The indicators are ALL you Need.

Algorithmic trading is derived from technical indicators. How you utilise the indicators and create new features from them decides how effectively you can make your trading decision. In this particular task you will be required to code various indicators from scratch, integrate them to create new features that you can use to make your effective trading decision. The recommended language for this task is python.

SMA , EMA , MACD , OBV , Bollinger Bands(BB) , ADX, Stochastic Oscillators, ATR, Standard Deviation,... and the list goes on.

You need to use some of these indicators or any new indicator of your choice that is not mentioned here. You need to consider at least 5 technical Indicators, and create new features using them if required to make a trading decision

Using these indicators you can predict when you can buy,sell or hold.

Extract the data for any nifty50 company on any time frame of your choice using yfinance.

Calculate the technical indicators from scratch in python and create new features using them for the company of your choice on the OHLC Data.

Now, when you have all the features, you have to construct your target variable i.e Buy, Sell or Hold. Try to find various methods using which for each stock using the indicators, how you can predict Buy, Sell or Hold at each ticker.

Now, we come to the model building part. You have the features which are the indicators and the new features that you have constructed and the target variables which are Buy, Sell or Hold.

You have to build a multivariate logistic regression model from scratch to predict the target variable which is the trading decision. Report the F1 score, accuracy and AUC-ROC Score.

In summary,

1. Extract Data for any Nifty50 company within a time frame of your choice with ticker size of 1 Day.

2. Now, you have to write python functions from scratch for calculating various technical indicators of your choice minimum 5.

3. Try to construct new features from the initial set of indicators of your choice, using various statistical techniques.

4. Now, you have different features of your choice i.e the indicators, you have to make trading decisions on 1 day ticker that is buy, sell and hold, try to read various blogs on how you define positions using technical indicators.

5. Now, you have the target variables for each day, you need to fit a multivariate logistic regression model coded from scratch.

6. Report various metrics for classification like F1- Score , Accuracy and AUC-ROC Score.