Parmenion Technical Test for Developers

The technical test consists of a coding test and a few follow-up questions. You can take as long as you want but we would allow at least 4 hours.

Once complete please upload your solution to Github or similar. You should include two folders - one with all the code required to run your solution and the other with the answers to the questions as a PDF.

Code Test

We need to add a simple tool to the adviser's site to allow them to generate a projection to determine if their client's investment targets are realistic. It will be a single web page and will consist of a few inputs and a graph to show output.

Inputs

- Lump Sum Investment (£)
- Monthly Investment (£)
- Target Value (£)
- Timescale (years)
- Risk Level (low / medium / high)

Assumptions

- Ignore inflation
- Ignore any adviser/platform charging, this is all wrapped up in the growth figures
- Annual Growth Figures are:
    - Low Risk
        - Wide Bounds: 1 - 3%
        - Narrow Bounds: 1.5 - 2.5%
    - Medium Risk
        - Wide Bounds: 0 - 5%
        - Narrow Bounds: 1.5 - 3.5%
    - High Risk
        - Wide Bounds: -1 - 7%

        - Narrow Bounds: 2 - 4%
- Data for the output is calculated monthly

Output

- Single Graph
- Time (years) on X-Axis
- Value (£) on Y-Axis
- Marker Lines to indicate
    - Target Amount
    - End Timescale
- Graph Line to Indicate
    - Total Invested
- Coloured Regions to Indicate
    - Expected Value based on Growth Bounds for selected Risk Level

Technical Requirements

- Requirements
    - Visual Studio Solution
    - Calculation of projection is done backend via a web service written using .Net Core / C#
    - Runs on modern browsers with no browser plugins required
- Flexibility On
    - Look/Feel
    - Browser Compatibilty
    - Libraries Used
    - Graph can be rendered frontend or backend
    - User Interface
    - Pretty much everything else!

Level of Finish/Timescales

- Prototype
    - It doesn't need to be complete, just demonstrate the concepts
- Approximate Timescale
    - It should be possible to rough up a prototype in half a day if everything goes smoothly, don't worry about spending ages on it but let us know how long you did spend

- Feel free to drop areas of functionality if they are a significant time drain, the aim is a prototype not a finished product

Follow Up Questions

1. How long did you spend on the code test?

   [Tini] Approximately 4.5 hours

2. What went well?

   [Tini] I could find canvasjs plugin to plot the graph with static values.

3. Was there anything that was attempted but was not possible to get working in the time so is not visible in the code?

   [Tini] I tried to find the formula for investment projection but could not find one, that tool lot of time and less time spent on actual coding.

4. What would you do to improve it / continue development?

   [Tini] If I could get refined requirement with exact formula that will help me to return the relevant data from API controller.

   Using this data, I can plot a graph easily.