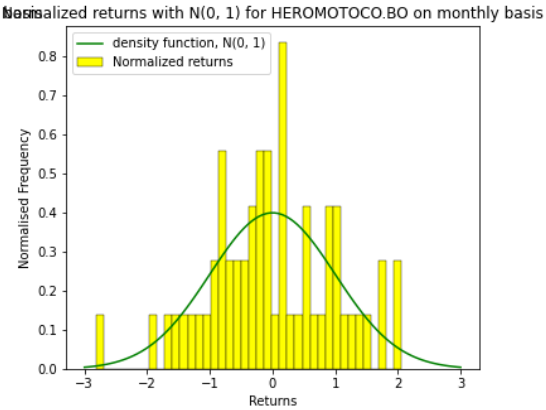

Normalized returns with N(0, 1) for INFY.BO on daily basis
density function, N(0, 1)
Normalized returns
Normalised Frequency
Returns

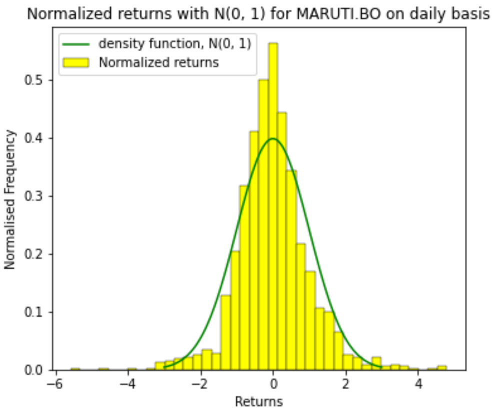

Normalized returns with N(0, 1) for INFY.BO on weekly basis
density function, N(0, 1)
Normalized returns
Normalised Frequency
Returns

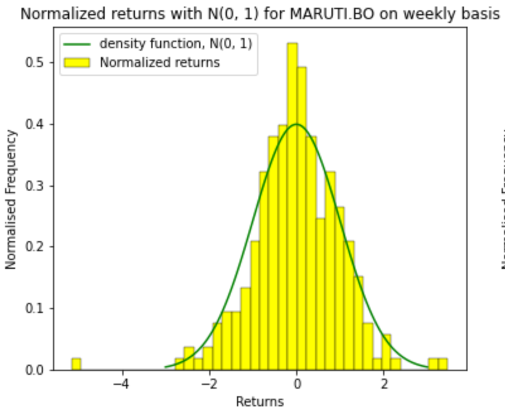

Normalized returns with N(0, 1) for INFY.BO on monthly basis
density function, N(0, 1)
Normalized returns
Normalised Frequency
Returns

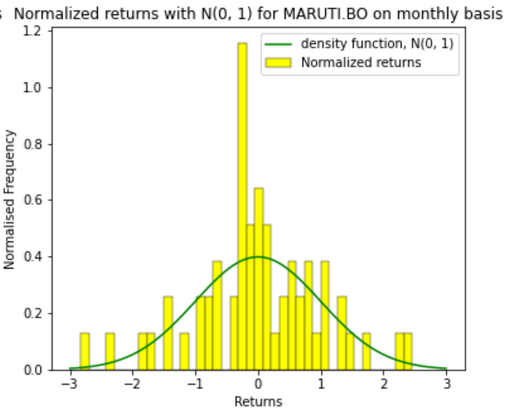

Normalized returns with N(0, 1) for HEROMOTOCO.BO on daily basis
density function, N(0, 1)
Normalized returns
Normalised Frequency
Returns

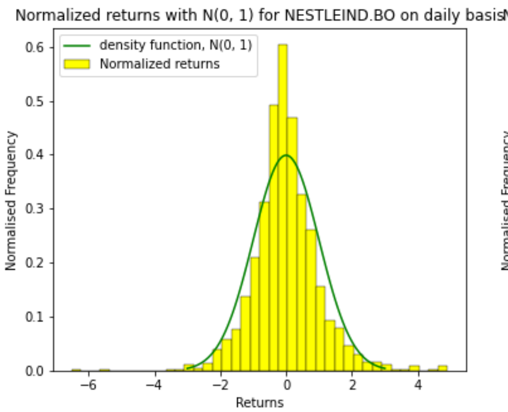

Normalized returns with N(0, 1) for HEROMOTOCO.BO on weekly basis
density function, N(0, 1)
Normalized returns
Normalised Frequency
Returns

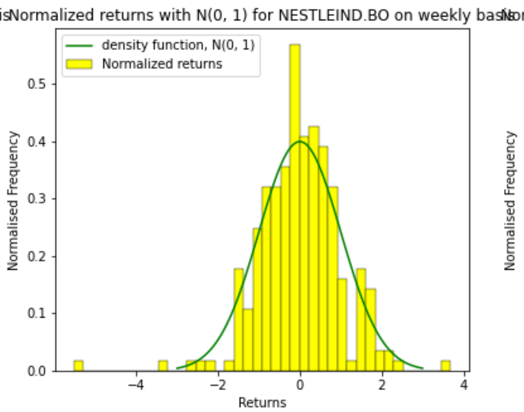

Normalized returns with N(0, 1) for HEROMOTOCO.BO on monthly basis
density function, N(0, 1)
Normalized returns
Normalised Frequency
Returns

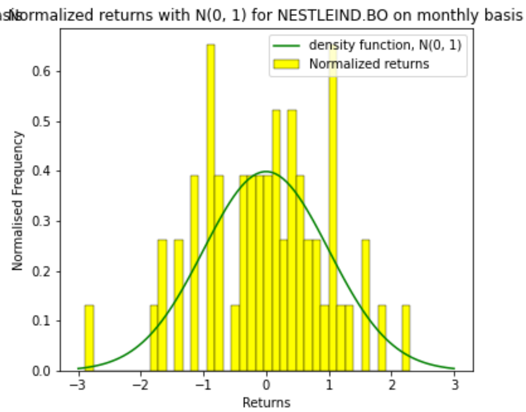

Normalized returns with N(0, 1) for MARUTI.BO on daily basis
density function, N(0, 1)
Normalized returns
Normalised Frequency
Returns

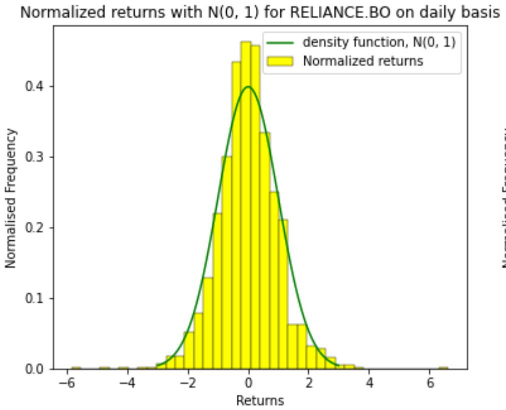

Normalized returns with N(0, 1) for MARUTI.BO on weekly basis
density function, N(0, 1)
Normalized returns
Normalised Frequency
Returns

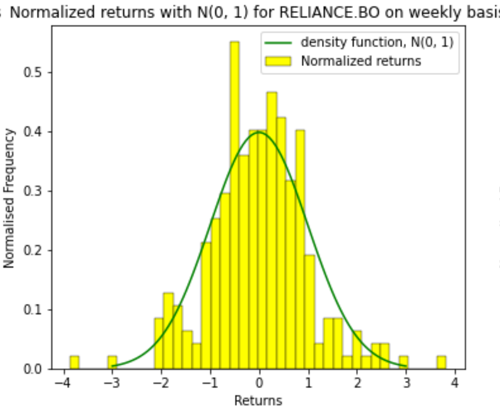

Normalized returns with N(0, 1) for MARUTI.BO on monthly basis
density function, N(0, 1)
Normalized returns
Normalised Frequency
Returns

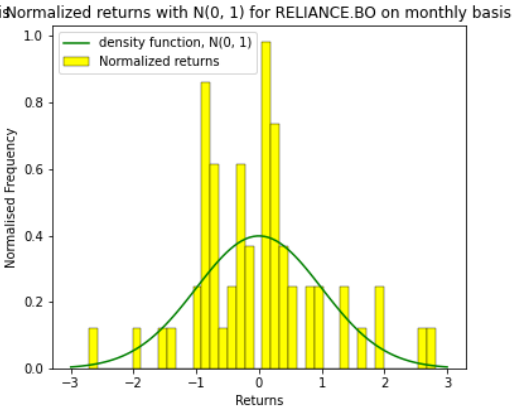

Normalized returns with N(0, 1) for NESTLEIND.BO on daily basis
density function, N(0, 1)
Normalized returns
Normalised Frequency
Returns

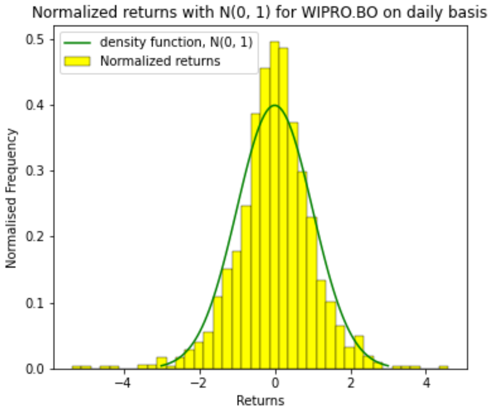

Normalized returns with N(0, 1) for NESTLEIND.BO on weekly basis
density function, N(0, 1)
Normalized returns
Normalised Frequency
Returns

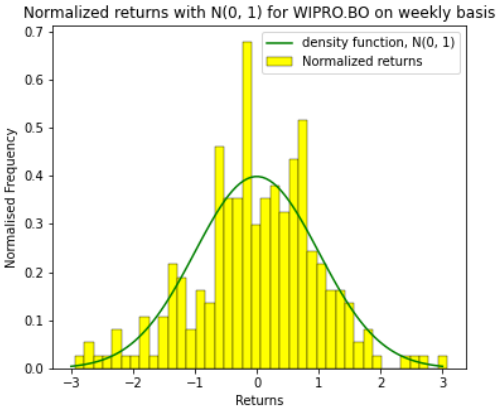

Normalized returns with N(0, 1) for NESTLEIND.BO on monthly basis
density function, N(0, 1)
Normalized returns
Normalised Frequency
Returns


Normalized returns with N(0, 1) for RELIANCE.BO on daily basis
density function, N(0, 1)
Normalized returns
Normalised Frequency
Returns


