Description of Class

The class is basically a small vending machine. The purpose of the class is to imitate what a vending machine contains and does with the same interactions you would make with a vending machine. This vending machine only takes in quarters. The class constructor method takes in the list of items being purchased and an amount of quarters.

Description of class and data variables

The class variable "coin_type" is used to show what type of coins the vending machine is taking in. So the class variable is set equal to the string "Quarters only".

The data variable "self.__item_name" is a private variable that is set equal to the constructor argument of the list of items.

The data variable "self.__coin_amount" is a private variable that is set equal to the constructor argument of the quarter amount.

The data variable "self.__cost" is a private variable that is set equal to 0. This variable is going to be used for the total price of all items purchased.

The data variable "self.__balance" is a private variable that is set equal to 0. This variable is going to be used for the total balance of the amount of quarters inserted into the vending machine.

Description of Methods

The purpose of the "totalcost" method is to calculate the total cost of the items being purchased. The method uses the data variable "self.__item_name" to iterate through the item list in that data variable. The method in the end should return the total price of the items being purchased (self.__cost).

The purpose of the "balance" method is to calculate the amount of quarters inserted in the vending machine. The method uses the data variable "self.__coin_amount" to calculate the total of the quarters inserted. The method should return the total balance of quarters inserted (self.__balance).

The purpose of the "menu" method is to display the menu that contains all the items and their prices. The method should return a welcome message and the list of the items in the vending machine with their prices respectively.

The purpose of the "set_item" method is to help access the private variable "self.__item_name". It takes in the argument of the item list that is being purchased. It raises a ValueError with a message if the item list has one item that does not exist in the vending machine.

The purpose of the "set_coinamount" method is to help access the private variable "self.__coin_amount". It takes in the argument of the amount of quarters being inserted. It raises a ValueError with a message if the amount of quarters is less than 0.

The purpose of the "get_item" method is to help access the private variable "self.__item_name". The method returns the private variable "self.__item_name".

The purpose of the “get_coin_amount” method is to help access the private variable “self.__coin_amount”. The method returns the private variable“self.__coin_amount”.

Description of Demo Program

The demo program first takes in the input arguments into the class. It then has if-else statements using the set method to check if any errors are raised. If there were no errors raised, then the program continues. The program prints out the menu where the items and their prices are displayed. Then, it prints the amount of quarters the user inserted as well as the items the user selected from the vending machine. The program calculates the remaining balance of the user and has two outcomes. If the remaining balance came out to be negative, then the user would be told that they have insufficient funds. If not, then the program prints the items purchased and the remaining amount of balance the user has.

Instructions

To run the demo program, the user needs to input the list of items in the variable “item_names” and the number of quarters inserted in the variable “coin_amount”.