Assignment 10

Team 16

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Contents

Use Cases

Use Case 1: Seeing the total revenue

1. The system shows a welcome screen prompting user to log in.
2. User log in using the password.
3. The system shows the main administration menu
4. The user select "Statistics"
5. The system shows the statistics sub menu
6. The user select "Revenue"
7. The system prints out the total revenue

Use Case 2: Adding a new kind of product

1. The system shows a welcome screen prompting user to log in.
2. User log in using the password.
3. The system shows the main administration menu
4. The user select "Add Product"
5. The system asks user for product name, price, product description and initial amount of the product.
6. The user type in the product name, price and description and initial amount of the product.
7. The system adds the given amount of new product to the inventory, and gives the Product ID of the new product to user.

Use Case 3: Updating the inventory and product information

1. The system shows a welcome screen prompting user to log in.
2. User log in using the password.
3. The system shows the main administration menu.
4. The user select "Update Inventory"
5. The system prints out all the products with Product ID in the inventory and
1. asks user for Product ID of which product user want to update inventory
6. The user types in the product ID.
7. The system prints out the current name, price, amount and description of the given product and asks user for a new name, price, amount and description.
8. The user may type in the new name, price, amount and description and may keep blank for any question.
9. The system update the inventory with the non-empty values that the user has typed in

Use Case 4: Seeing all the available products

1. The system shows a welcome screen prompting user to log in.
2. User log in using the password.
3. The system shows the main administration menu.
4. The user select "View Inventory"
5. The system prints out all the products with Product ID, name and the amount in the inventory.

Use Case 5: Seeing all the items that a customer ordered

1. The system shows a welcome screen prompting user to log in.
2. User log in using the password.
3. The system shows the main administration menu.
4. The user select "Customer Details"
5. The system prompts user may search for a customer by ID, name, or address.
6. The user either:
    a. select ID and type in the ID of wanted customer
    b. select name and type in the name of wanted customer
    c. select address and type in the address of wanted customer
7. The system shows the details of a customer including all the items that a customer ordered.

Use Case 6: Calculating the total number of orders that have ever placed

1. The system shows a welcome screen prompting user to log in.
2. User log in using the password.
3. The system shows the main administration menu.
4. The user select "Statistics"
5. The system shows the statistics sub menu
6. The user select "Order Totals"
7. The system prints out the number of order that have ever placed

Use Case 7: Calculating the total number of loyalty card

1. The system shows a welcome screen prompting user to log in.
2. User log in using the password.
3. The system shows the main administration menu.
4. The user selects "Statistics"
5. The system shows the statistics sub menu
6. The user selects "Total Loyalty".
7. The system prints out the total number of loyalty card.

Requirements

- The system shall ask the user to input current password in order to enter the administration menu.
- The system shall generate administration options and the corresponding operation based on the user's input.
- The Inventory output shall reflect the actually inventory that automatic changes as the customers make orders.
- Users who type in the correct administrator password should be able to add a new kind of product to the inventory and be able to manually change the name, amount, price or product description.
- Users who type in the correct administrator password should be able to search a customer by name, address, or ID.
- The system should be able to run on Linux, Windows, OS X, and FreeBSD operating system.
- For all users' requests, the system should be able to response in 1 minute.

Domains

- Manager interface
    - Interact module for staff, a kind of user interface
    - Showing the main administration menu and reporting the results
- Data manager
    - Module that updates and keeps track of the data, verifies the data integrity of it.
- Algorithms
    - Module that computes the sales revenue, number of orders etc.

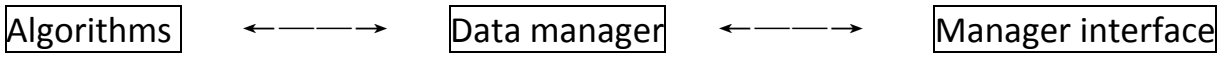
Relations

- Manager interface
    - interacts with the user who can type in the administrator password correctly,
    - provides statistics, allows staff to manage inventory and customer information.
- Data manager
    - Handles all information about the bakery system used for staff – the inventory and the products in it, the customers and the products in their cart.
    - Data manage is responsible for data integrity and communicates with the algorithms: requests the inventory data, reports the sale revenue to the Manager interface.
    - Requests updates from the algorithms if the user want to change the inventory or the information about certain product.
- Algorithms: Deal with the requests from data manager, determine the sale revenue, number of orders etc.

Constraints

- The product price must be greater or equal to zero.
- The quantity of product in the inventory or in the cart of a customer must be greater or equal to zero.
- The number of customers who have rewards card must be greater or equal to zero.
- The number of sale revenue must be greater or equal to zero.

