**ASSIGNMENT 3**

**REPORT**

* The first seven bits of my code were to lead the data of all the nifty50 stocks and to put them in a dataframe named df.
* Next, I wanted to use the function corr(), which finds the pairwise correlation of all columns. For that I redefined and created a new dataframe in which I put up all the closing prices date wise under each ticker individually, and then used the corr() function directly.
* Next, I created a correlation matric and put a threshold at 0.75 to get desired pairs, I got the following result.

[('BAJFINANCE', 'BAJAJFINSV', 0.8040147094182983), ('HDFCBANK', 'HDFC', 0.9371835598426792), ('HINDALCO', 'TATASTEEL', 0.7782710297061852)]

* I decided that since we already performed a similar strategy with HDFC and HDFCBANK, I would use the strategy for BAJFINANCE and BAJAJFINSV which has a correlation constant of 0.804014….
* Then using the reference of the code we used in class, I downloaded the data again (I had issues incorporating data from the dataframe directly in bit(21))
* Then calculating the z-score for finding striking points, I executed the remaining code well.
* In the end I generated the following results with an initial investment of 1,00,000
* current value = 142047.00524902344
* returns = 42.04700524902343%
* Sharpe Ratio: 2.219180232732469
* Maximum Drawdown: -2.5541430877502087
* Performing the sensitivity analysis, I realized that increasing the sensitivity of the strategy by making the buy and sell calls strict may not increase the profitability and reducing the sensitivity of the strategy also does not strictly increase the profitability.