Normalized returns with N(0, 1) for RELIANCE.BO on weekly basis
density function, N(0, 1)
Normalized returns
Normalised Frequency
Returns


Normalized returns with N(0, 1) for RELIANCE.BO on monthly basis
density function, N(0, 1)
Normalized returns
Normalised Frequency
Returns


Normalized returns with N(0, 1) for WIPRO.BO on daily basis
density function, N(0, 1)
Normalized returns
Normalised Frequency
Returns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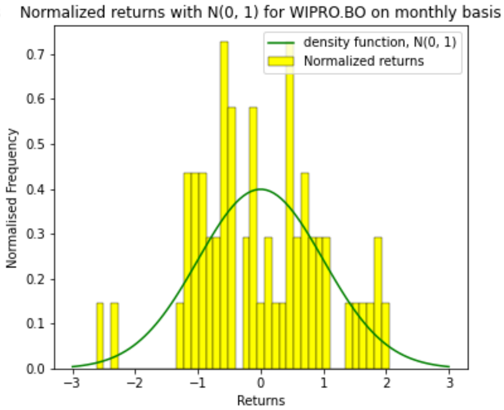
density function, N(0, 1)
Normalized returns
Normalised Frequency
Returns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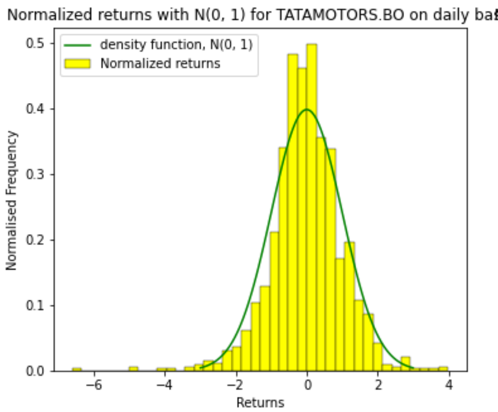
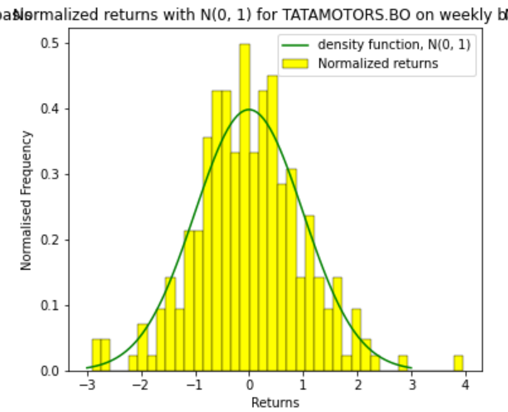
density function, N(0, 1)
Normalized returns
Normalised Frequency
Returns


Normalized returns with N(0, 1) for TATAMOTORS.BO on daily ba
density function, N(0, 1)
Normalized returns
Normalised Frequency
Returns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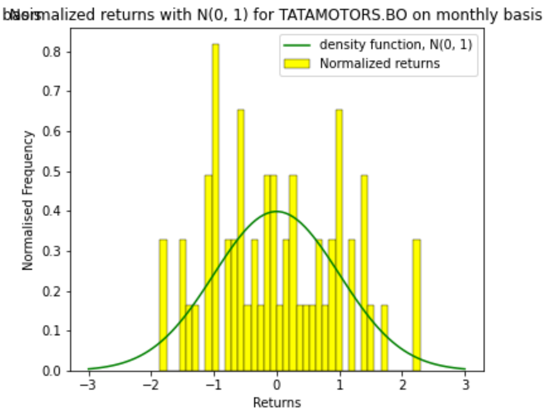
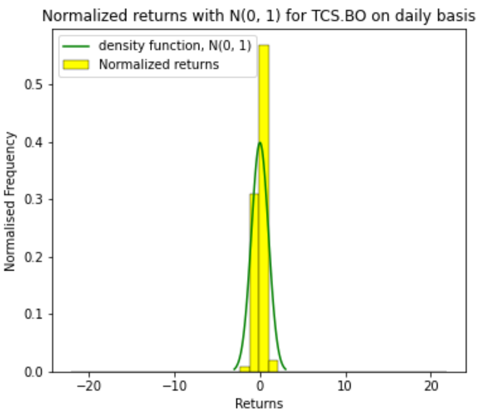
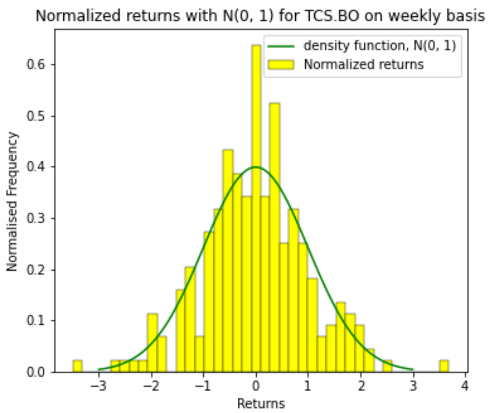
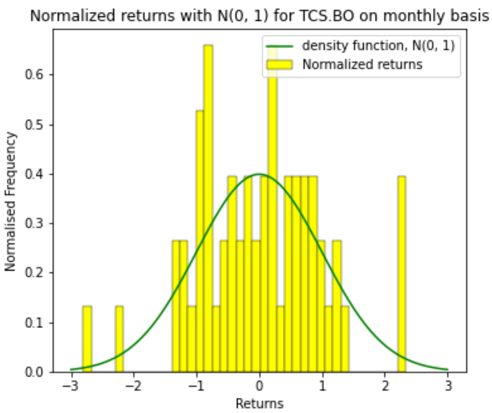
density function, N(0, 1)
Normalized returns
Normalised Frequency
Returns

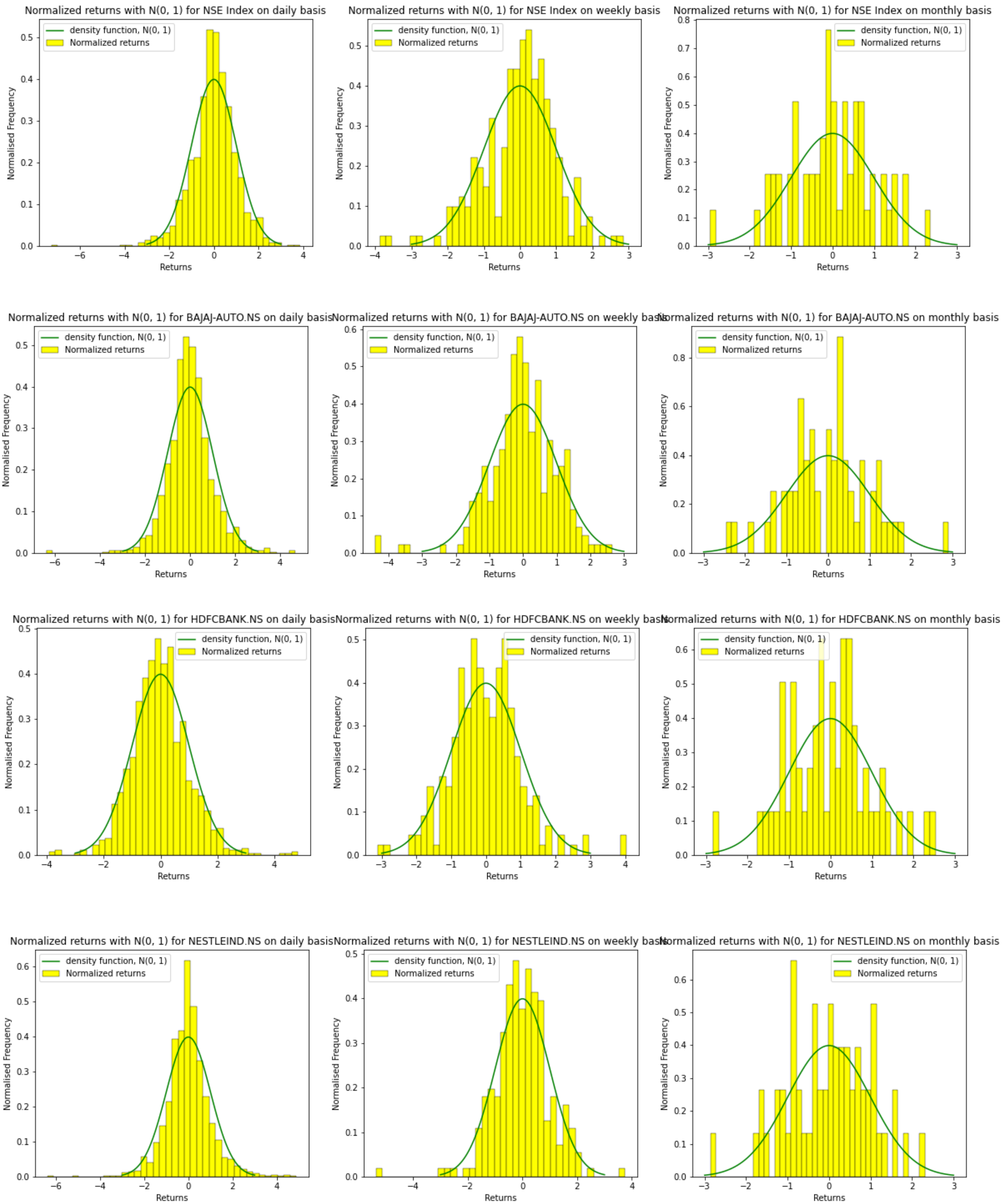

rmalized returns with N(0, 1) for TATAMOTORS.BO on monthly basis
density function, N(0, 1)
Normalized returns
Normalised Frequency
Returns

