FTEC5530 Homework I. Calculation of stock daily statistics

Stock daily price time series is provided in the year of 2020 (stockdata.csv)

1. Estimate the Average Daily Volume (ADV), Average Daily Turnover (ADTV) and daily volatility of each stock in one year and in each month.

Result should be in a format like below:

Overall result in one year:

Stock	ADV	ADTV	Volatility
000001.SZSE			
000858.SZSE			
600030.SHSE			
600519.SHSE			
601318.SHSE			

Monthly

Month	Stock	ADV	ADTV	Volatility
2020-01	000001.SZSE			
2020-01	000858.SZSE			
2020-01	600030.SHSE			
2020-01	600519.SHSE			
2020-01	601318.SHSE			
2020-02	000001.SZSE			
2020-02	000858.SZSE			
2020-02	600030.SHSE			
2020-02	600519.SHSE			
2020-02	601318.SHSE			

2. Based on the one-year data, estimate the correlation matrix as below

	000001.SZSE	000858.SZSE	600030.SHSE	600519.SHSE	601318.SHSE
000001.SZSE	1				
000858.SZSE		1			
600030.SHSE			1		
600519.SHSE				1	
601318.SHSE					1

Requirement:

Provide both of your code script(python/R/MATLAB/KDB or other languages) and result, using KDB will be a plus.