

COFFEE VENDING MACHINE APPLICATION

FUNCTIONAL REQUIREMENTS

Selection of type of coffee: The consumer must be able to select the type of coffee.

Select coffee version: The consumer can choose a coffee version (cappuccino, latte, mocha, tinto).

Add sugar: The consumer must be able to add different amounts of sugar to their coffee.

Size selection: The consumer must be able to select the size of the coffee cup.

Cancel operation: The consumer must be able to cancel the process.

Payment: the application must accept payments by card or cash.

Payment validation: The application must validate if the payment was accepted or rejected and return consumer cash in case of cancellation or that the user has entered a value higher than the price of the coffee.

Create an inventory: The administrator should be able to create initial inventory.

Update prices: The administrator should be able to modify the prices of any ingredient.

Update Available Quantity: The admin should be able to modify the available quantity of an ingredient.

Inform availability: The application should inform the consumer when an ingredient is not enough to add to their coffee.

Discount from stock: The application should reduce the amount of an ingredient available when a coffee is brewed.

Send alert: The application should send an alert to the administrator when the level of an ingredient is lower than the alert measure.

NON-FUNCTIONAL REQUIREMENTS

Usability: The application must be easily usable by people of all ages.

Accessibility: the application must be usable from different devices.

Scalability: The application must be able to handle a high number of users without problems.

USE CASES

Use case 1: Selection of coffee preferences.

Actors: User

Preconditions:None.

main flow:

- The application shows the user the available coffee type options (caffeinated or decaffeinated) and the user selects a type of coffee.
- The application displays different versions of coffee for the consumer to choose from (capuchino, latte. . .) and the user chooses a version or cancels the process.
- The application allows the consumer to order the amount of sugar they want and the user adds the quantity that they prefer or cancels the process.
- The application shows the user the available cup size options and the user selects the desired size or cancels the process.
- The application calculates and displays the price of coffee according to the consumer's choice.

Alternative flows:

- If there is not enough of an ingredient, the system informs the user.

Use case 2: Payment with card

Actors: User

Preconditions: The user has selected their coffee preferences.

main flow:

- The user passes the card through the reader, the bank validates the process and the application displays the response to the consumer.
- The application validates the payment and, if accepted, dispenses the selected coffee to the user.

Alternative flows:

- If the payment is declined, the application shows the user an error message and asks them to enter a valid card or select another payment method.

Use case 3: Payment with cash

Actors: User

Preconditions: The user has selected their coffee preferences.

main flow:

- The user enters the amount of cash into the machine.

- The application detects the amount of money entered and, if accepted, dispenses the selected coffee to the user and if the user has entered a higher value, it returns the rest.

Alternative flows:

- if the user enters less money than necessary, the machine asks him to enter the rest of the money or cancel the process.
- if the user cancels the purchase, the machine returns the money.

Use case 4: Cancel the process.

Actors: User

Preconditions: The user has started some coffee option /has entered less cash than the cost of the coffee.

main flow:

- If the user is selecting their preferences and cancels the process, the system reboots.
- If the user enters less cash than the cost of the coffee and later decides to cancel the purchase, the system returns the money entered.

Use case 5: Manage the inventory.

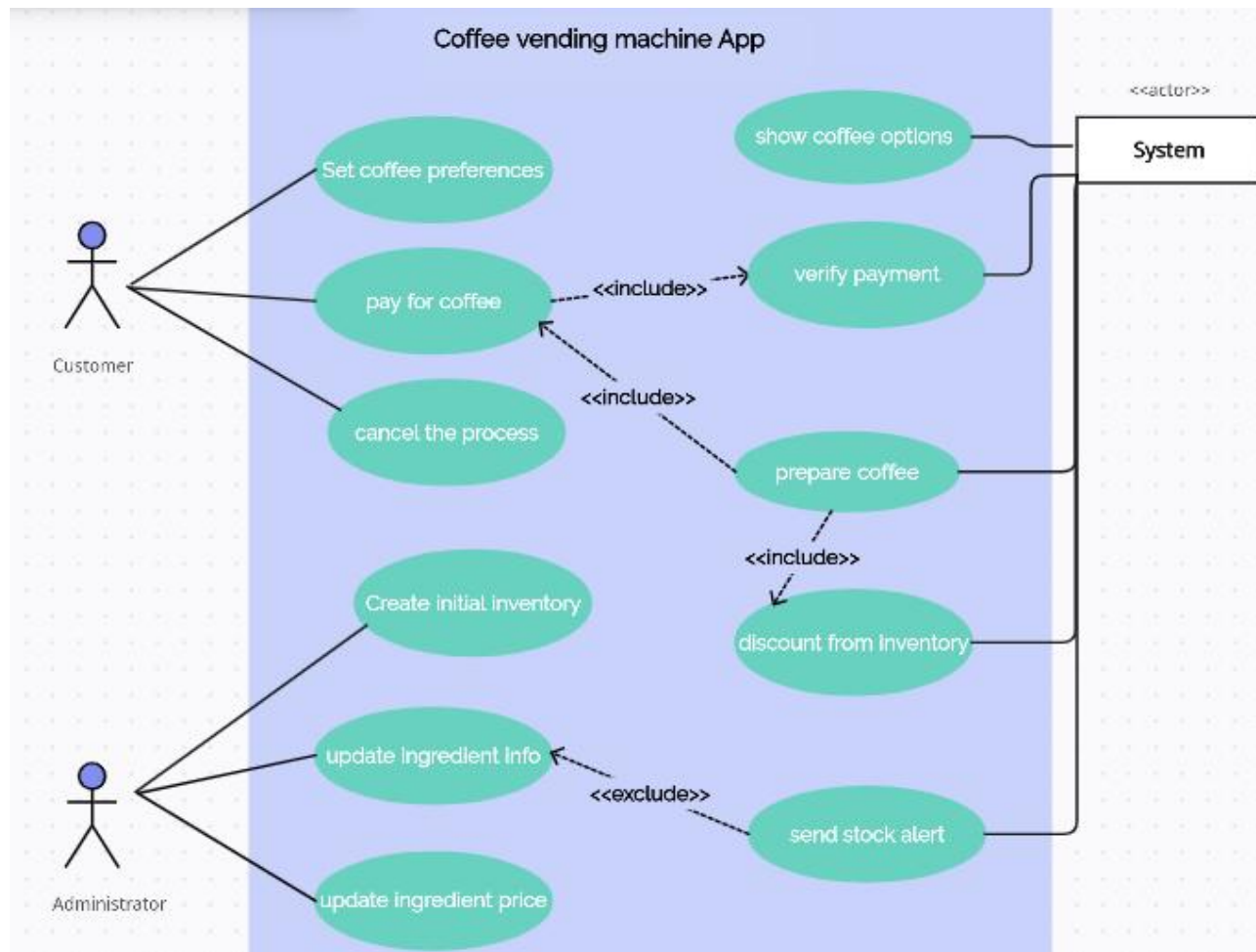
Actors: Administrator, system.

