Introduction to Fintech HW1 Report

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- The TI you adopt and why you choose this TI. And how you use the TI for trading.
  The chosen technical indicators for this trading strategy are the Relative Strength Index (RSI) and Bollinger Bands. The reason that I chose RSI is because it measures the speed and change of price movements. It can detect the overbought and oversold conditions of the market. As for the Bollinger Bands, it is used to gauge the volatility and relative price levels over a period. I used the signal that it delivers when it crosses the end of the band. I adopted these two indicators together in order to create a more robust strategy because it doesn't depend on a sole reason. In general and to be precise, my strategy looks like the following: If RSI < alpha and currentPrice < lower BBand : do buy action, else if RSI > beta and currentPrice > higher BBand: do sell action, else do hold action.(parameters alpha, beta would be introduced in the next question)
- What are the modified parameters of your strategy, and how do you fine tune the parameters.
  The parameters that I tuned are alpha, beta, RSI period and BollingerBand period. The last two parameters are only for determining the window length for its MA calculation. The alpha, beta are for the RSI thresholds. For instance, alpha might be 30, then if RSI < 30 and currentPrice < lower BBand , I'll do buy action. I fine tune these parameters by simply adopting the sample method, which is brute force searching over a given range. By adopting this method, I came up with a theoretically maximizing return rate parameter combination.
- Any other things you have done to optimize your strategy.
  After doing research and thinking about reasonable conclusions, I manually shifted the result of alpha and beta. The original combination is (alpha, beta, RSIperiod, Bollingerperiod) = (15,85,14,7), which I think is a slightly non-realistic result which might only fit some theoretical circumstances. Thus, I finetuned again with a smaller range, and manually chose the combination that doesn't achieve maximum but still performs well, which is (alpha, beta, RSIperiod, Bollingerperiod) = (22,83,16,16).