Homework 7

Due: Tuesday Nov. 26 by 11:55 PM in NYU Classes
Late period ends Sunday Nov. 30 at 11:55PM
(but it would be better to finish it before Thanksgiving)

This assignment will simulate a vending machine, including the products it sells, and the coins it
has in its money basket to make change.

Let’s suppose the vending machine is small, and can only hold 4 items, up to 5 of each. (Of
course make sure those numbers are variables that can easily be changed.) The machine should
be initially populated as shown below in the test output. When a vending machine comes on-line,
it should start off with 5 of each coin it handles (that is, nickels, dimes and quarters, no pennies,
no bills). If not enough change is inserted, the candy is not sold. If the correct change can not
be given, the candy is not sold. Otherwise, the candy is sold, and the inventory for that candy
bar is decreased by 1. The machine’s money basket is updated to reflect the inserted coins and
change returned. If there are no coins left, the machine should display “exact change only”. We
will discuss the algorithm to make change in the next class.

You should run the driver code (DriveVM.java) to test your classes. My classes are also uploaded
for you to run just to make sure you get the same behavior as mine. We will simply be printing
the transaction, rather than actually performing it. The driver prompts you twice: first to make an
integer selecton, and second to ‘insert’ the coins. At the first prompt, if you enter a ‘q’ or ‘Q’
the program quits. This is handled in the driver. (Also note in the driver a new object from
java.util called a StringTokenizer.)

A sample output from my solution to this problem is below.

At start, vending machine contains:
Mars Bars: 4 @ 65 cents each
Pepsi: 4 @ 85 cents each
Twix: 4 @ 50 cents each
Chips: 4 @ 45 cents each

Machine has: 2 nickels 2 dimes 2 quarters

Welcome to Snack Time
Item number: 0 Mars Bars 65 cents
Item number: 1 Pepsi 85 cents
Item number: 2 Twix 50 cents
Item number: 3 Chips 45 cents
Enter item number of your selection: 0
Enter number of nickels,dimes,quarters: 0 0 3
You received 3 nickels 0 dimes 0 quarters
Your change is 0 nickels 0 dimes 0 quarters
Please take your candy below

Welcome to Snack Time
Item number: 0 Mars Bars 65 cents
Item number: 1 Pepsi 85 cents
Item number: 2 Twix 50 cents
Item number: 3 Chips 45 cents
Enter item number of your selection: 1
Enter number of nickels,dimes,quarters: 0 0 1
You received 0 nickels 0 dimes 1 quarters
Not enough money entered for purchase

Welcome to Snack Time
Item number: 0 Mars Bars 65 cents
Item number: 1 Pepsi 85 cents
Item number: 2 Twix 50 cents
Item number: 3 Chips 45 cents
Enter item number of your selection: 0

After simulation vending machine contains:
Mars Bars: 3 @ 65 cents each
Pepsi: 4 @ 85 cents each
Twix: 4 @ 50 cents each
Chips: 4 @ 45 cents each

Machine has: 2 nickels 1 dimes 5 quarters