Preconditions: none.

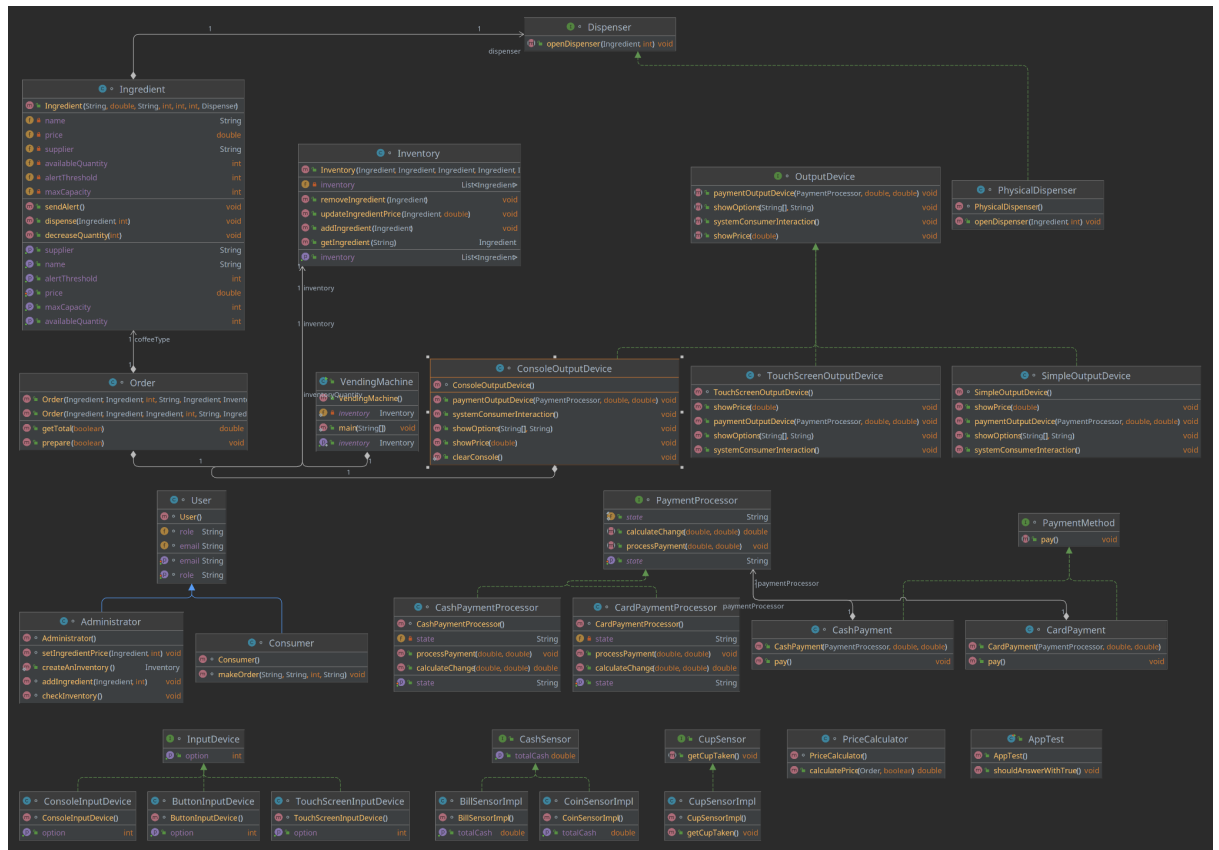
main flow:

- The administrator creates the initial inventory.
- The system discounts quantities of each ingredient with each coffee preparation.
- The system sends an alert to the administrator when an ingredient reaches a limit.
- The system informs a consumer when there is not enough quantity of a certain ingredient to prepare their coffee.
- The administrator updates the available quantity of the ingredients when they do a refill.

USE CASES DIAGRAM



UML DESIGN



REPOSITORY

<https://github.dev/kaviur/coffee-vending-machine>