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Week4Meet - 10 pts

Turn in on BBL as soon as complete, but before end of day Friday following the lecture.

===============================

Read both programs.

import java.util.Scanner;  
import java.util.ArrayList;  
import java.util.Random;  
  
/\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*  
 \* TestPrep.java  
 \* Runs a little game involving caffeine  
 \* @author Tammy Pirmann  
 \* @version 20210414  
 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/  
public class TestPrep {  
 public static void main(String args[]){  
 Scanner keyboard = new Scanner(System.in);  
 Random randGen = new Random();  
 ArrayList<Cafe> drinks = new ArrayList<Cafe>();  
   
 System.out.println("It's time to get ready for midterms!");  
 System.out.println("You know you have to be alert for study sessions.");  
 System.out.println("Caffeinated beverages from your favorite cafe will work.");  
 System.out.println("We all like different drinks, so get ready to enter yours.");  
 System.out.println("You will need the name, the mg of caffeine and the price.");  
 System.out.println("When you are done, enter DONE then 0 then 0.");  
   
 String name = "na";  
 int caffeine;  
 double price;  
   
 while (!name.equalsIgnoreCase("DONE")){  
 System.out.println("Enter a drink name or DONE: ");  
 name = keyboard.next();  
 System.out.println("Enter the caffeine in mg: ");  
 caffeine = keyboard.nextInt();  
 System.out.println("Enter the price: ");  
 price = keyboard.nextDouble();  
 keyboard.nextLine();  
 if (!name.equalsIgnoreCase("DONE")) {  
 drinks.add(new Cafe(name, caffeine, price));  
 }  
 }  
  
 int max = drinks.size();  
 System.out.println(max);  
   
 System.out.println("The human body can handle about 500 mg of caffeine before bad things start to happen.");  
 System.out.println("You will now play chicken with your drink choices. Try to stay alert without going over.");  
 System.out.println("You can DRINK or be DONE");  
 System.out.println("The drink will be chosen at random from the ones you entered");  
   
 int totalCaffeine = 0;  
 String tally = "";  
 String choice = "DRINK";  
 while (!choice.equalsIgnoreCase("DONE")){  
 System.out.println("You can DRINK or be DONE!");  
 choice = keyboard.nextLine();  
 Cafe bev = drinks.get(randGen.nextInt(max));  
 totalCaffeine += bev.getCaffeine();  
 tally += "["+bev.toString() +"] ";  
 }  
  
 if (totalCaffeine > 500){  
 System.out.println("You lose! You get the jitters and can't remember anything you studied today!");  
 }   
 else if (totalCaffeine > 100){  
 System.out.println("You win! You stay alert for the whole study session!");  
 }   
 else{  
 System.out.println("What's this? It's like you didn't play! You fell asleep on your book.");  
 }  
 System.out.println("You drank: " + tally);  
   
 }  
}

/\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*  
 \* Cafe.java  
 \* Class definition of a caffeinated drink  
 \* @author Tammy Pirmann  
 \* @version 20210414  
 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/  
public class Cafe {  
  
private String name;  
private int caffeine;  
private double price;  
  
public Cafe(){  
 name = "Coffee";  
 caffeine = 100;  
 price = 1.50;  
}  
public Cafe(String n, int c, double p){  
 name = n;  
 caffeine = c;  
 price = p;  
}  
  
public String getName(){  
 return name;  
}  
public int getCaffeine(){  
 return caffeine;  
}  
public double getPrice(){  
 return price;  
}  
public String toString(){  
 return (name + ", " + caffeine + "mg of caffeine at $" + price);  
}  
}

Label these programs with descriptions of what each line or segment is doing. A segment may be several lines of code or part of one line of code.

Be sure to highlight where the two programs interact with each other.

TestPrep class is having three imports scanner, random, and arraylist classes. There are messages print using system.out.println method. In while loop the condition is true till the condition gets false it will not stop. We also use break in if condition if the condition satisfied it will break that loop. Arraylist used to store the bev. There are some if else ladders to check the totalcaffine with more values like 500 then 100 and else condition. Last we use for loop to print the arraylist data present in the list it will print out everything.

Café class is having the constructor which defines some values inside name, coffee, and price. There is one more constructor used here as parameterized constructor which defines some values once the user enter that values it will get that values. We will use getter to get the values. Tostring is return the string which we are getting.

ArrayList<Cafe> drinks = **new** ArrayList<Cafe>();

drinks.add(**new** Cafe(name, caffeine, price));

ArrayList<Cafe> tally = **new** ArrayList<Cafe>();

Cafe bev = drinks.get(randGen.nextInt(max));

**for** (Cafe bev : tally) {

this are the lines of code in testprep class where the café class is involved and get interacted. In arraylist drinks were added to the list.

Everything below this line relates ONLY to the problem discussed in class, the code we wrote together.

I understand the problem introduced in class to be: (in your own words)

I understand the problem which I learn in today’s class that we work with some scanner class and how two class interact with each other and share the methods which we use like the get price method. Then we calculate the sum and print the data which is available in my list.

My UML Diagram for these classes: (feel free to paste in a photo of a hand done diagram)

A screenshot of a phone

Description automatically generated with medium confidence

The solution to the problem were the following programs: (provide the names of the .java files only)

TestPrep.java

I tested the solution with at least 3 different value sets. The test data and results are:

(use this format: var1 = data, var2 = data, etc -> result)

It's time to get ready for midterms!

