**A Vending Machine Software**

Developed an application for a vending machine at North-West University. They have released a new vending machine, that allows customers to buy products from their computers for their convenience.

**Application Requirements**

1. The vending machine disposes of beverages, sweets, chips, and gum.
   * Each vending machine item has a Name and a Price.
2. The main menu will display when the software runs, presenting the following options:

* (1) Display Items
* (2) Buy
* (3) Exit

1. The vending machine inventory is stocked via an input file when the vending machine starts.
2. The vending machine is automatically restocked each time the application runs.
3. When the customer selects "(1) Display Vending Machine Items", they're presented with a list of all items in the vending machine with its quantity remaining:
   * Each vending machine product has a slot identifier and a buy price.
   * Each slot in the vending machine has enough room for 5 of the products.
   * Every product is initially stocked to the maximum amount.
   * A product that has run out will indicate that it is SOLD OUT.
4. When the customer selects "(2) Buy", they are guided through the purchasing

process menu:

* (1) Input Money
* (2) Select Product
* (3) Complete Transaction

Current Money Provided: R2.00

1. The buy process flow is as follows:
2. Selecting "(1) Input Money" allows the customer to repeatedly input money into the machine, in rand amounts (e.g., R1, R2, R5, or R10).
   * The "Current Money Provided" indicates how much money the customer has input into the machine.
3. Selecting "(2) Select Product" allows the customer to select a product to buy.
   * Show the list of products available and allow the customer to enter a code to select an item.
   * If the product code does not exist, the customer is informed and returned to the Buy menu.
   * If a product is sold out, the customer is informed and returned to the Buy menu.
   * If a valid product is selected, it is disposed to the customer.
   * Disposing of an item prints the item name, cost, and the money remaining. Disposing also returns a message:

- All chips’ items print "Munch Munch, Yum!"

- All sweets items print "Munch Munch, Yum!"

- All beverages’ items print "Gulp Gulp, Yum!"

- All gum items print "Chew Chew, Yum!"

* + After the product is disposed of, the machine will update its balance accordingly and return the customer to the Buy menu.

1. Selecting "(3) Finish Transaction" allows the customer to complete the transaction and receive any remaining change.
   * The customer's money is returned using cents, rands, and notes.
   * The machine's current balance will be updated to R0 remaining.
2. After completing their purchase, the user is returned to the "Main Menu" to continue using the vending machine.
3. All purchases will be audited to prevent theft from the vending machine:
   * Each purchase will generate a line in a file called `Log.txt`.
   * The audit entry will be in the format:
   * 01/01/2016 12:00:00 PM INPUT MONEY: R5.00 R5.00
   * 01/01/2016 12:00:15 PM INPUT MONEY: R5.00 R10.00
   * 01/01/2016 12:00:20 PM Simba Chips B4 R10.00 R8.50
   * 01/01/2016 12:01:25 PM Jelly Tots B2 R8.50 R7.50
   * 01/01/2016 12:01:35 PM GIVE CHANGE: R7.50 R0.00

1. Many of the classes have "testable" classes.
2. Optional - Sales Report
   * Provide a menu option on the main menu ("4") that writes to a sales report that shows the total sales since the machine was started. The name of the file will include the date and time so each sales report is uniquely named.
   * An example of the output format is provided below.
3. Provided unit tests demonstrating that the code works as intended.

**Vending Machine Data File**

The input file that stocks the vending machine products is a pipe `|` delimited file. Each line is a separate product in the file and follows the below format:

| Column Name | Description |

|----------------|---------------|

For example:

```

A1|Simba Chips|3.05|Chips

A2|Lays Chips|1.45|Chips

A3|Big Corn Bites|2.75|Chips

A4|Nik Naks|3.65|Chips

```

An input file is provided with the repository: `inventory.csv`.

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**Sales Report**

The output sales report file is also pipe-delimited for consistency. Each line is a separate product with the number of sales for the applicable product. At the end of the report is a blank line followed by the \*\*TOTAL SALES\*\* rand amount indicating the gross sales from the vending machine.