

CSci 144 Programming Assignment I

Note Title

Due the same day of the Midterm 11:55pm

9/9/2008

Write a multi-threaded program that performs certain file read/write operations. The program will create two threads, T1 and T2. You have a file named "transactions.txt". Once started, T1 writes to the file one of the two types of transactions with following formats:

BUY SYMBOL QUANTITY PRICE
SELL SYMBOL QUANTITY PRICE

The symbols are defined in an array of string in the program.

T1 randomly pick one symbol, decide "BUY" or "SELL", and quantity, and price.

T2 keeps reading the file and prints out the following statistics:

SYMBOL QUANTITY AVG_PRICE

...

...

TOTAL EQUITY: (total of quantity multiplied by average price of each item)

Everytime T2 finishes reading the file, T2 erases all transactions. If there is no transaction when T2 attempts to read the file, T2 still prints out the same statistics after the previous read.

The program needs to be running for at least 10 minutes or 10,000 transactions without crashing.

Hints: (1) To control the speed of T1 and T2, use sleep() after every read/write. (2) If T1 cannot access the file because T2 is reading, T1 has to wait. (3) T2 cannot read while T1 is writing.