Technical Interview – Candidate

# Super Simple Stocks Assignment – Candidate

## Requirements

1. The Global Beverage Corporation Exchange is a new stock market trading in drinks companies.
   1. Your company is building the object-oriented system to run that trading.
   2. You have been assigned to build part of the core object model for a limited phase 1
2. Provide the complete source code that will:-
   1. For a given stock,
      1. Given any price as input, calculate the dividend yield
      2. Given any price as input, calculate the P/E Ratio
      3. Record a trade, with timestamp, quantity, buy or sell indicator and price
      4. Calculate Volume Weighted Stock Price based on trades in past 5 minutes
   2. Calculate the GBCE All Share Index using the geometric mean of the Volume Weighted Stock Price for all stocks

## Constraints & Notes

1. Written in one of these languages - Java, C#, C++, Python
2. The source code should be suitable for forming part of the object model of a production application, and can be proven to meet the requirements.
3. No database, GUI or I/O is required, all data need only be held in memory
4. No prior knowledge of stock markets or trading is required – all formulas are provided below.
5. The code should provide only the functionality requested, however must be production quality.

### Table1. Sample data from the Global Beverage Corporation Exchange

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Stock Symbol | Type | Last Dividend | Fixed Dividend | Par Value |  |
| TEA | Common | 0 |  | 100 |  |
| POP | Common | 8 |  | 100 |  |
| ALE | Common | 23 |  | 60 |  |
| GIN | Preferred | 8 | 2% | 100 |  |
| JOE | Common | 13 |  | 250 |  |
| *All number values in pennies* | | | | | |

### Table 2. Formula

|  |  |  |
| --- | --- | --- |
|  | Common | Preferred |
| Dividend Yield |  |  |
| P/E Ratio |  | |
| Geometric Mean |  | |
| Volume Weighted Stock Price |  | |