Assignment: Homework 4 Name: Mia Smith BI: mesmith2

In this homework assignment, I built a coffee ordering system to hold customer information and used GUI to implement frames and buttons for customers to interact with. The menu consists of four main buttons, Order Coffee, View Orders, Prepare, and Exit.

For the Order Coffee button, I first implemented a new frame within its action listener for the customer information. I added components for the frame such as a JPanel, JTextFields, and JLabels. I then created a new customer object depending on if the customer is regular or premium. I set the text field components as the customer parameters and added it to the Customer arraylist.

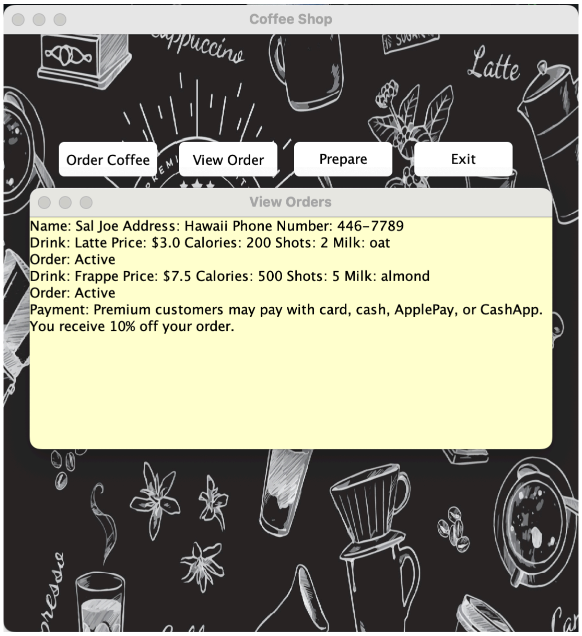
Along with the customer information within the Order Coffee action listener are the list of coffee's to choose from. I created individual buttons for each of the coffees and as well added their action listeners within the Order Coffee action listener. For each individual coffee buttons actionlistener, I again created their own JFrame, with additional components added for the specified coffee being ordered; number of shots, milk type, light or dark roast. I also created a confirm button for when the user was done inputting coffee preferences, so that when the confirm button is pressed, for each customer in my customer array list, the coffee order will be added to an array list which is held in Customer class. I implement this with a method in my customer class which takes in Coffee as a parameter and adds the coffee to an arraylist, addCoffee.

For my abstract Customer class, I created a basic constructor which holds the name, address, phone number, and type of customer. I used private instance variables and public getters and setters as well as the payCoffee method and the addCoffee method which helps to keep orders separated by customer. In my subclasses of Customer, Premium and Regular, I override the payCoffee method with a string returning how the customer should pay.

In my Coffee class, I use private instance variables with a constructor which holds the name, price, and calories of a coffee. I also create a status variable to keep up with the order being passive/active. In my subclasses of coffee, I add modifiers for coffees to the constructors. I override the toString method and the prepare method within the subclasses.

In the View Orders button action listener, I used a for loop to append each customer in the customer arraylist to a JTextarea in order to display customer information. I nested another for loop to append each coffee and its status. I implemented it by going through the coffee arraylist created in the Customer class and the getOrders method.This method returns the coffee arraylist. I also append the payCoffee method to the text area.

In the Prepare Button action listener, I use a nested for loop to go through each customer in the customer arraylist, and for each coffee in the coffee getOrders method, the prepare method will be appended to the text area, and the order type will be set as passive.
In the Exit button actionlistener, I called my File class method writeToFile with an input parameter of the customer arraylist. This method takes in an arraylist for the customer class, and tries to print a file titled “CoffeeOrders.txt ". I use a nested for loop to print a line for each customer in the input parameter of customers, and also print a line for each coffee in the customer getOrders method, in addition to the customer payment type with the payCoffee method.



```
Name: Sal Joe Address: Hawaii Phone Number: 446-7789
Drink: Latte Price: $3.0 Calories: 200 Shots: 2 Milk: oat
Order: Active
Drink: Frappe Price: $7.5 Calories: 500 Shots: 5 Milk: almond
Order: Active
Payment: Premium customers may pay with card, cash, ApplePay, or CashApp.
You receive 10% off your order.
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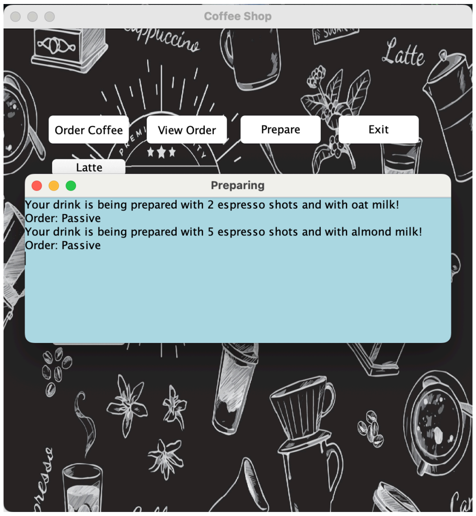

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Your drink is being prepared with 2 espresso shots and with oat milk!
Order: Passive
Your drink is being prepared with 5 espresso shots and with almond milk!
Order: Passive
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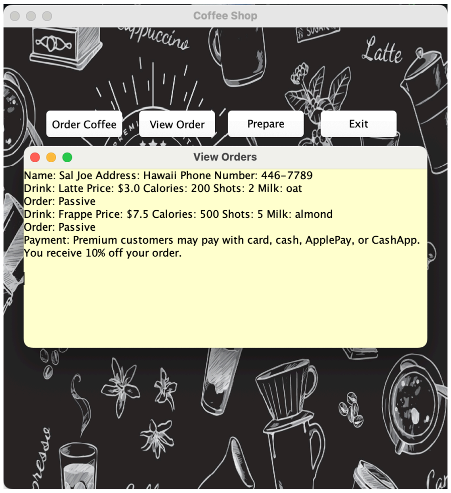

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Name: Sal Joe Address: Hawaii Phone Number: 446-7789
Drink: Latte Price: $3.0 Calories: 200 Shots: 2 Milk: oat
Order: Passive
Drink: Frappe Price: $7.5 Calories: 500 Shots: 5 Milk: almond
Order: Passive
Payment: Premium customers may pay with card, cash, ApplePay, or CashApp.
You receive 10% off your order.
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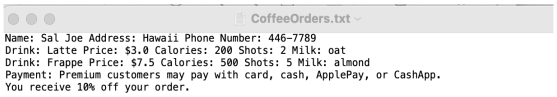

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