Assignment - Super Simple Stocks

Requirements

- 1. Provide working source code that will:
 - a. For a given stock,
 - i. calculate the dividend yield
 - ii. calculate the P/E Ratio
 - iii. record a trade, with timestamp, quantity of shares, buy or sell indicator and price
 - iv. Calculate Stock Price based on trades recorded in past 15 minutes
 - b. Calculate the GBCE All Share Index using the geometric mean of prices for all stocks

Constraints & Notes

- 1. Written in one of these languages:
 - Java, C#, C++, Python
- 2. No database or GUI is required, all data need only be held in memory
- 3. Formulas and data provided are simplified representations for the purpose of this exercise

Table 1. Sample data from the Global Beverage Corporation Exchange

Stock Symbol	Туре	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	Last Dividend	Fixed Dividend .Par Value		
	Ticker Price	Ticker Price		
P/E Ratio	Ratio Ticker Price			
	Dividend			
Geometric Mean	$\sqrt[n]{p_1p_2p_3p_n}$			
Stock Price	$rac{\sum_{i} \mathit{Trade\ Price}_{i}{ imes}\mathit{Quantity}_{i}}{\sum_{i} \mathit{Quantity}_{i}}$			