**Vending Machine Kata**

In this exercise you will build the brains of a vending machine. It will accept money, make change, maintain inventory, and dispense products. All the things that you might expect a vending machine to accomplish.

The point of this kata to provide a larger than trivial exercise that can be used to practice TDD. A significant portion of the effort will be in determining what tests should be written and, more importantly, written next.

**Features**

**Accept Coins**

*As a vendor*  
*I want a vending machine that accepts coins*  
*So that I can collect money from the customer*

The vending machine will accept valid coins (nickels, dimes, and quarters) and reject invalid ones (pennies). When a valid coin is inserted the amount of the coin will be added to the current amount and the display will be updated. When there are no coins inserted, the machine displays INSERT COIN. Rejected coins are placed in the coin return.

NOTE: The temptation here will be to create Coin objects that know their value. However, this is not how a real vending machine works. Instead, it identifies coins by their weight and size and then assigned a value to what was inserted. You will need to do something similar. This can be simulated using strings, constants, enums, symbols, or something of that nature.

**Select Product**

*As a vendor*  
*I want customers to select products*  
*So that I can give them an incentive to put money in the machine*

There are three products: cola for $1.00, chips for $0.50, and candy for $0.65. When the respective button is pressed and enough money has been inserted, the product is dispensed and the machine displays THANK YOU. If the display is checked again, it will display INSERT COINS and the current amount will be set to $0.00. If there is not enough money inserted then the machine displays PRICE and the price of the item and subsequent checks of the display will display either INSERT COINS or the current amount as appropriate.

**Make Change**

*As a vendor*  
*I want customers to receive correct change*  
*So that they will use the vending machine again*

When a product is selected that costs less than the amount of money in the machine, then the remaining amount is placed in the coin return.

**Return Coins**

*As a customer*  
*I want to have my money returned*  
*So that I can change my mind about buying stuff from the vending machine*

When the return coins is selected, the money the customer has placed in the machine is returned and the display shows INSERT COIN.

**Sold Out**

*As a customer*  
*I want to be told when the item I have selected is not available*  
*So that I can select another item*

When the item selected by the customer is out of stock, the machine displays SOLD OUT. If the display is checked again, it will display the amount of money remaining in the machine or INSERT COIN if there is no money in the machine.

**Exact Change Only**

*As a customer*  
*I want to be told when exact change is required*  
*So that I can determine if I can buy something with the money I have before inserting it*

When the machine is not able to make change with the money in the machine for any of the items that it sells, it will display EXACT CHANGE ONLY instead of INSERT COINS.