Developer basic requirements:

Must sign and complete NDA

Must use Microsoft Teams for all communications

Must provide detailed documentations for projects

Code must be written in proper structure in accordance to best practice

Must memorialize questions/TODOs/and development issues – Trello or google Driver

Must demonstrate that all scripts and algorithms delivers the proper solutions

Must utilize git and git repository (github)

Project diagram illustrating the inner workings and connections of all moving parts

Project timeline and deliverables

Functionality - Internal

1. Gather and scrub the required data
   1. Internal
      1. IB report - instrument allocation and performance
      2. IB report - sector allocation and performance
      3. IB report - Attribution effects
      4. IB report - Benchmark returns
   2. External
      1. Need to locate data provider
2. Take in the fund's monthly return
   1. Append new monthly return input from user
3. Populates monthly calculations
   1. Calculate - Risk Analytics
      1. Sharpe Ratio
      2. Sortino Ratio
      3. Treynor Ratio
      4. Information Ratio
      5. Upside/Downside Deviation
      6. Upside/Downside Capture Ratio
      7. Volatility
      8. Beta
      9. Return Distributions
         1. Kurtosis
         2. Max
         3. Min
         4. Median
         5. Skew
         6. Top/Bottom Quartile
      10. Return per unit of risk (annualized/volatility)
      11. VaR/CVaR (daily returns)
   2. Calculate - Performance
      1. Cumulative
      2. Annualized
      3. Performance by instrument (IB data)
      4. Performance by sector (IB data)
      5. Instrument contribution to performance (IB data)
   3. Calculate - Allocations and Attribution effects
      1. Allocation by Instrument (IB data)
      2. Allocation by Sector (IB data)
      3. Current Allocation:
         1. By company
         2. By sector
         3. By Market Cap
      4. Correlation by Positions
      5. Sector attribution effects (IB data)
      6. Sector contribution to returns (IB data)
   4. Graph - Risk Analytics (mimic PowerBi dashboard)
   5. Graph - Returns (mimic PowerBi dashboard)
   6. Graph - Allocations (mimic PowerBi dashboard)
   7. Graph - Distribution Curve (Mimic PowerBi dashboard)
4. Push to factsheet and presentation
   1. Push to website
   2. Create PDF report
5. Push to dashboard
   1. Publish to webapp all charts and graphs

Functionality - Webapp Dashboard

1. Layout Formats
   1. Mimic PowerBi layout
   2. Single page instead of tab
   3. Clear division between Returns, Risks, Allocation
      1. Collapse to display the top KPI
      2. Expand to see full view
   4. Left side options, selections
   5. Right side actual tables, charts, and graphs
   6. Top navigation bar: Logo (left), Tools (right) for print, convert to pdf, email, expand/collapse all
2. Dashboard webapp functionalities

Calculations dynamic based on selection:

* Provide default selections (Rolling 12mo, BM: SPX, ACWI, frequency: monthly)
* Benchmark selection
* Time period
  + Monthly
  + Quarterly
  + Annually
  + Rolling basis - 12, 24, 36, inception,
  + user select

Benchmark expands to other indices - limits to selection of 3 BM for comparison

Allows for data dump in csv and pdf

* Specific chart/table
* Entire dashboard at current setting

1. Develop for Mobile as well