1. Use Pandas to read the daily prices of HSI constituents (given file), with the date being the index. Fill the blank with linear interpolation (Hint: use 'interpolate' from pandas).

2. Create a weekly (every Friday), and monthly (every monthend) dataframes

3. Use Pandas to calculate the corresponding daily, weekly and monthly returns of the above 3 dataframes

4. For the weekly dataframe, calculate the covariance matrix (50 x 50). **OUTPUT the file as covHSI.csv**

5. For the daily returns, use matplotlib to plot histogram for Tencent (700 HK), you will need to take away all the 'NaN'. Use bins=100. Normalize the histogram (using normed='True'), make the title '700 HK', font size=10. **Output the histogram and paste it in word, name it Graph.doc**

6. Perform a "normaltest" using "stats" from "scipy" on EACH of the constituents of HSI using the weekly returns. Do NOT use for loop, use map and lambda function instead. You may write a customized function which handle the 'NaN' first and then perform the 'normaltest'. Plot the histogram of the corresponding P-values of the normal test and paste it into Graph.doc. Are the constituents' return normal?

7. Perform an autocorrelation test ("acorr_ljungbox" from "statsmodels.stats.diagnostic") to check the IID property on EACH of the constituents of HSI using the weekly returns. Use a max lag of 5. Do NOT use for loop. Similarly you may write a customized function to handle the 'NaN' and then output the P-values of the test directly. Plot the histogram and paste it in Graph.doc. Are the constituents' returns exhibiting zero serial correlation across lags?

8. Using the daily return dataframe: For each stock, for each year and month, calculate the standard deviation of daily returns. Output the result into a dataframe and output as HSI_vol.csv