# IRQ Assignment – Candidate – 15 mins

## Requirements

1. The International Refreshment Quoter 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 10 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 International Refreshment Quoter

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 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 |  | |