Module 1 Capstone - Vending Machine Software

**The requirements for the application are listed below:**

1. The vending machine needs to dispense beverages, candy, chips, and gum
2. A main menu should display when the software is run presenting the following options:
3. **Display Vending Machine Items**
   1. they are presented a list of all items in the vending machine with its quantity remaining.
4. **Purchase**
   1. they are guided through the purchasing process menu:
5. **Feed Money**
   1. A customer can repeatedly feed money into the machine in valid whole dollar amounts (e.g. $1, $2, $5, $10)
6. **Select Product**
   1. allows the customer to select a product to purchase
   2. Show the list of products available and allow the customer to enter to code to select an item
7. If the product code does not exist, the customer is informed and returned to the Purchase menu
8. If a product is sold out, the customer is informed and returned to the Purchase menu
9. If a valid product is selected it is dispensed to the customer
   1. Dispensing an item will print the item name, cost and the money remaining
   2. Dispensing will also return a message:
      1. All chip items will print “Crunch Crunch, Yum!”
      2. All candy items will print “Munch Munch, Yum!”
      3. All drink items will print “Glug Glug, Yum!”
      4. All gum items will print “Chew Chew, Yum!”
10. After the product is dispensed, the machine should update its balance accordingly and return the customer to the Purchase menu
11. **Finish Transaction**
    1. allows the customer to complete the transaction and receive any remaining change back
    2. The customer’s money is returned using nickels, dimes, and quarters (using the smallest amount of coins possible)
    3. The machine’s current balance should be updated to $0 remaining
12. After the purchase is complete the user is returned to the Main menu to continue using the vending machine

**Current Money Provided: $2.00**

- indicates how much money the customer has fed into the machine

* **Audit Log**

- All purchases must be audited to prevent theft from the vending machine

- Each purchase should generate a line in a file called Log.txt

- The audit entry should be in the format:

- 01/01/2016 12:00:00 PM FEED MONEY: $5.00 $5.00

- 01/01/2016 12:00:15 PM FEED MONEY: $5.00 $10.00

- 01/01/2016 12:00:20 PM Crunchie B4 $10.00 $8.50

- 01/01/2016 12:01:25 PM Cowtales B2 $8.50 $7.50

- 01/01/2016 12:01:35 PM GIVE CHANGE: $7.50 $0.00

**(3) Exit**

1. Vending machine inventory is stocked via an input file when the vending machine is started
2. The vending machine is automatically restocked each time the application runs
3. Each slot in the vending machine has enough room for 5 of that product
4. A product which has run out should indicate it is SOLD OUT

**Each vending machine item has/is:**

1. a Name
2. a Price
3. a slot identifier
4. a quantity
   1. initially stocked to the maximum quantity of 5

**Other Requirements:**

1. Create as many of your classes as possible to be “testable” classes
2. Limit Console input and output to as few classes as possible
3. Please provide unit tests demonstrating your code works correctly
4. The input file that stocks the vending machine products is a pipe | delimited file
5. Each line in the input file is a separate product in the file and has the below columns:
   1. Slot Location - The slot location in the vending machine where the product is set
   2. Product Name - The display name of the vending machine product
   3. Price - The purchase price for the product
   4. Type - The product type for this row
6. An example input file has been provided with your repository.

**Optional – Sales Report**

1. Provide a “Hidden” menu option on the main menu (“4”) that writes to a sales report that show the total sales since the machine was started
2. The name of the file should include the date and time so that each sales report is uniquely named
3. The output sales report file is also pipe delimited for consistency
4. Each line is a separate product with the number of sales for the applicable product
5. At the end of the report is a blank line followed by \*\*TOTAL SALES\*\* $dollar amount indicating the gross sales from the vending machine
6. An example of the output format is provided below:

