Steps to determine the rational for algorithm

Step1 determining the portfolio performance and stock performance of the basket

* Calculate the individual performance and portfolio for 1 month, 3 month, 6 month, 12 month, 24 months, 36 month and 60 month.
* The performance parameters are based on compounding(annulisesed) and cumulative if required.
* Beta and alpha calculation can be determined for comparison.
* Determine attractiveness based on mean and standard deviation. Once this is determined that will help us determine absolute attractiveness and relative attractiveness.
  + Absolute attractiveness - is purely based on price performance ie. One sigma, two sigma nd three sigma and so on. This may work over long term but may not always give right picture mainly when markets are unidirectional either up or down. When markets are down for long period everything will become too attractive and vice versa when markets are rising.
  + Relative attractiveness is based on internal ie within basket of portfolio attractiveness relative to other stocks and one is related to benchmark index like Nasdaq or S&P 500. Means if market has gone up 10% and stocks have gone up 15% and so everything is less attractive than its common phenomena that means they are still at par. So step by step attractiveness can be checked .
  + Depending on either active taken algorithm can be defined. If everything is less attractive then less attractive is better than least attractive.
  + Portfolio attractiveness vis s vis benchmark may sometime determine cash holding in overall portfolio. As sometimes basket realignment itself may not help we may increase or decrease cash in portfolio based on that.
* Outlier determination –
  + Sometime one month, 3 month and 6 month substantial outperformance or underperformance which can be determined based on relative attractiveness may determine outlier performance.
  + In such cases normal rebalancing criteria needs to be revisited.
  + Example : if we have 10% sell when stock becomes less attractive from attractive based on say 3 month rebalancing criteria than if its outlier we may apply 50% rebalancing of original ie we may actually sell 5% only.. as the velocity of outlier may be based on fundamental reasons. (This can be over the period added as separate determining criteria ) – like if the whole sector has gone up 30% and stock has gone up 40% maybe not outlier in terms of sector but if sector itself has outperformed benchmark by vide margin than there is a reason for it to be outlier.
  + We will have later on make system calculate and determined based on different eiterative process to work on that

Immediate application

1. Rebalancing to be considered based on 2 or 3 months
2. First start with 2019-2022 data to determine attractiveness.
3. Check if on model portfolio of stocks and etf if alogorithem is applied how if impacts the performance vis a vis Becnmark and Portfolio basket performance in absence of algorithm based changes.
4. As the benchmark and portfolio performance is already available we will be able to determine impact
5. For rebalancing following we can start with
   1. As soon as one level less on scale of attractiveness we don’t do anything in negative to first positive attractiveness.
   2. If there are two level change in either direction it triggers rebalancing ie we sell less attractive by 10% of that time holding to distribute in others which are two level below that ie more attractive in proportion of there levels ie if there are 5 stocks to be distributed the most attractive will have larger proportion say 40 and than 30 and than 20 and such
   3. If outlier is there than for same we may do 5% sell and distribute.
   4. This is purely based on zero cash. We will account for cash separately when some testing is done.