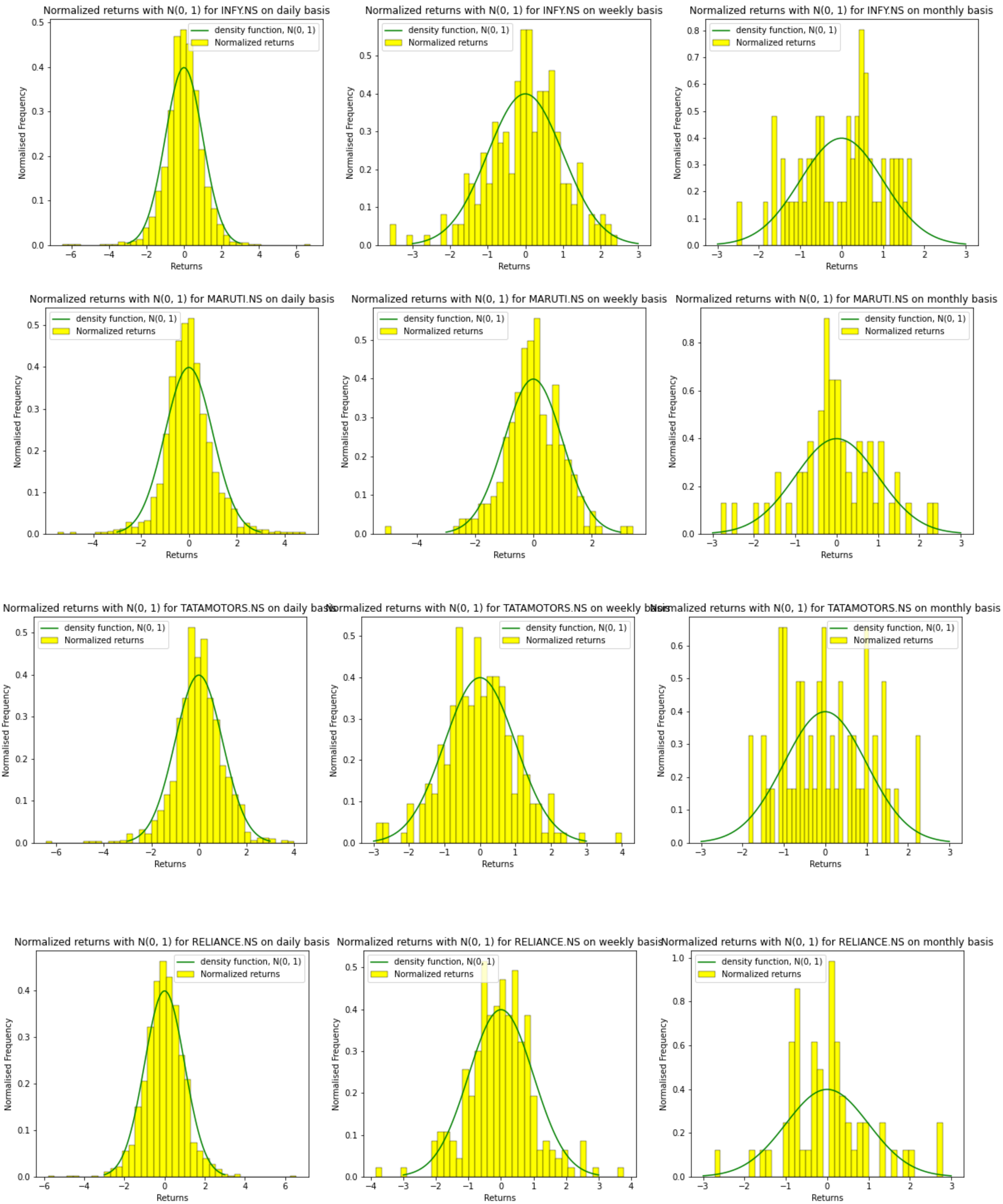

Normalized returns with N(0, 1) for TCS.BO on daily basis
density function, N(0, 1)
Normalized returns
Normalised Frequency
Returns

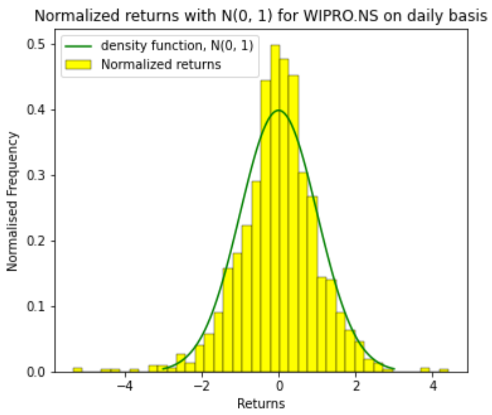

Normalized returns with N(0, 1) for TCS.BO on weekly basis
density function, N(0, 1)
Normalized returns
Normalised Frequency
Returns

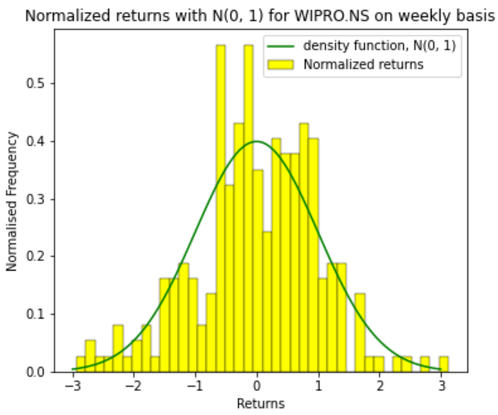

Normalized returns with N(0, 1) for TCS.BO on monthly basis
density function, N(0, 1)
Normalized returns
Normalised Frequency
Returns

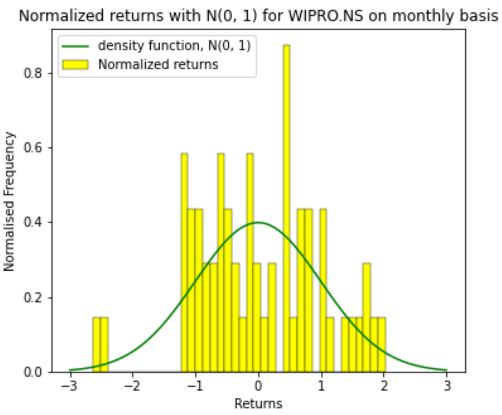
- The plot for the log returns R_i for the data in nsedata1 are:

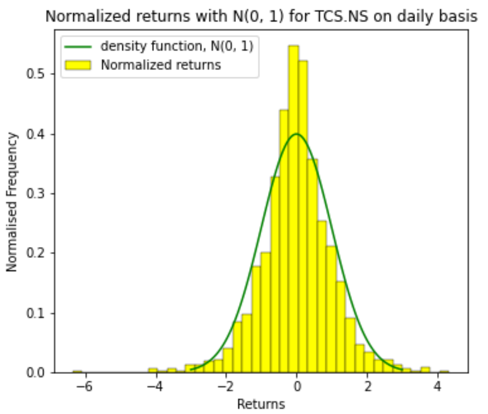


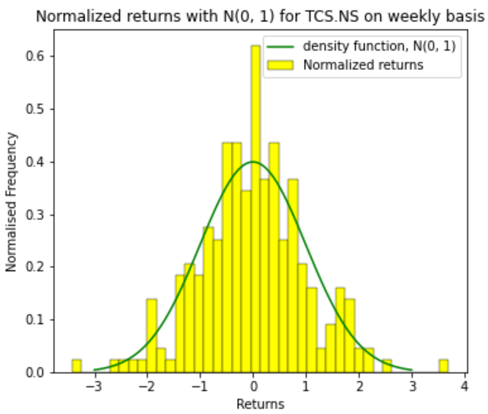

Normalized returns with N(0, 1) for INFY.NS on daily basis
Normalized returns with N(0, 1) for INFY.NS on weekly basis
Normalized returns with N(0, 1) for INFY.NS on monthly basis
Normalized returns with N(0, 1) for MARUTI.NS on daily basis
Normalized returns with N(0, 1) for MARUTI.NS on weekly basis
Normalized returns with N(0, 1) for MARUTI.NS on monthly basis
Normalized returns with N(0, 1) for TATAMOTORS.NS on daily basis
Normalized returns with N(0, 1) for TATAMOTORS.NS on weekly basis
Normalized returns with N(0, 1) for TATAMOTORS.NS on monthly basis
Normalized returns with N(0, 1) for RELIANCE.NS on daily basis
Normalized returns with N(0, 1) for RELIANCE.NS on weekly basis
Normalized returns with N(0, 1) for RELIANCE.NS on monthly basis
density function, N(0, 1)
Normalized returns
Normalised Frequency
Returns

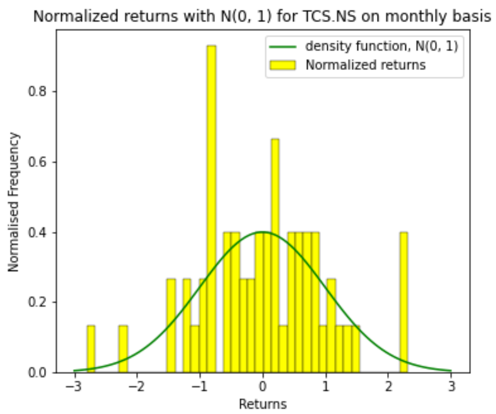

Normalized returns with N(0, 1) for WIPRO.NS on daily basis
density function, N(0, 1)
Normalized returns
Normalised Frequency
Returns

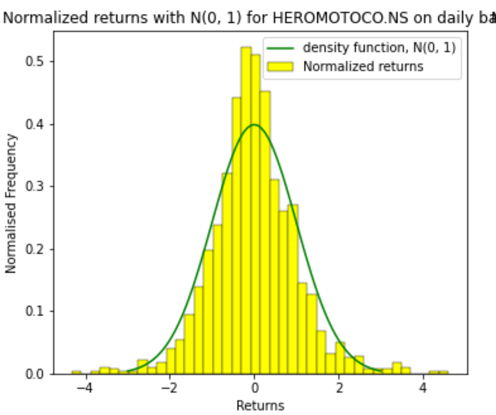

Normalized returns with N(0, 1) for WIPRO.NS on weekly basis
density function, N(0, 1)
Normalized returns
Normalised Frequency
Returns

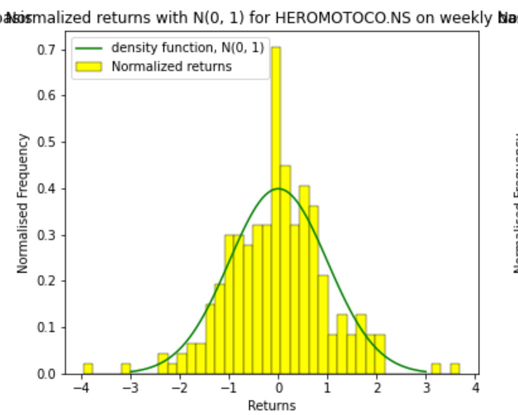

Normalized returns with N(0, 1) for WIPRO.NS on monthly basis
density function, N(0, 1)
Normalized returns
Normalised Frequency
Returns

