Consider the data in the two databases "**bsedata1**" and "**nsedata1**" that you have already obtained. Now for each of the stocks and for each of the market indices do the following :

1. Plot the prices against time (daily, weekly and monthly).
2. Compute the returns R_i (daily, weekly and monthly) and plot histograms of normalized returns

$$\widehat{R}_i = \frac{R_i - \mu}{\sigma},$$

   where μ and σ are sample mean and sample standard deviation respectively. Superimpose on each of these histograms a graph of the density function $\mathcal{N}(0, 1)$.
   Now, zoom into the tails of all these plots. What are your observations ?
   You can do a boxplot of the returns. Again, what are your observations ?
   Also generate the quantile-quantile plots (daily, weekly and monthly). What are your observations ?
3. Will the observations be different if you instead use the log returns ?
4. Now, consider the daily data only for the period January 1, 2018 to December 31, 2021 (four years of data) and estimate the μ and σ using log returns. Assuming these μ and σ values (within the classical BSM set up), generate a path of stock prices that resembles (as closely as possible) the actual path of the stock price for the period of January 1, 2022 to December 31, 2022.
5. Repeat the above with weekly and monthly data.

Summarize your observations in your report. Remember that you need (and should) not put all the figures in the report. General representative figures are sufficient, along with figures which show different and interesting behaviours.

As you can see, what you are trying to do in this assignment is basically an exploratory data analysis of the stock price data. You are free to use other such basic statistical tools (like volatility clustering, autocorrelation function, etc) to gain a better understanding of the behaviour of the stock/index prices, keeping in mind the classical BSM setup.