

Application Title : Tea-Coffee Vending Machine(TCVM)

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| 1 | Problem Definition |
| 2 | Business Requirement |
| 3 | Evaluation criteria |

1. Problem Definition:

Tea-Coffee Vending Machine (TCVM) is a machine used for making tea and coffee.

Nowadays tea-coffee machine is a common need of an organization/refreshment stall, where one can easily and quickly serve different flavours 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.

2. Business Requirement

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 of overflow and underflow condition of containers
5. System should not allow drink making in underflow condition(no enough material available)
6. System should have statistics of drink generated from system
7. System should have feature to take multiple orders(ex. 2 coffee or 10 tea)
8. System should be user-friendly & display message properly.
9. System required below containers:

| SR | Container | Max Capacity |
|----|------------------|--------------|
| 1 | Tea Container | 2 KG |
| 2 | Coffee Container | 2 KG |
| 3 | Sugar Container | 8 KG |
| 4 | Water Container | 15 Litters |
| 5 | Milk Container | 10 Litters |

10. Use of Material in drink making

Tea 1 Cup : Rs 10/- Each

| Material | Consumption of material |
|----------|-------------------------|
| Tea | 5 g |
| Water | 60 ml |
| Milk | 40 ml |
| Sugar | 15 g |

Black Tea 1 Cup: Rs 5/- Each

| Material | Consumption of material |
|----------|-------------------------|
| Tea | 3 g |
| Water | 100 ml |
| Sugar | 15 g |

Coffee 1 Cup: Rs 15/- Each

| Material | Consumption of material |
|----------|-------------------------|
| Coffee | 4 g |
| Water | 20 ml |
| Milk | 80 ml |
| Sugar | 15 g |

Black Coffee 1 Cup: Rs 10/- Each

| Material | Consumption of material |
|----------|-------------------------|
| Coffee | 3 g |
| Water | 100 ml |
| Sugar | 15 g |

11. Reports/Statistics:

- Total Tea-Coffee Sale Report Drink wise.
- Total Tea-Coffee Sale.
- Container Status Report(quantity of material present)
- Refilling counter (how many times refilling is done)

12. No database should be used, if required take advantage from Python Datatypes

13. No need to store data permanently, in every start of application system should be reset.

3. Evaluation Parameters:

- Modular Approach should be used in application development
 - Class level
 - Method level
- Should make use of interface in appropriate situations.
- Application code should be reusable
- Application code should be well documented
- Appropriate names should be used for class, interfaces method and variables
- Small method size
- Optimized logic
- User-friendly Interface
- Accuracy of calculations and Report
- Timeline delivery
- Completion status

Note:

1. Any Programming Language can be used.
2. Any kind of UI can be implemented.

Good Luck