Discussion on the Algorithm today:

Minute by Minute data for last two years will be provided.

If the lower limit for number of days is 5 days which is manually entered that means ideally we are looking for a co-relation to be perfect in 5 days and be within 0.2% (also a manual minimum input) in those 5 days but in the upper limit of 45 or 60 days (manual input) we are looking to have the corelation go up to 3 times (manual input) to 0.6% (manual input).

Please note that our Universe of Stocks will only be all Stocks that have F&O on them, Futures, Options on NSE and BSE. And, also commodities futures and options on MCX and NCDEX. And currencies and futures and options on currencies.

The same Algorithm should take the data on all these stocks, futures, options, Indices, ETFs, Currencies on different exchanges like NSE, BSE, MCX and NCDEX and prepare a corelation chart. For example, if the Data set is for 2 years, it should bear 80% weightage on the current year (manual input) and 20% on the previous year (to see if this is the best weightage combo that works for us which of course can be changed later on) and for example if my input parameter is 0.2% Corelation for a period of 5 days, it should look for co-relation patterns within any 5 days and within 0.2% for these inputs (and since most expiries for F&O is within 60 days, it should look for co-relation within 3 times the corelation range I have entered within 60 days – again 3 times or 4 times or 5 times should be able to be manually set by us). If required the Algo should not only find co-related items but also have an option to allow us to input two or more stocks, indices, ETFs etc. which we want to check the correlation on, or indices or ETFs to check the corelation along with the percentage like 0.2% and 5 days as highlighted in the example in Orange below. So here we know if the range is withing 0.2% entered for 5 days, it should look for all 5 days periods possible to analyse the data set to be within 0.2% in that data set, and if it is within 0.2% it should ensure that the outlier which should be within 3 times (which is within 0.6%) in a period within 5th day to 60th day and show us a green alert for this corelation as its within 0.2 in 5 days and within 0.6 in 60 days. In case the outliers which within 0.2% in 5 days but from 5th day to 60th day it is above 0.6 then those co-relations should be shown as a Red Alert (and a detailed day by day data should be presented of all the days of Outliers to analyse what the risk could be if the corelation misfires, and on a special case if I want to take this red alert trade based on this data I should be able to). The Algorithm should also throw Red Alerts when we find such outliers, so we could immediately enter the trade. In cases, if there are extreme outliers for co-related stocks or any outliers for corelated stocks (for example the 0.2% in 5 days is fully complied with but the 0.6 in 60 days is sometimes complied but sometimes not), for these cases also the Algorithm should also show these outliers with a alert in live markets, so a quick profit can be made from those.

And, the upper upper limit (manual limit) should be set for example as 1 or 1.5% or 2% above which the stocks are not shown at all and are not considered to be co-related. These also should be able to be set by the Algorithm.

The things that you could check for are co-relation are between stocks, indices, ETFs, different types of Oil, Silver, Natural Gas, Gold, Currencies traded on multiple exchanges like NSE, BSE, MCX, NCDEX etc. Another example in Co-relation would be you would take Nifty 50, and you would take a basket of stocks maybe even constituents that represent 85 to 90% of the weightage of Nifty 50 and check the corelation of that basket with the index and are always within 0.2% in 5 days and 0.6% within 60 days, so this would be a co-relation. So, if this co-relation miss fired to 0.6% it should be a Green Alert or on a very rare occasion to 0.8% then that should be Red Alert . The Algorithm should also be able to identify the group of stocks forming the index that could be co-related to the index itself, this group could form about 85% of the index, the Algorithm should be able to highlight this group if it is within 0.2% which is the desired input and another manual max limit of 0.6% and number of days as 5 or 6 or 7 days etc and a upper limit for 45 or 60 days.

Similarly this co-relation could be done for all indices against ETFs, it can be done from ETFs against 90% of it’s constituents.

Similarly the software should also have an option to manually enter two stocks, or two indices, or two baskets or indices vs stocks or ETFs to check the co-relation of the same based on the data set along with a lower limit like 0.2%, upper limit as 0.6% and number of min days as 5 days and number of max days at 60 days.

Another co-relation the software should be able to find is within the segments of the same stock, or index or ETF. For example, the co-relation of Stocks or a given ticker or script to their own futures and synthetic options (long call & short put of same strike would be a long future and long put short call of same strike would be short future). For example, at what price will Futures on NSE be trading relative to BSE or NSE Cash price on 1st day of the expiry month for that stock or index for current month futures (30 days to expiry) and next month futures (60 days to expiry). Here you could take Statistical Data based on last 2 years and VIX and see what percentage of the price is higher for that given VIX, and you could also use the interest rate formula to calculate the theoretical value for current month and next month futures, the theoretical price of the future which is 60 days to expiry would be Stock Price which is 100 \*( 1+(.06\*60/365) which is 100.98 (theoretical value) so if next month future is below this it would be cheap and you would also compare this to statistical data mean and to VIX. You would then take this Future price and compare this to Synthetic Options that is a combination of a Long call short put or Short Call long Put to see which is cheaper. So, if Next month Future is generally priced at 100.98 as per formula or at 101.2 Statistically but future is trading at 100.5 you would think it is cheap because it is trading lower than our theoretical formula and also the Statistical data mean from our data set and you could then ask this platform to give you an indicator that it is trading cheap by so many percentage (in this case its above 0.5% cheaper) and the one that is trading cheapest by the lowest percentage obviously would become the most attractive spread. In some cases the next month future even though it is trading at 101.3 could be cheaper than the current month as it is 0.75% cheaper than the theoretical or statistical value. Another way to look at this would be to either just compare it to Theoretical data, or just to Statistical data or a combination of Theoretical and Statistical Data. So, one part of the Algorithm tells you the co-relation between different tickers, indices, ETFs. And, another part of the Algorithm tells you corelation within a given ticker, that is within a given stock, or a future or a indices, or and ETF, the co-relation between the underlying, the future and the option of that ticker in multiple exchanges. It is also important to note the corelation of NSE Cash and BSE Cash. So if BSE Cash for a stock is cheap, it could show the spread for that ticker a future or synthetic option of that stock on another exchange that is expensive, this is also a corelation.

In all these situations, it is important to note that the Volume and Open Interest is shown. And there should also be a column to Input Qty so the desired Quantity is less than 5% of the Volume traded for that day and that month, and if it is higher than 5% then it should alarm us with a red alert.

Certain Commodities could be co-related with Currencies, Stocks or Indexes or combinations of these too.