

Example Assignment – Super Simple Stocks

Requirements

1. Provide working source code that will :-
 - a. For a given stock,
 - i. Given a market price as input, calculate the dividend yield
 - ii. Given a market price as input, calculate the P/E Ratio
 - iii. Record a trade, with timestamp, quantity of shares, buy or sell indicator and trade price
 - iv. Calculate Volume Weighted Stock Price based on trades 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 simli

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	$\frac{\text{Last Dividend}}{\text{Market Price}}$	$\frac{\text{Fixed Dividend} \cdot \text{Par Value}}{\text{Market Price}}$
P/E Ratio		$\frac{\text{Market Price}}{\text{Dividend}}$
Geometric Mean		$\sqrt[n]{p_1 p_2 p_3 \dots p_n}$
Volume Weighted Stock Price		$\frac{\sum_i \text{Trade Price}_i \times \text{Quantity}_i}{\sum_i \text{Quantity}_i}$