Tea-Coffee Vending Machine Simulator – Core Java
Duration: 5 days

1. Abstract

This case study is designed to show the working of Tea-Coffee Vending machine. Here the whole problem need to be designed around collection framework, exception handling and OOPs concepts including Test Driven Development approach.

2. Problem Definition

Tea Coffee Vending machine is used for making tea and coffee. Now a day's Tea-Coffee vending machine is a common need of an organization/ refreshment stall, where one can easily serve different flavor of tea and coffee drink.

Here we want a simulator of tea-coffee vending machine. The TCVM should have different containers to contain material needed for making tea-coffee. When system is started it should be initialized with material. It should have user friendly interface to operate system. System should also have flexible reporting features.

3. Business Requirements

1. System should have containers with their maximum capacity.
2. System should be started with assumption that all containers are filled with material needed for making drink.
3. System should have support for options like
   - Make Coffee
   - Make Tea
   - Make Black Coffee
   - Make Black Tea
   - Refill Container
   - Check Total Sale
   - Container Status
   - Reset Container
   - Exit TCVM
4. System should care about waste calculation of material
5. System should care of overflow and underflow condition of containers
6. System should not allow drink making in underflow condition(no enough material available)
7. System should have statistics of drink generated from system.
8. System should have feature to take multiple orders (ex. 2 coffee or 10 tea)
9. System should be user-friendly & display message properly.
10. System requires below container

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Sr.No	Container	Capacity
1	Tea Container	2KG
2	Coffee Container	2KG
3	Sugar Container	8KG
4	Water Container	15ltr
5	Milk Container	10ltr

Use of Material in Drink making

Tea 1 cup : Rs 10/- Each		
Material	**Consumption of material**	**Waste of material**
Tea	5gm	1gm
Water	60ml	5ml
Milk	40ml	4ml
Sugar	15gm	2gm

Black Tea 1 cup : Rs 5/- Each		
Material	**Consumption of material**	**Waste of material**
Tea	3gm	0gm
Water	100ml	12ml
Sugar	15gm	2gm

Coffee 1 cup : Rs 15/- Each		
Material	**Consumption of material**	**Waste of material**
Coffee	4gm	1gm
Water	20ml	3ml
Milk	80ml	8ml
Sugar	15gm	2gm

Black Coffee 1 cup : Rs 10/- Each		
Material	**Consumption of material**	**Waste of material**
Coffee	3gm	0gm
Water	100ml	12ml
Sugar	15gm	2gm

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Report Statistics

- Total Tea-Coffee Sale Report Drink Wise (Cup and Cost)
- Total Tea-Coffee Sale (Cup and Cost)
- Container Status Report (Quantity of Material Present)
- Refilling Counter (How many times refilling is done)

4. Evaluation parameter

- Create appropriate use case and class diagrams.
- Modular approach should be used in application development.
    - Class level
    - Method level
- Should make use of interface in appropriate situation
- Component should be written using Test Driven Development strategy.
- Application code should be reusable.
- Your application should demonstrate all the clean code practices.
- Optimized logic
- User Friendly Command User Interface (Menu Driven Application)
- Accuracy of Calculation in reports
- Time line delivery
- Completion Status

5. Limitations

- We do not want to use Database, if required take the help of Collection API
- Use json instead of database

Good Luck