You know you have to be alert for study sessions.

Caffeinated beverages from your favorite cafe will work.

We all like different drinks, so get ready to enter yours.

You will need the name, the mg of caffeine and the price.

When you are done, enter DONE then 0 then 0.

Enter a drink name or DONE:

coffee

Enter the caffeine in mg:

50

Enter the price:

5

Enter a drink name or DONE:

latte

Enter the caffeine in mg:

25

Enter the price:

10

Enter a drink name or DONE:

done

2

The human body can handle about 500 mg of caffeine before bad things start to happen.

You will now play chicken with your drink choices. Try to stay alert without going over.

You can DRINK or be DONE

The drink will be chosen at random from the ones you entered

You have had 0mg of caffeine so far

You can DRINK or be DONE!

drink

You have had 25mg of caffeine so far

You can DRINK or be DONE!

drink

You have had 75mg of caffeine so far

You can DRINK or be DONE!

drink

You have had 125mg of caffeine so far

You can DRINK or be DONE!

done

You win! You stay alert for the whole study session!

You drank: [latte, 25mg of caffeine at $10.0, coffee, 50mg of caffeine at $5.0, coffee, 50mg of caffeine at $5.0, latte, 25mg of caffeine at $10.0]

latte, 25mg of caffeine at $10.0

coffee, 50mg of caffeine at $5.0

coffee, 50mg of caffeine at $5.0

latte, 25mg of caffeine at $10.0

Total Cost: $30.0

It's time to get ready for midterms!

You know you have to be alert for study sessions.

Caffeinated beverages from your favorite cafe will work.

We all like different drinks, so get ready to enter yours.

You will need the name, the mg of caffeine and the price.

When you are done, enter DONE then 0 then 0.

Enter a drink name or DONE:

black coffee

Enter the caffeine in mg:

100

Enter the price:

10

Enter a drink name or DONE:

Plain Coffee

Enter the caffeine in mg:

200

Enter the price:

20

Enter a drink name or DONE:

DONE

2

The human body can handle about 500 mg of caffeine before bad things start to happen.

You will now play chicken with your drink choices. Try to stay alert without going over.

You can DRINK or be DONE

The drink will be chosen at random from the ones you entered

You have had 0mg of caffeine so far

You can DRINK or be DONE!

drink

You have had 100mg of caffeine so far

You can DRINK or be DONE!

drink

You have had 300mg of caffeine so far

You can DRINK or be DONE!

drink

You have had 500mg of caffeine so far

You can DRINK or be DONE!

done

You lose! You get the jitters and can't remember anything you studied today!

You drank: [black coffee, 100mg of caffeine at $10.0, Plain Coffee, 200mg of caffeine at $20.0, Plain Coffee, 200mg of caffeine at $20.0, Plain Coffee, 200mg of caffeine at $20.0]

black coffee, 100mg of caffeine at $10.0

Plain Coffee, 200mg of caffeine at $20.0

Plain Coffee, 200mg of caffeine at $20.0

Plain Coffee, 200mg of caffeine at $20.0

Total Cost: $70.0

It's time to get ready for midterms!

You know you have to be alert for study sessions.

Caffeinated beverages from your favorite cafe will work.

We all like different drinks, so get ready to enter yours.

You will need the name, the mg of caffeine and the price.

When you are done, enter DONE then 0 then 0.

Enter a drink name or DONE:

coffee

Enter the caffeine in mg:

1

Enter the price:

1

Enter a drink name or DONE:

plain coffee

Enter the caffeine in mg:

1

Enter the price:

1

Enter a drink name or DONE:

done

2

The human body can handle about 500 mg of caffeine before bad things start to happen.

You will now play chicken with your drink choices. Try to stay alert without going over.

You can DRINK or be DONE

The drink will be chosen at random from the ones you entered

You have had 0mg of caffeine so far

You can DRINK or be DONE!

drink

You have had 1mg of caffeine so far

You can DRINK or be DONE!

drink

You have had 2mg of caffeine so far

You can DRINK or be DONE!

done

What's this? It's like you didn't play! You fell asleep on your book.

You drank: [plain coffee, 1mg of caffeine at $1.0, coffee, 1mg of caffeine at $1.0, coffee, 1mg of caffeine at $1.0]

plain coffee, 1mg of caffeine at $1.0

coffee, 1mg of caffeine at $1.0

coffee, 1mg of caffeine at $1.0

Total Cost: $3.0

Reflect on your problem-solving:

I think about the problem and solve the solution like the array list methods like add and size. We use while loop for the condition and we also use break to stop or get out from loop.

How confident are you in the solution?

I am very confident in this problem like I run the program before modifying I understand the solution almost and after the modification, I learn something new which changes the solution.

How ready do you feel for the midterm?

Learning things that can help me for my midterm. I am ready for my midterm.

How comfortable are you with Project #1?

I am good at my project one as I talk with professor, I am almost done for my project #1.

Reflect on your learning and your needs. After this class meeting, what topics do you feel like you learned and what topics do you feel like you need more information on to learn?

I topics which I learn array list and loops which are good and help me to do better things with some programs which I learn before I would like to use this thing at there. I would like to see array list more in future classes.