

18 HW #8A: SQL Window Functions

Using only the functions and syntax that we have learned in class, please provide a query to answer the following questions. If a dataset is not specified, please use the 2010 dataset. **Do not create any tables or views.**

Before beginning the assignment, *please read the data dictionary to better understand the data.* When doing so, keep an eye on data types for different columns as well as table organization.

- If no year information is provided for a financial question, assume 2010.
- If the query returns a significant number of rows, please only copy a few rows in your response.

The best approach to learning from these problems is to complete them using pen and paper, working by yourself and then using your group to double check your results. The First Five problems provide a short overview of the core concepts in the assignment, so make sure that you understand them. The Main Problems section contains questions which range from easy to very difficult. Remember to don't get stuck! If a problem is taking a long time or is too difficult, *use your group!*

First Five

1. Write a query which returns, for stocks in 2010, the symbol, the date and the cumulative sum of traded volume for that stock from the start of the year to that date, including that date.
2. Repeat the above without an analytic function.
3. Write a query which returns, for stocks in 2010, the symbol, the date and the cumulative sum of traded volume for that stock from the start of the year to that date, *not* including that date.
4. Repeat the above without an analytic function.
5. Write a query which returns, for the stocks in 2010, the symbol, the date, and the moving average of the last five days (including the current date) of closing prices for that stock.

Main Problems

1. Write a query which returns, for stocks in 2010, the symbol, the date and the cumulative sum of traded volume for that stock from the start of the *current month*, including that date.
2. Repeat the above without an analytic function.
3. Write a query which returns, for stocks in 2010, the symbol, the date, the ratio of that days stock closing price to the stock's closing price on the first day that the stock is traded that year ($\frac{\text{current_price}}{\text{first_price}}$)
4. Write a query which returns, for stocks in 2010, the symbol, the date and the difference between the max closing price that the stock achieves in 2010 and the current day's closing price.
5. What is the median closing price for all stocks on January 4th, 2010?
6. For stocks in 2010, write a query which returns the closing price, symbol, retdat and the nominal change between yesterday's closing price and today's opening price. Ignore holes in the data, so that if the stock misses a day the change in price is from the last time listed.
7. Write a query which returns, for stocks in 2010, a set of unique symbols and a column which is the alphabetical rank (e.g. so "A" should be 1, "AA" should be 2, etc.)