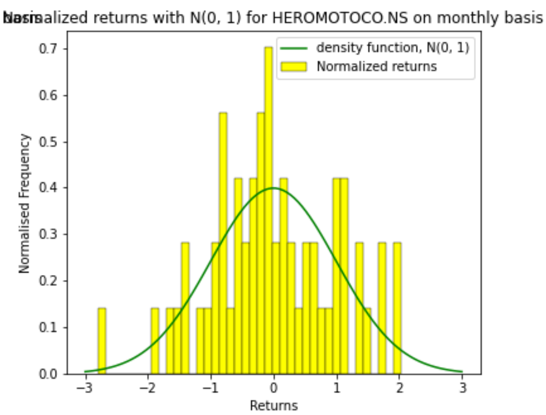

Normalized returns with N(0, 1) for TCS.NS on daily basis
density function, N(0, 1)
Normalized returns
Normalised Frequency
Returns


Normalized returns with N(0, 1) for TCS.NS on weekly basis
density function, N(0, 1)
Normalized returns
Normalised Frequency
Returns


Normalized returns with N(0, 1) for TCS.NS on monthly basis
density function, N(0, 1)
Normalized returns
Normalised Frequency
Returns


Normalized returns with N(0, 1) for HEROMOTOCO.NS on daily basis
density function, N(0, 1)
Normalized returns
Normalised Frequency
Returns


Normalized returns with N(0, 1) for HEROMOTOCO.NS on weekly basis
density function, N(0, 1)
Normalized returns
Normalised Frequency
Returns


Normalized returns with N(0, 1) for HEROMOTOCO.NS on monthly basis
density function, N(0, 1)
Normalized returns
Normalised Frequency
Returns

4 QUESTION – 4 & 5 :

Formulae used –

- Geometric Brownian motion is used to model the scenario since stock prices behave like a stochastic process:

$$S(t_{i+1}) = S(t_i)\exp((\mu - 0.5\,\sigma^2)(t_{i+1} - t_i) + \sigma\sqrt{t_{i+1} - t_i}\,Z_{i+1})$$

- μ and σ^2 can be found by solving following equations:

$$\mu - \frac{\sigma^2}{2} = \frac{1}{n}\sum_{1}^{n} u_i = E(u)$$

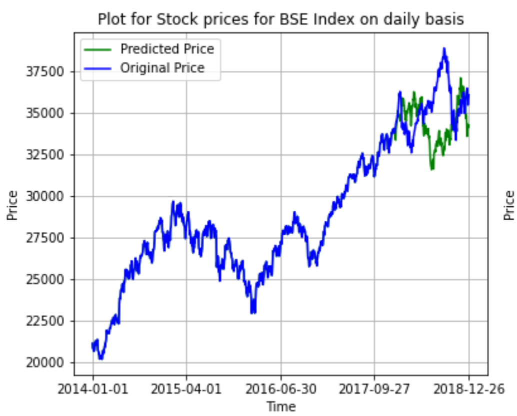
$$\sigma^2 = \frac{1}{n-1}\sum_{1}^{n}(u_i - E(u))^2$$

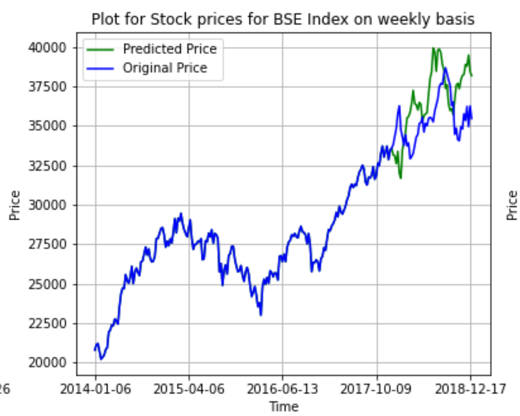
$$u_i = \ln(\frac{s_i}{s_{i-1}})$$

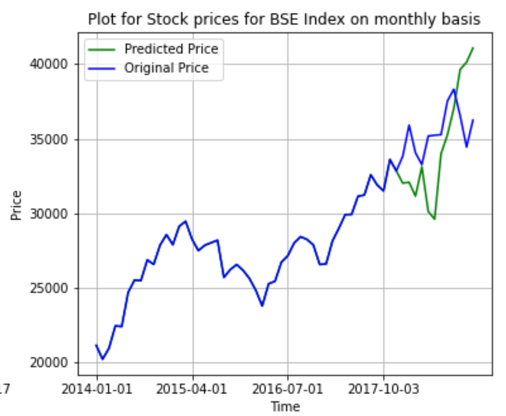
where,

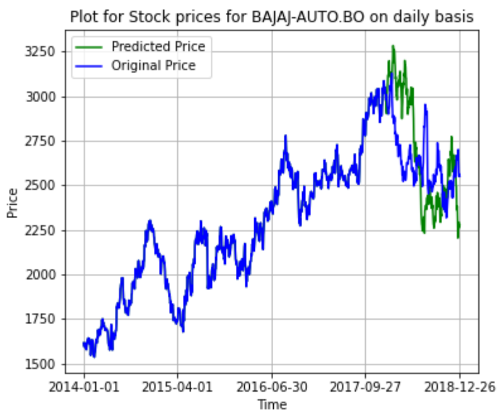
$Z_1, Z_2, \ldots, Z_n$ are independent N(0, 1) variables, u_i is the log return of day i, and s_i and s_{i-1} are adjacent closing stock prices of day i - 1 and day i respectively

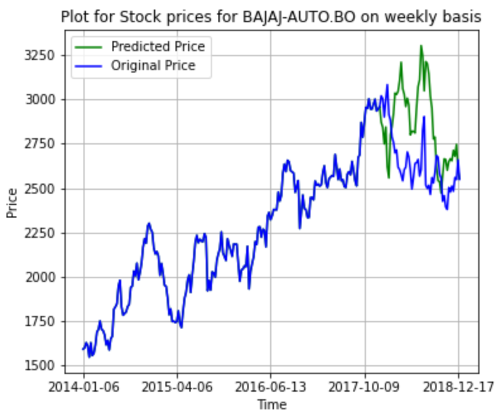
- The generated stock prices path along with the actual path for stocks in bsedata1 are:

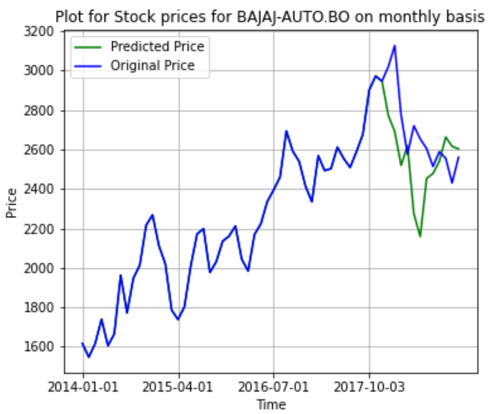


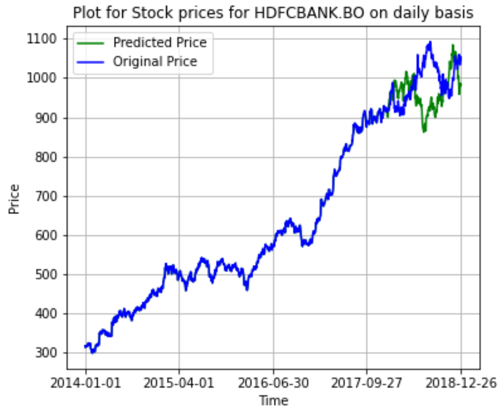


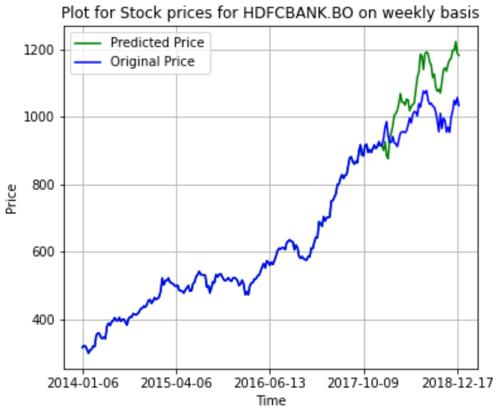


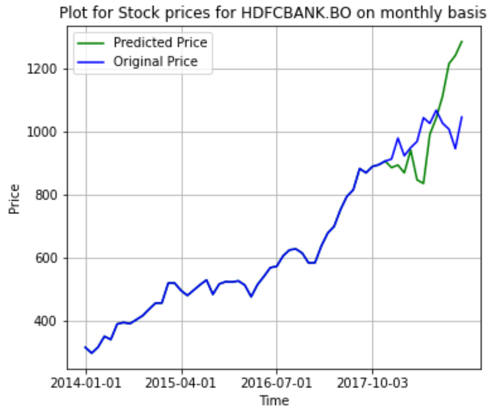


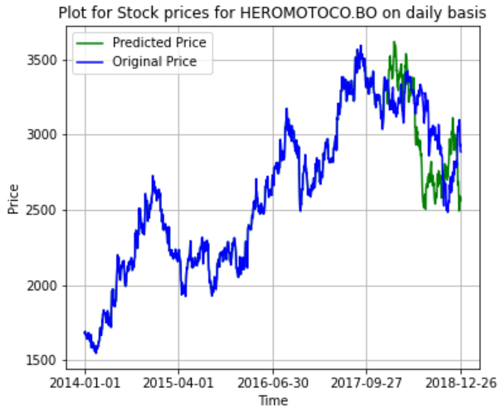


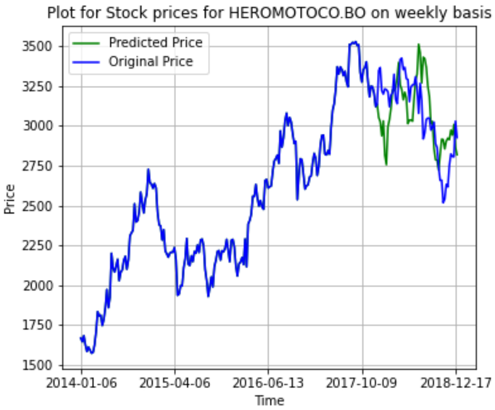


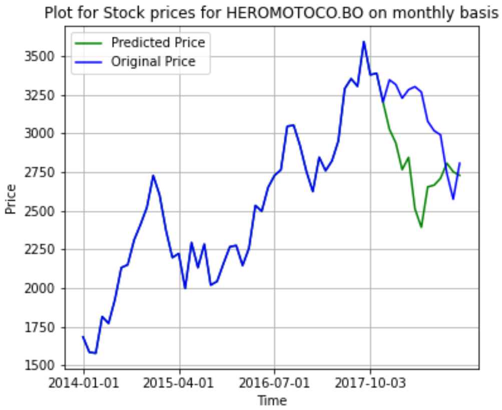

Plot for Stock prices for HDFCBANK.BO on daily basis
Predicted Price
Original Price
Price
Time

