Class Documentation

- ***Description of the class:***

  This EspressoMachine class contains all of the program's variables and functions. The two class variables: canMakeEspresso and menu_list are created and initialized at the top of the class. The __init__ method takes in drink (string message), number of espresso shots, water tank capacity, and coffee capacity and stores them as private data variables. The functions can_it_make_espresso(), get_water_capacity(), get_coffee_capacity(), make_single_shot(), and make_drink() are all implemented in this class.

- ***Description of each of the class and data variables:***

1. **canMakeEspresso** (class variable)

   This is a boolean variable that is equal to “True” because it is used to check if the class has a quality that is the same for all classes.

2. **menu_list** (class variable)

   This is a list that contains the names of 3 drinks as strings. This is used in the make_drink() function to check if the argument values are equal to a specific element in this list.

3. **drink** (data variable)

   This is a string variable that is the first argument in the make_drink() function and it is checked to see if it is equal to an element in menu_list and is returned in that function.

4. **num_of_espresso_shots** (data variable)

   This is an integer variable that is the second argument in the make_drink() function. This variable is used in a for loop to determine how many times to call the make_single_shot() function.

5. **water_tank_capacity** (data variable)

   This is an integer variable that is the third argument in the make_drink() function. It is used in the get_water_capacity() function to determine how much water is left. It is also modified in the make_single_shot() function and returned from the make_drink() function to reflect the modified value.

6. **coffee_capacity** (data variable)

   This is an integer variable that is the fourth argument in the make_drink() function. It is used in the get_coffee_capacity() function to determine how much coffee is left. It is also modified in the make_single_shot() function and returned from the make_drink() function to reflect the modified value.

- ***Description of each of the methods:***

1. def can_it_make_espresso()

   This method returns True or False based on if a class has the quality of being able to make espresso, which is True for all espresso machines. Because my program only has one class, this always returns True. No arguments are needed for this method.

2. def get_water_capacity()

   This method returns the current water capacity which is stored in the water_tank_capacity variable. No arguments are needed for this method. This method is called in make_single_shot() and subtracts 1 from the water_tank_capacity every time that function is called.

3. def get_coffee_capacity()

   This method returns the current coffee capacity which is stored in the coffee_capacity variable. No arguments are needed for this method. This method is called in make_single_shot() and subtracts 2 from the coffee_capacity variable every time that function is called.

4. def make_single_shot()

   This method returns a string message with the current water_tank_capacity and current coffee_capacity from the functions get_water_capacity() and get_coffee_capacity(). This method also modifies those variables by subtracting an amount each time it is run. No arguments are needed for this method.

5. def make_drink()

   This method returns a string message with the drink and how many espresso shots were inputted in the class's argument. It also returns the water and coffee capacity after the "drink" is made. If the water or coffee capacity is equal to zero, an error message will be returned. No arguments are needed for this method.

Demo Program Documentation

- ***Description of the demo program.***

My demo program “makes” a drink based on inputs put into the class’s arguments. It takes the drink inputted and compares it to a set list of drinks, then makes a certain amount of espresso shots based on the value inputted into num_of_espresso_shots. Each time an espresso shot is made, or make_single_shot() is called, the water and coffee variables are decreased and the value of these variables are also returned. If there is not enough water or coffee, the drink will not be able to be made and an error message will be returned.

- ***Instructions on how to run the demo program.***

Running the demo program as is will result in string messages as described in the description of the demo program above. The arguments in the class that is called in the main function can be altered to return values based on what is entered. Other than needing Python 3.7, there are no other files or imports needed to run the program.