SIGFIG

Please send the answers to the following via email. The questions might be open-ended so state any assumptions you make. The more we can tell of your thought process, the better it is.

Question 1:

Suppose your team needs to launch a new alerts feature called “Stocks Your Friends are Trading”. The alerts logic is based on the following naïve rules:

- A user should only be alerted to stocks their friends have bought or sold in the past week.
- BUY and SELL alerts are driven by the net number of friends buying a stock – if 5 friends bought shares in GOOG, and 2 friends sold shares in GOOG, the net number of friends buying GOOG is 3. If the net number is > 0, we'd indicate more friends are buying GOOG (BUY alert); if < 0, more friends are selling GOOG (SELL alert); and if 0, we ignore.
- Alerts are prioritized by activity trend, e.g. a net number of 5 friends selling GOOG is shown before a net number of 4 friends buying YHOO.

You are provided two library functions to help you.

- getFriendsListForUser – returns a list of user IDs (strings that uniquely identify a user) representing the friends of a user.
- getTradeTransactionsForUser – returns a list of trades represented by a string “<date>,<BUY|SELL>,<ticker>”, e.g. “2014-01-01,BUY,GOOG”, ordered by trade date with the most recent trade first in the list.

Please:

1) Write a function that provides a ranked (high to low) list of alerts. You can represent an alert by a string “<net_friends>,<BUY|SELL>,<ticker>”, e.g. “5,SELL,GOOG” to indicate a net number of 5 friends selling GOOG.
2) Write code for a few key unit tests for your code.

3) Enumerate other unit test scenarios (code not required).

4) Provide the space and time complexity of your solution.

Question 2:

You are writing various card games, e.g. Blackjack, Poker for an online casino site. Implement a deck of cards and an abstract game class that includes common methods you would expect to use for different card games. You do not need to create any concrete game implementations.