**FEC PROJECT - Design and Analysis of Technical Indicators**

**Team Size: 1 or 2**

**Submission Deadline: 21st December 2023 EOD**

**TASK**

Your task is to design and analyse your own technical indicator for the Indian equities market using the daily OHLCV data. The indicator must be constructed with a well-defined mathematical formula which you will come up with. You will also define the set of rules which will determine the entry and exit trading signals generated by that indicator.

You may refer to existing indicators for inspiration, however make sure that the indicator you come up with is unique and one-of-a-kind. The following article covers the basic categories and types of indicators: <https://www.visualcapitalist.com/12-types-technical-indicators-stocks/>

Write a report which explains the working of your indicator and the logic behind how you came up with it. It will be a bonus if your analysis is backed by mathematical reasoning and inferences. You may also do some preliminary research on Indian markets to understand what kind of indicators would work best.

You may also come up with multiple technical indicators which work together or complement each other to generate trading signals.

Once you have designed your indicator, you must code it using Python and plot it along with the corresponding stock prices. Choose any 3 stocks from the Indian equities and plot the indicator and stock price for them. Analyse the charts and demonstrate how the indicator is generating entry and exit signals.

Finally, to test the performance of your indicator you must code a trading strategy using it and backtest on 5-year historical data of any stock of your choice. Assume an initial capital of Rs.1,00,000.

Display the returns of your strategy and compare the results with the benchmark performance i.e buy-and-hold returns of the stock. Please make sure your strategy does not incur any look-ahead bias, so that it is also valid to be used in real-time markets.

Resources for Stock data visualisation in Python:

<https://www.youtube.com/watch?v=yQtT_4RgT2k>

<https://www.youtube.com/watch?v=QHR2tgudgHg>