A stock brokerage firm wants to provide an online stock trading service to enable its clients to make trades via the computer. With this system, a client must first be registered before he can trade online. The  
registration process involves the client providing his ID number, address and telephone number. A client  
may open one or more accounts for stock trading. The stock brokerage firm needs to be registered with a  
stock exchange before its clients can trade the stocks listed on the stock exchange. A stock brokerage firm  
can be registered with one or more stock exchanges. The stock brokerage firm may need to pay monthly  
charges for using the services provided by the stock exchange. Once registered, the client can buy and sell  
stocks. The client can check the current price, bid price, ask price and traded volume of a stock in real time.  
The stock price and traded volume information is provided by the stock exchange on which the stock is  
listed and traded. When a client issues a buy order for an account, the client must specify the stock code,  
the number of shares and the maximum price (bid price) that he is willing to pay for them. A client must  
have sufficient funds in his account to settle the transaction when it is completed. When a client issues a  
sell order, the client must specify the stock code; the number of shares and the minimum price (ask price)  
that he is willing to sell them. The client must have sufficient number of shares of the stock in his account  
before he can issue the sell order. A client can check the status of execution of his (buy or sell) orders. The  
client can issue a buy or sell order before the end of the trading day of the stock exchange which processed the order. All trade orders will be forwarded to the stock trading system of the stock exchange for execution.  
When an order is completed, the stock trading system of the stock exchange will return the transaction  
details of the order to the online stock trading system. The transaction details of a trade order may be a list  
of transactions, each transaction specifying the price and the number of shares traded. An order will be kept on the system for execution until the order is completed or the end of a trading day. Upon the deposit or withdrawal of cash or stock shares, the account cash or stock balance will be updated accordingly.