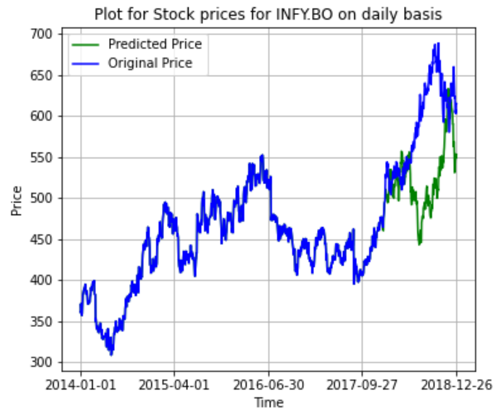

Plot for Stock prices for HDFCBANK.BO on weekly basis
Predicted Price
Original Price
Price
Time

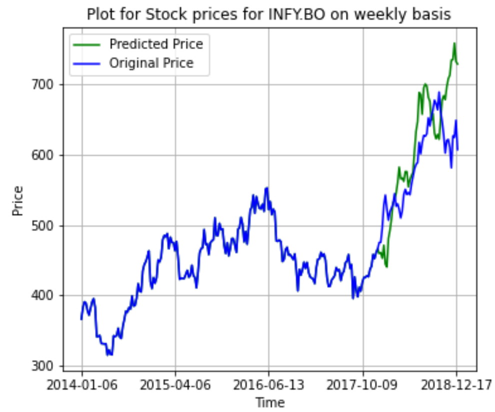

Plot for Stock prices for HDFCBANK.BO on monthly basis
Predicted Price
Original Price
Price
Time

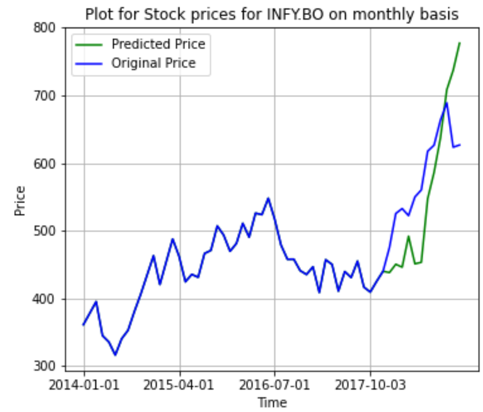

Plot for Stock prices for HEROMOTOCO.BO on daily basis
Predicted Price
Original Price
Price
Time

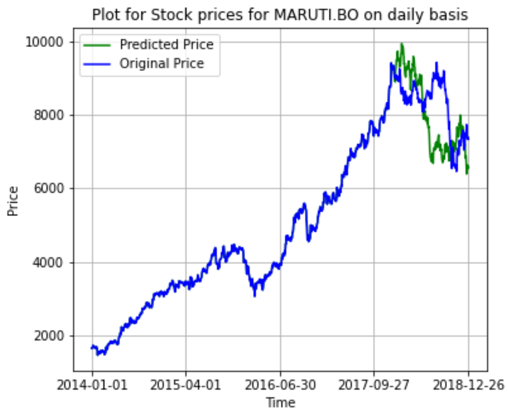

Plot for Stock prices for HEROMOTOCO.BO on weekly basis
Predicted Price
Original Price
Price
Time

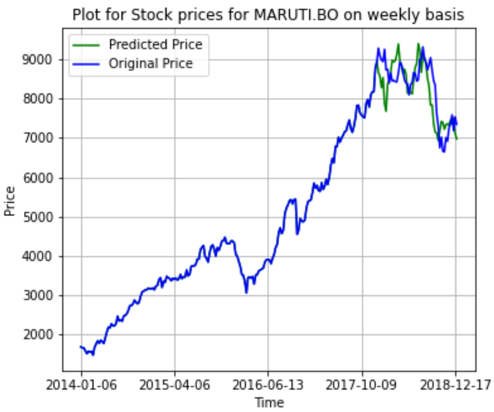

Plot for Stock prices for HEROMOTOCO.BO on monthly basis
Predicted Price
Original Price
Price
Time

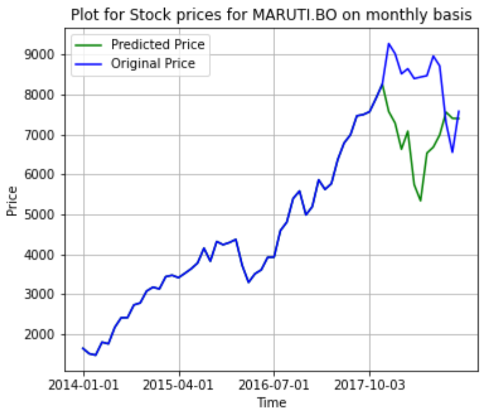

Plot for Stock prices for INFY.BO on daily basis
Predicted Price
Original Price
Price
Time

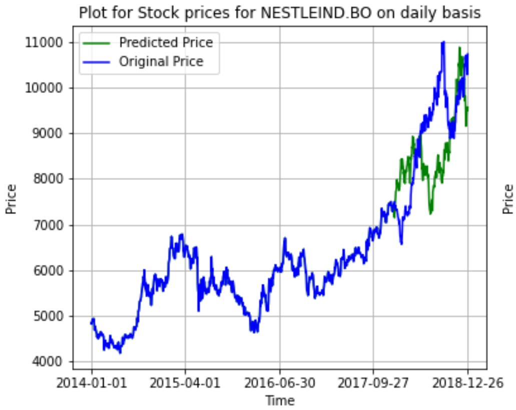

Plot for Stock prices for INFY.BO on weekly basis
Predicted Price
Original Price
Price
Time


Plot for Stock prices for INFY.BO on monthly basis
Predicted Price
Original Price
Price
Time

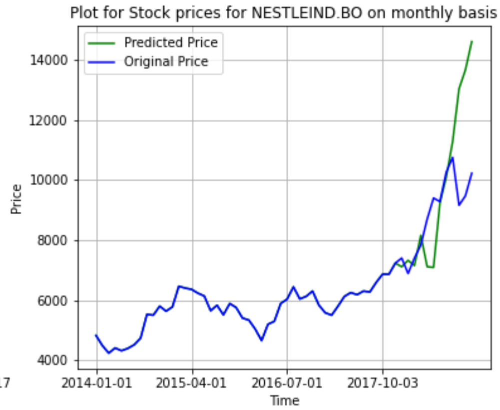

Plot for Stock prices for MARUTI.BO on daily basis
Predicted Price
Original Price
Price
Time

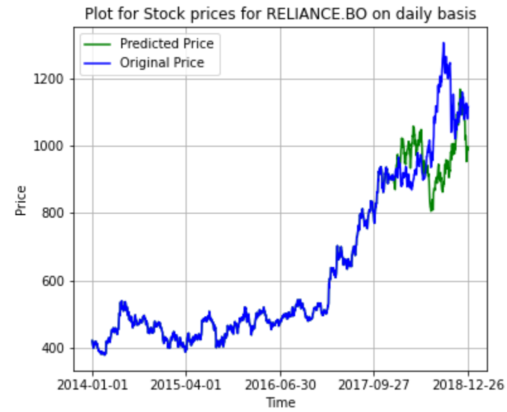

Plot for Stock prices for MARUTI.BO on weekly basis
Predicted Price
Original Price
Price
Time

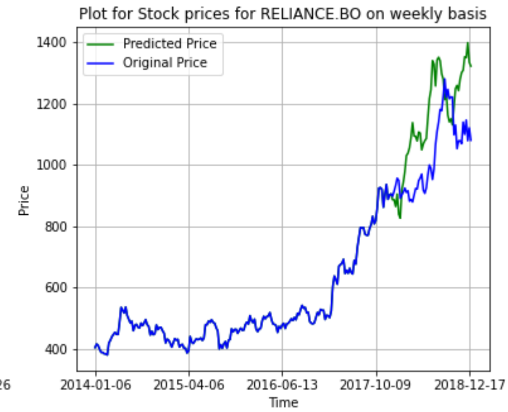

Plot for Stock prices for MARUTI.BO on monthly basis
Predicted Price
Original Price
Price
Time

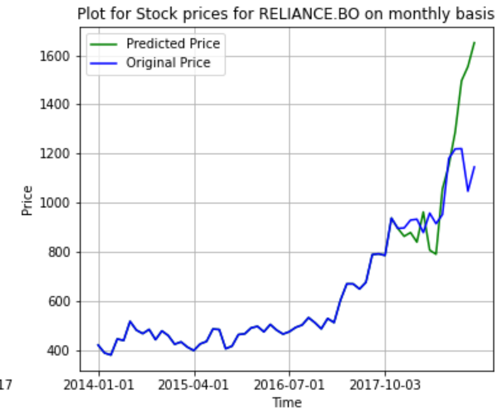

Plot for Stock prices for NESTLEIND.BO on daily basis
Predicted Price
Original Price
Price
Time

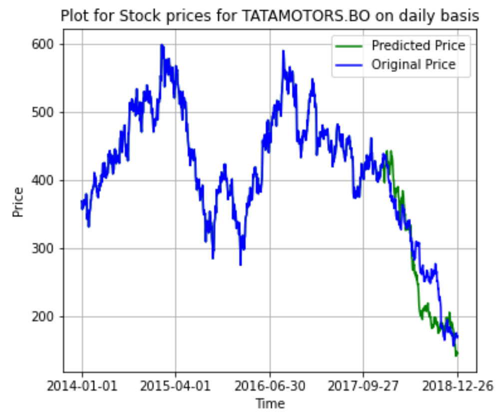

Plot for Stock prices for NESTLEIND.BO on weekly basis
Predicted Price
Original Price
Price
Time