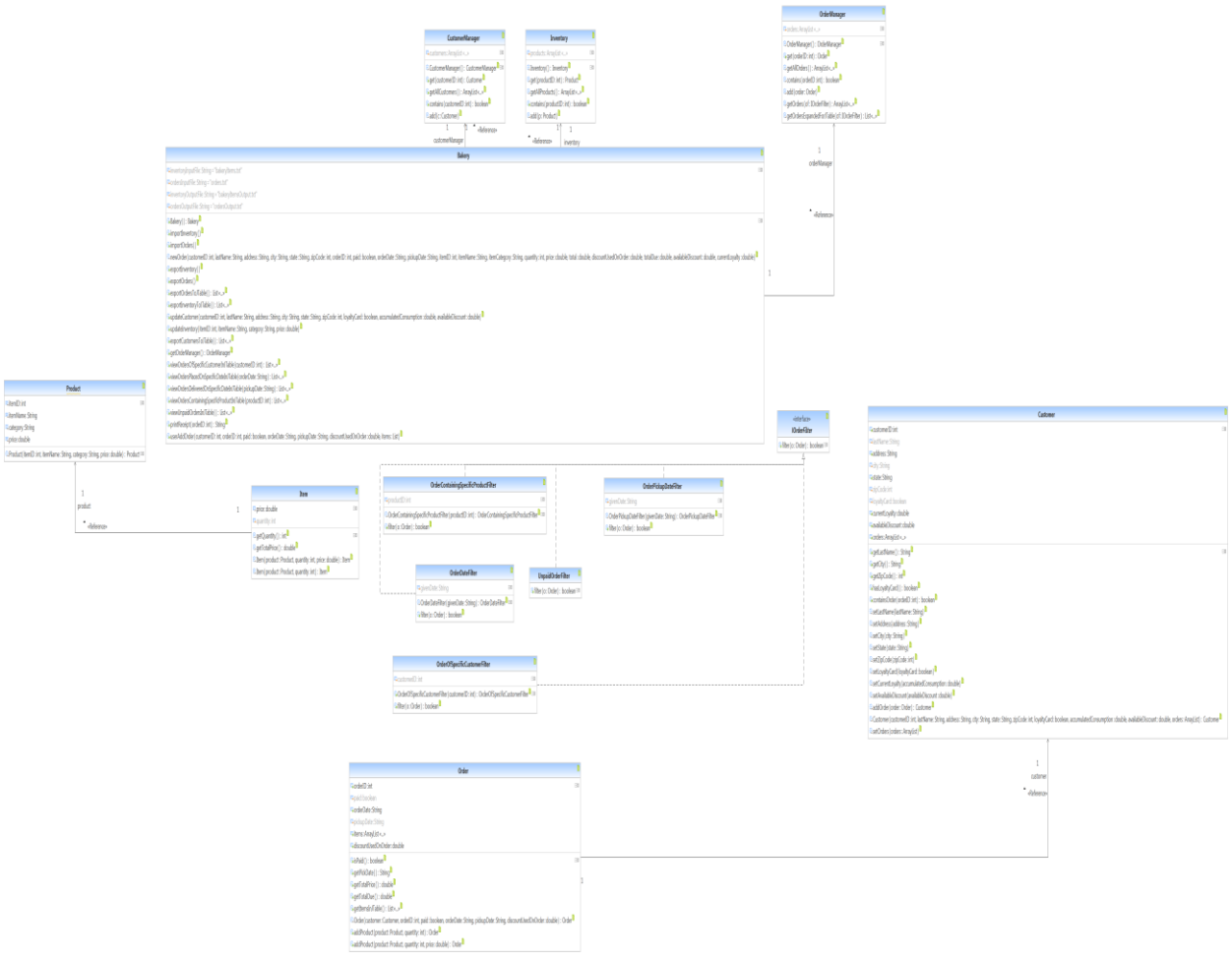
Module dependency diagram



Data model

- Bakery
    - Class that contains all the customers and inventory in a bakery, and provides the methods for users.
- Customer
    - Class that stores all the information of a customer and provides methods related to a customer.
- Cart
    - Class that stores all items that a customer ordered and provides related methods such as calculating the total price, updating cart etc.
- Inventory
    - Class that stores information about available items and their quantity, and provides methods to update the inventory and print out the inventory.
- Product
    - Class that stores information about a product such as the name, price, and the product description. The class also provides methods to update the product information and print the information.

UML



Team member contributed to the assignment

To complete this assignment, we discussed it in person and written it part by part by using a google doc.

We discussed the structure first, and Zhen Wei draws the UML diagram. During the discussion, we also talk about the dependency diagram and data model .Base on the UML diagram and requirement, ZhenHuan Wu writes down some use cases, Domains, relations and constraints. Zhen Wei draw dependency diagram and data model. When we finished the work, we switched the task and helped each other to improve and fix some mistakes. At last, we work hard to make the document looks good. Both of us work hard and really understand the work.