Java Program Development CS1410

Group Report

Group 26

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# Description (Please Complete)

Inheritance

* Our system comprised of several library components which could be could be used again at other areas for different situations. One of the library components was the getProbability method which was used in two sub classes the Processing and Packing Machine class. These classes relied on the super class Product which sets the Probability p which would be used to determine which types of items would be produced more. Also the machine class creates a random generator which was to be used in the other classes to make sure that the food is produced at random. The Product class also has a setType method which provides the types of food which are to be produced. The sub classes Perishable and Non-Perishable then use the getType method to understand which products belong in their class.
* An example of a client code which was used in our project was the Jam method which was created to help see if there was a cluster of items waiting to be produced and then the machine would wait 60 seconds to clear the jam before it can continue the process. This method was made in the Simulator class and the way it works is that there is a check to see how many items are in the jam queue and if it increases the time should increase for every item that is currently in the jam queue.
* There are a quite a lot of changes which could’ve been made to the library classes in order to have supported simulations to provide better results. Such as\*

Class Description

Product

This is the main superclass which holds information like the type of food being produced, the cost of production and also sets the probability of what food item is to be produced

Perishable

This subclass holds the spoil name of food items which could expire and also generates the time it takes for the product to expire.

Non- Perishable

This class unlike the Perishable class is a sub class which holds information for food items that have no spoil time. For this system there was only one type of food item which is Soup powder.

Cheese

This is one of the subclasses for the subclass Perishable. This class holds the information for the cheese and provides its time for processing and also checks to see if the cheese has spoilt.

Blue Cheese

This is the other subclass under the subclass Perishable. Very similar properties with the Cheese class and only difference is that they have different processing times.

Soup Powder

This is a subclass of the subclass Non Perishable

Machine

This is a superclass which generates random values for the Processor and the Packing machines. It also gets the probability which was set in the Product class. It also contains arrays which are used for the processing and packing machines

Processing Machine

Packing Machine

This is a subclass of Machine and it is responsible for making sure that the food is packaged immediately after processing. It has a packing time of 10 seconds for each item in the case of which there is no jam. In the case of a jam in the machine, the packing time extends.

Conveyor Belt

Simulator

## GUI (PLEASE COMPLETE)

Want to insert a picture from your files or add a shape, text box, or table? You got it! On the Insert tab of the ribbon, just tap the option you need.

“Quote”

To apply any text formatting you see on this page with just a tap, on the Home tab of the ribbon, check out Styles.

UML



Results

Simulation