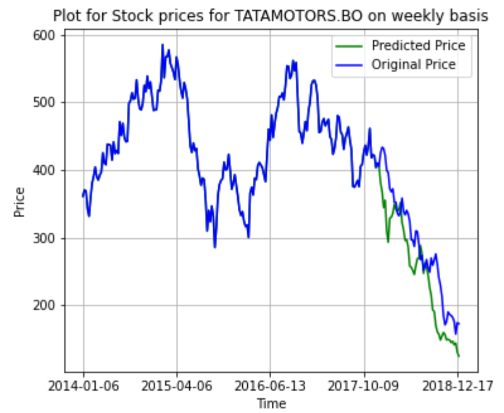

Plot for Stock prices for NESTLEIND.BO on monthly basis
Predicted Price
Original Price
Price
Time

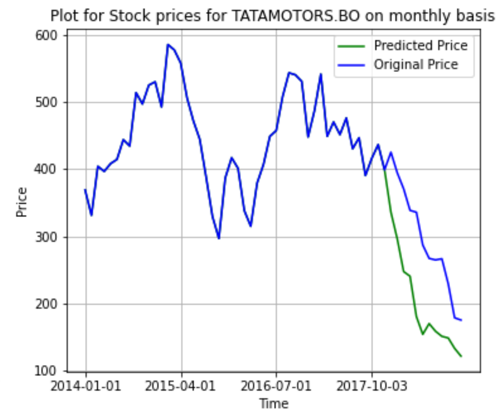

Plot for Stock prices for RELIANCE.BO on daily basis
Predicted Price
Original Price
Price
Time

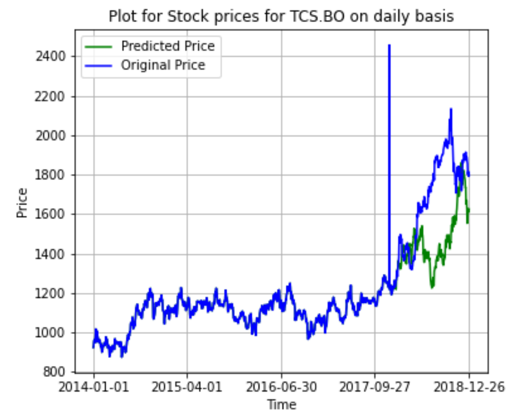

Plot for Stock prices for RELIANCE.BO on weekly basis
Predicted Price
Original Price
Price
Time

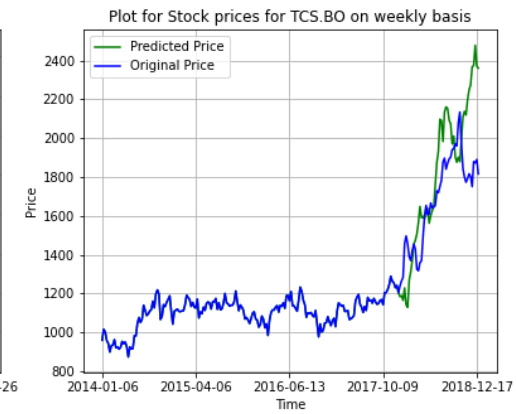

Plot for Stock prices for RELIANCE.BO on monthly basis
Predicted Price
Original Price
Price
Time

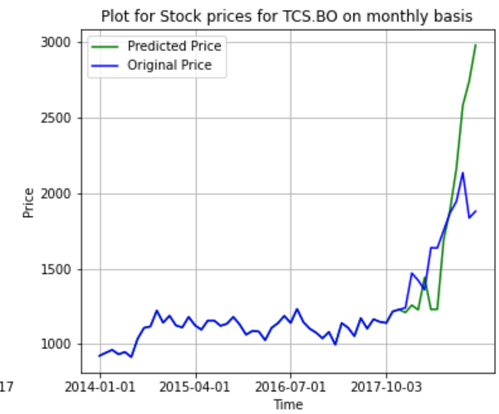

Plot for Stock prices for TATAMOTORS.BO on daily basis
Predicted Price
Original Price
Price
Time

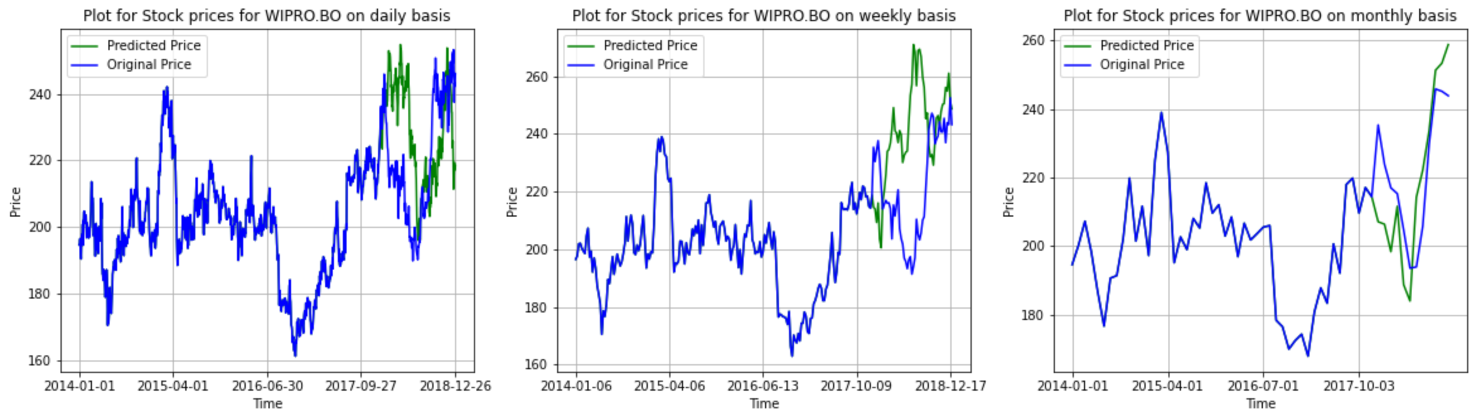

Plot for Stock prices for TATAMOTORS.BO on weekly basis
Predicted Price
Original Price
Price
Time


Plot for Stock prices for TATAMOTORS.BO on monthly basis
Predicted Price
Original Price
Price
Time

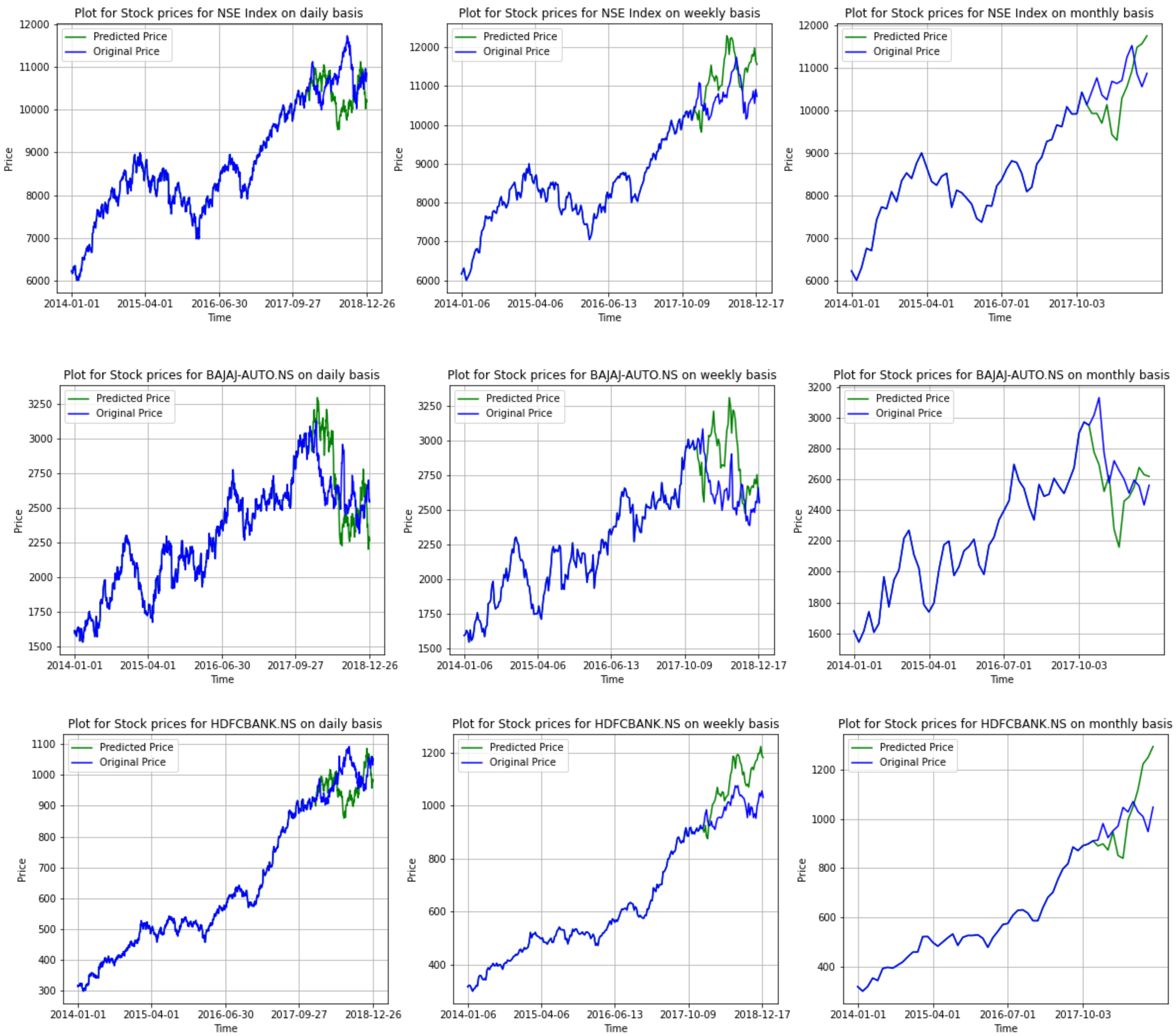

Plot for Stock prices for TCS.BO on daily basis
Predicted Price
Original Price
Price
Time

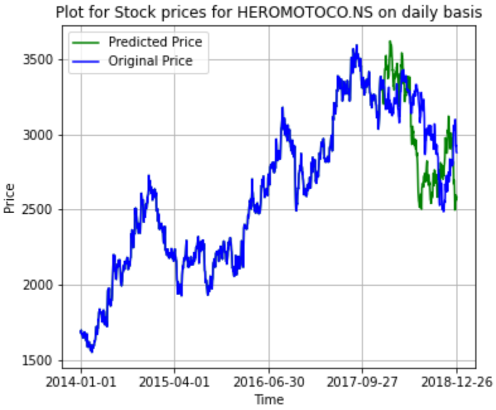
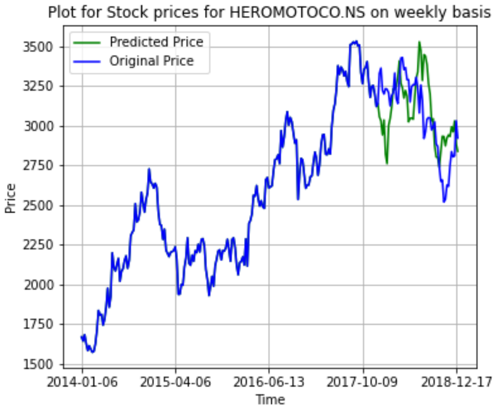
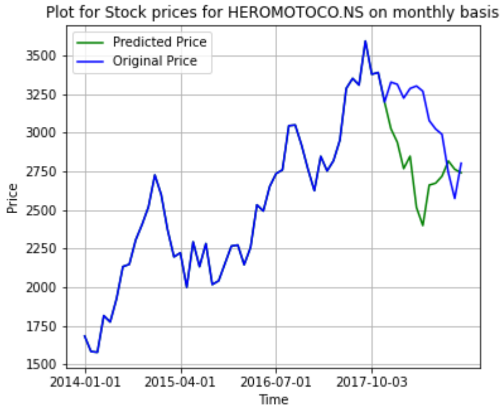
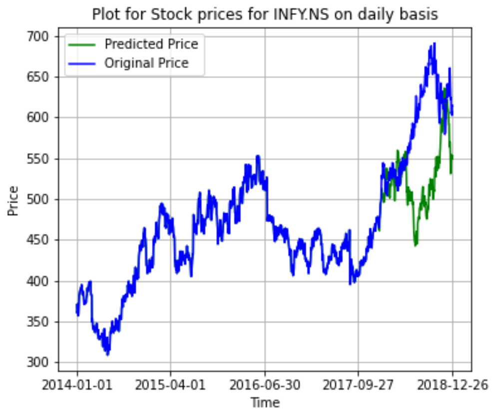
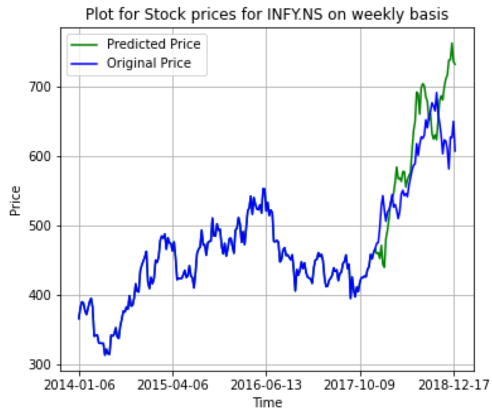
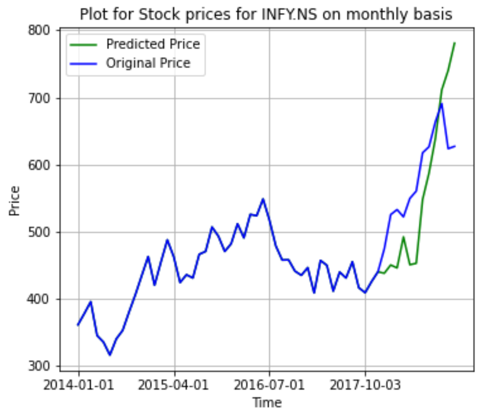
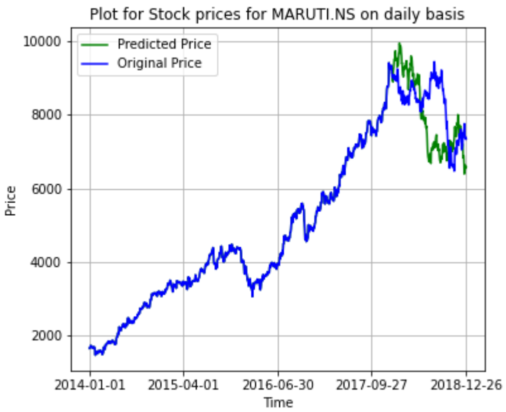
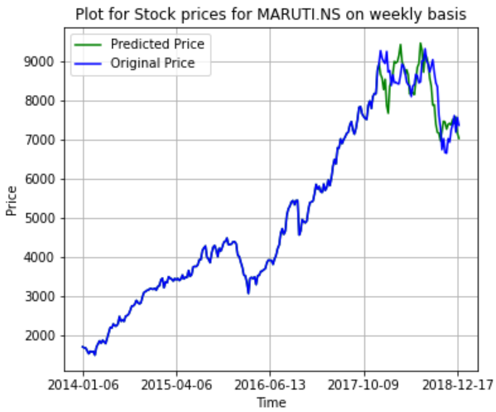
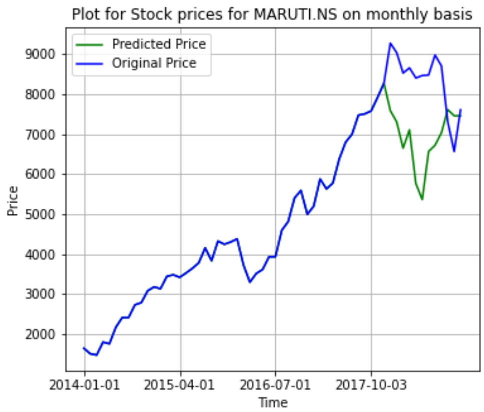
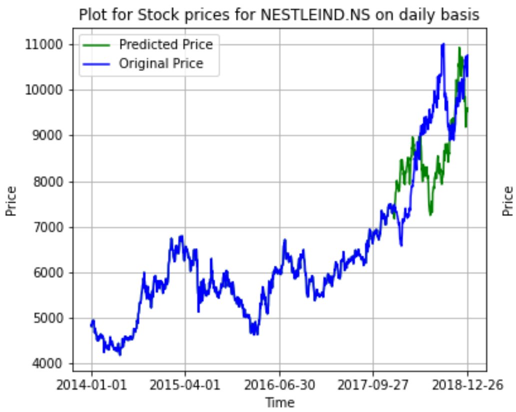
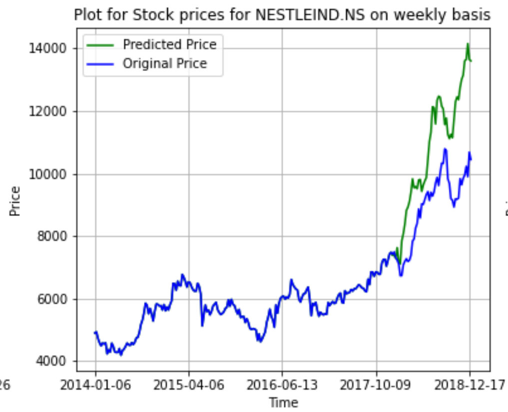
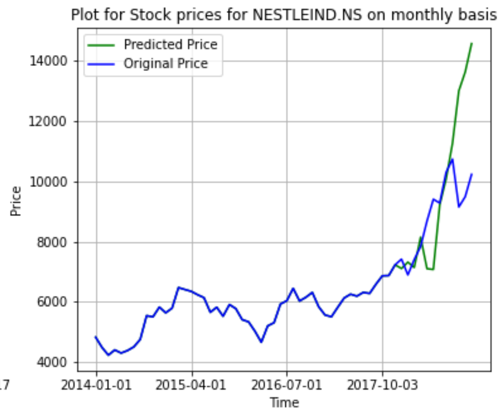

Plot for Stock prices for TCS.BO on weekly basis
Predicted Price
Original Price
Price
Time

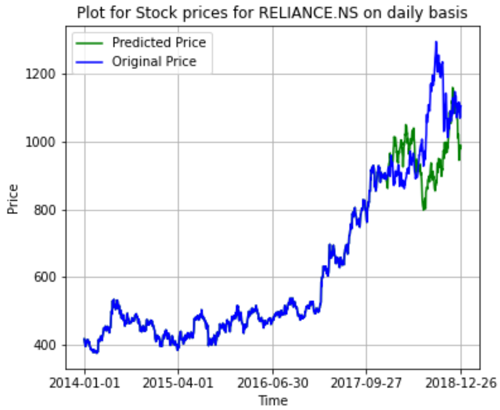

Plot for Stock prices for TCS.BO on monthly basis
Predicted Price
Original Price
Price
Time

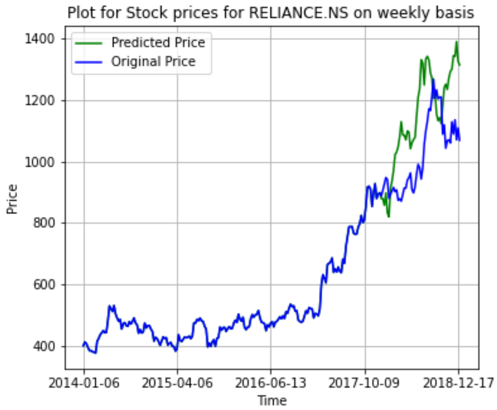


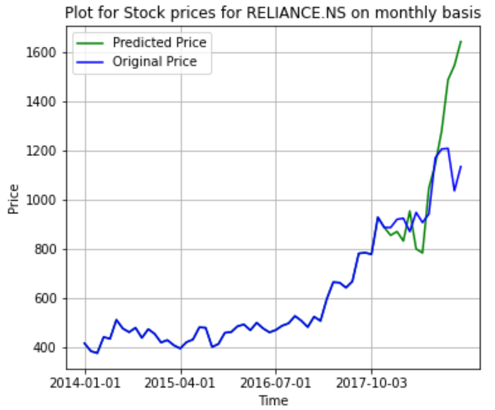
- The generated stock prices path along with the actual path for stocks in nsedata1 are:

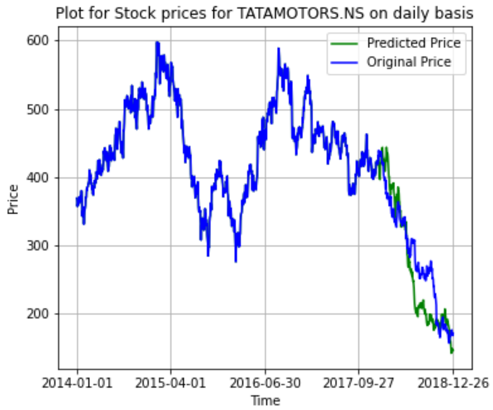


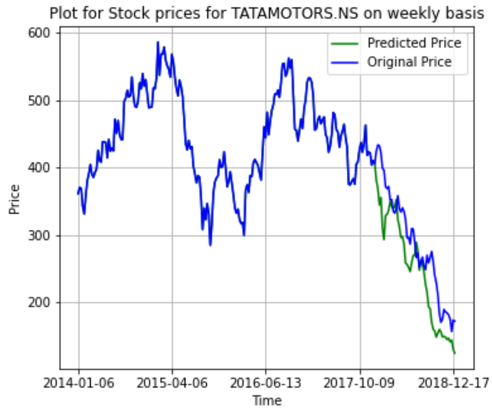

Plot for Stock prices for HEROMOTOCO.NS on daily basis
Predicted Price
Original Price
Price
Time
2014-01-01
2015-04-01
2016-06-30
2017-09-27
2018-12-26

Plot for Stock prices for HEROMOTOCO.NS on weekly basis
Predicted Price
Original Price
Price
Time
2014-01-06
2015-04-06
2016-06-13
2017-10-09
2018-12-17

Plot for Stock prices for HEROMOTOCO.NS on monthly basis
Predicted Price
Original Price
Price
Time
2014-01-01
2015-04-01
2016-07-01
2017-10-03

Plot for Stock prices for INFY.NS on daily basis
Predicted Price
Original Price
Price
Time
2014-01-01
2015-04-01
2016-06-30
2017-09-27
2018-12-26

Plot for Stock prices for INFY.NS on weekly basis
Predicted Price
Original Price
Price
Time
2014-01-06
2015-04-06
2016-06-13
2017-10-09
2018-12-17

Plot for Stock prices for INFY.NS on monthly basis
Predicted Price
Original Price
Price
Time
2014-01-01
2015-04-01
2016-07-01
2017-10-03

Plot for Stock prices for MARUTI.NS on daily basis
Predicted Price
Original Price
Price
Time
2014-01-01
2015-04-01
2016-06-30
2017-09-27
2018-12-26

Plot for Stock prices for MARUTI.NS on weekly basis
Predicted Price
Original Price
Price
Time
2014-01-06
2015-04-06
2016-06-13
2017-10-09
2018-12-17

Plot for Stock prices for MARUTI.NS on monthly basis
Predicted Price
Original Price
Price
Time
2014-01-01
2015-04-01
2016-07-01
2017-10-03

Plot for Stock prices for NESTLEIND.NS on daily basis
Predicted Price
Original Price
Price
Time
2014-01-01
2015-04-01
2016-06-30
2017-09-27
2018-12-26

Plot for Stock prices for NESTLEIND.NS on weekly basis
Predicted Price
Original Price
Price
Time
2014-01-06
2015-04-06
2016-06-13
2017-10-09
2018-12-17

Plot for Stock prices for NESTLEIND.NS on monthly basis
Predicted Price
Original Price
Price
Time
2014-01-01
2015-04-01
2016-07-01
2017-10-03

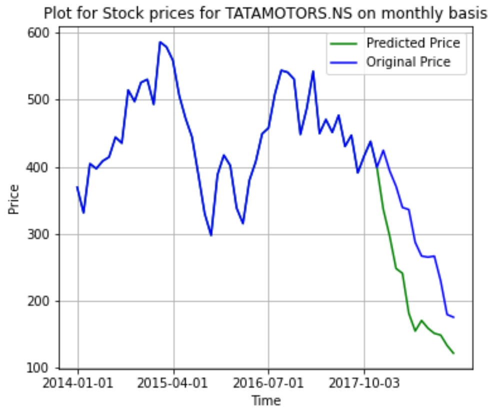

Plot for Stock prices for RELIANCE.NS on daily basis
Predicted Price
Original Price
Price
Time
400
600
800
1000
1200
2014-01-01
2015-04-01
2016-06-30
2017-09-27
2018-12-26

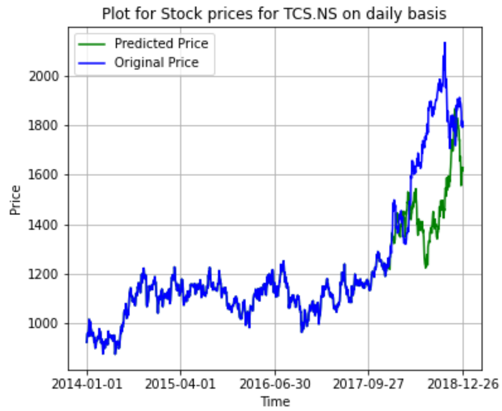

Plot for Stock prices for RELIANCE.NS on weekly basis
Predicted Price
Original Price
Price
Time
400
600
800
1000
1200
1400
2014-01-06
2015-04-06
2016-06-13
2017-10-09
2018-12-17

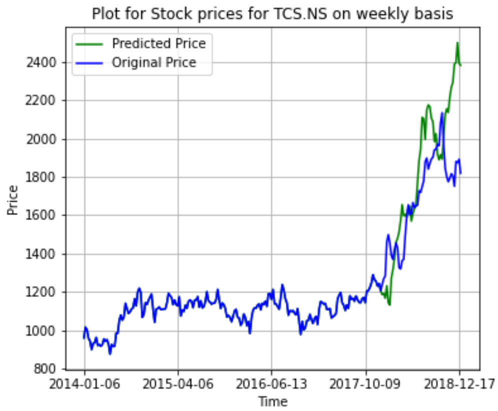

Plot for Stock prices for RELIANCE.NS on monthly basis
Predicted Price
Original Price
Price
Time
400
600
800
1000
1200
1400
1600
2014-01-01
2015-04-01
2016-07-01
2017-10-03

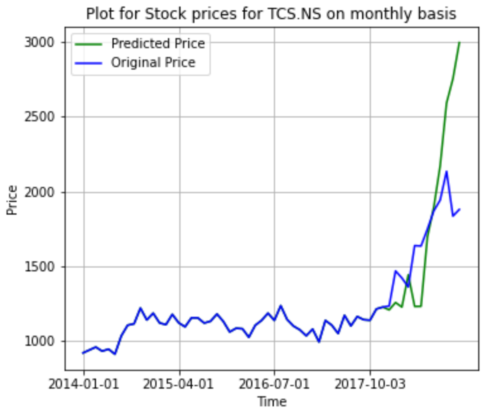

Plot for Stock prices for TATAMOTORS.NS on daily basis
Predicted Price
Original Price
Price
Time
200
300
400
500
600
2014-01-01
2015-04-01
2016-06-30
2017-09-27
2018-12-26

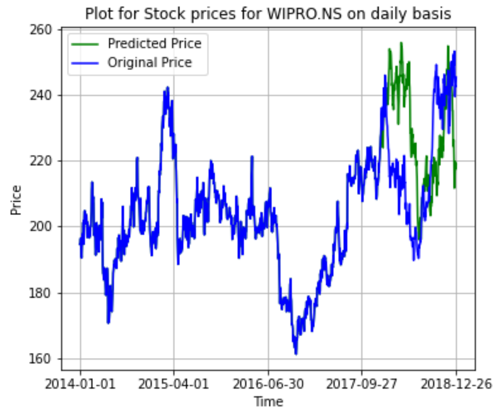

Plot for Stock prices for TATAMOTORS.NS on weekly basis
Predicted Price
Original Price
Price
Time
200
300
400
500
600
2014-01-06
2015-04-06
2016-06-13
2017-10-09
2018-12-17


Plot for Stock prices for TATAMOTORS.NS on monthly basis
Predicted Price
Original Price
Price
Time
100
200
300
400
500
600
2014-01-01
2015-04-01
2016-07-01
2017-10-03

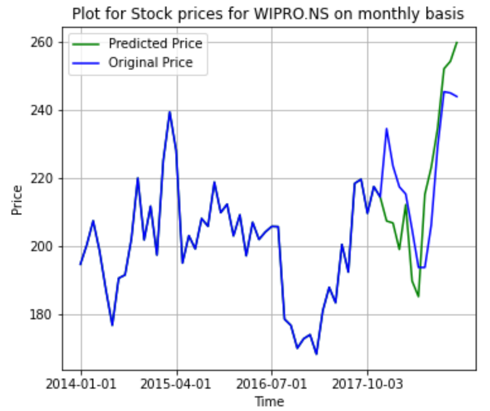

Plot for Stock prices for TCS.NS on daily basis
Predicted Price
Original Price
Price
Time
1000
1200
1400
1600
1800
2000
2014-01-01
2015-04-01
2016-06-30
2017-09-27
2018-12-26


Plot for Stock prices for TCS.NS on weekly basis
Predicted Price
Original Price
Price
Time
800
1000
1200
1400
1600
1800
2000
2200
2400
2014-01-06
2015-04-06
2016-06-13
2017-10-09
2018-12-17


Plot for Stock prices for TCS.NS on monthly basis
Predicted Price
Original Price
Price
Time
1000
1500
2000
2500
3000
2014-01-01
2015-04-01
2016-07-01
2017-10-03


Plot for Stock prices for WIPRO.NS on daily basis
Predicted Price
Original Price
Price
Time
160
180
200
220
240
260
2014-01-01
2015-04-01
2016-06-30
2017-09-27
2018-12-26


Plot for Stock prices for WIPRO.NS on weekly basis
Predicted Price
Original Price
Price
Time
160
180
200
220
240
260
2014-01-06
2015-04-06
2016-06-13
2017-10-09
2018-12-17


Plot for Stock prices for WIPRO.NS on monthly basis
Predicted Price
Original Price
Price
Time
180
200
220
240
260
2014-01-01
2015-04-01
2016-07-01
2017-10-03