NORTH SOUTH UNIVERSITY
Department of Electrical and Computer Engineering

CSE 215 Project Report

on

"Supermarket Product Management"

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Contents

Introduction

The project called the Supermarket Management System works with supermarket automation and covers both the managing and selling of goods.

The purpose of this project is to improve the existing system by making it more accurate, dependable, quick, and simple. There are various reasons for launching the project, including the numerous inefficiencies that salespeople deal with when selling products using the manual technique as humans are bound to make mistakes sooner or later. Thus, this is where the software will come handy.

About

A Supermarket Management System is a software application enabling management of products and selling them easily without the need to do calculations manually.

Generally, the software will provide a friendly user interface to add or remove or sell products and upon selling will automatically update the existing inventory.

Click here to access Github

Click here to access Trello

Purpose and benefits of Supermarket Stock Management Project

The purpose behind the creation of this software was to make things easier and error free. Owner of supermarkets often face difficulties on keeping a track of the inventory. The staffs also waste a lot of time adding the total of the selling products and making an invoice. Thus, arose the need of a management software.

Some benefits and Features of Supermarket Stock Management

- Easy to add/edit product.

- No chance of duplicate IDs of product. (The software will not allow it)

- Can easily check which product is not currently at stock. This allows the employee to make a list of products that needs to be restocked.

- Sorting features available by which the user can easily check the products according to his/her needs.

- Saves time as everything is automated.

- While selling products to a customer, the staff just needs to select the product and write the quantity. The invoice will be automatically generated upon pressing a sell button. The invoice is also printable, and can be saved in a database for future purpose.

- Once some products are sold, no one needs to update the inventory. The inventory is automatically updated.

- Less chances of any kind of errors as the software handles most types of cases where an error might have been made. (Negative amount/more quantity sold than available/ wrong calculation of tax or summation of products)

- User Friendly Graphical Interface which is easy to use.

User Story

- **<u>Use Case 1:</u>**

  Mr. Xyz, the Admin of a shop need to assign a new employee or a staff. He logs in to his account where he finds a button "Add Employee" . Then he can add an employee. The ID needs to be unique, if not, then the software will show an error message.

- **<u>Use Case 2:</u>**

  Mr. Xyz, the Admin of a shop needs to edit information of an employee or a staff. He chooses the option to edit the employee/staff and there he will find a list with all information which he can change. Only the admin can change the password of employee/staff account.

- **<u>Use Case 3:</u>**

  The admin can see the list of products and can tell the employee to make necessary changes on the inventory.

- **<u>Use Case 4:</u>**

  Employee A checks the message from the admin then he goes to the edit products option where he finds a list of all the products. Then he selects a product to which he wants to make some changes and presses the save button.

- **<u>Use Case 5:</u>**

  Employee A receives some new products from the supplier and wants to add them to the stock list. He presses the Add Product option in the software and there he can add the product by filling the necessary options.

- Use Case 6:

  A customer goes to Staff X at the counter in the shop with products they want to purchase. Staff A identifies the product by looking at the ID sticker of the product and selects those items to sell. Then the software will generate an invoice once the staff clicks on sell button.

Target Customers

- Any Supermarket Owners can use this software without any further changes.

- Other Product Selling Companies can also adopt this software in their management with little changes made in the interface.

Software Features and Descriptions

The software will open with a Login Page where the user needs to select Admin/Employee/Staff. Then enter their respective ID and Password

Admin's screen will have:

- Add Employee.

- Add Staff.

- Edit Employee.

- Edit Staff.

- See Products.

- Send Message to Employee.

Employee's screen will have:

- Check Messages.
- Add Products.
- Edit Products.
- See Products.

Staff's screen will have:

- See Products.
- Sell Products.

Some Features:

- Products can be searched using ID.
- Invoice is Generated after selling.
- No duplicate IDs of anything

Limitations of the project

- The data is stored locally. So, the data is at risk and vulnerable.
- Does not have a Bar/QR code feature which would make product identification much faster.
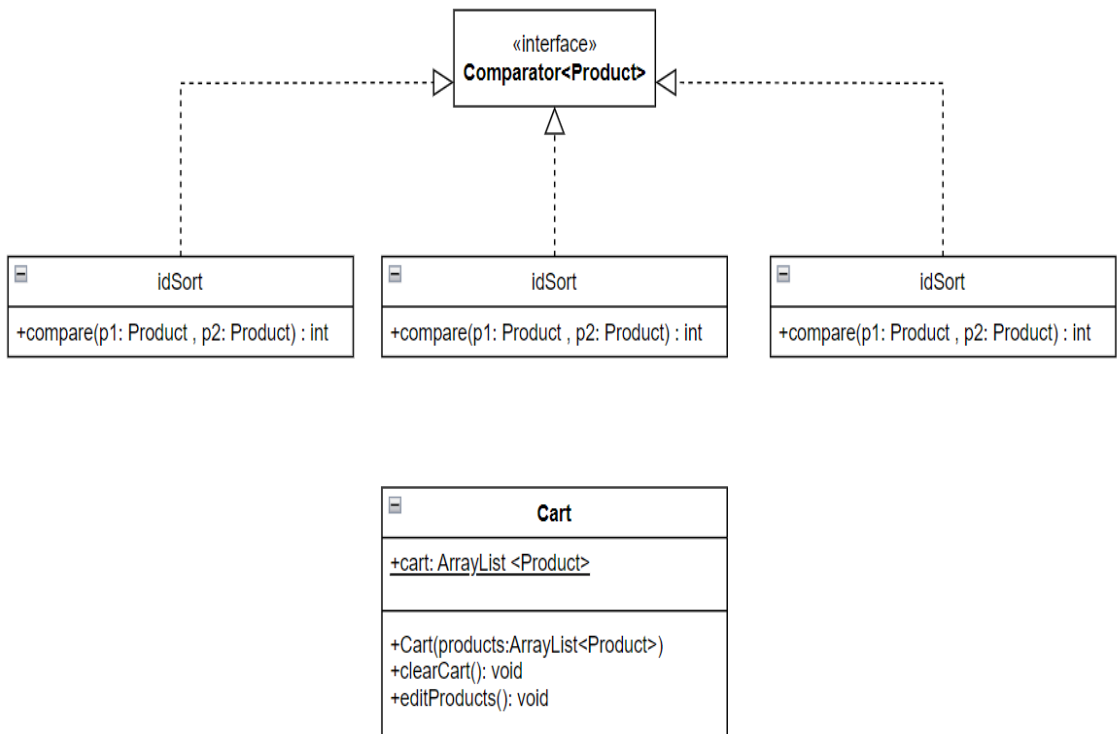
Tools And Technologies

- Java.
- Java Swing.
- Latex.

# Updates made in the project after Project Designing

Some classes were added to sort the products.
And instead of the invoice class, a Cart class were created where the staff added the products that were being sold. Upon selling It generated an invoice using a jFrame.

```
                        «interface»
                   Comparator<Product>
```

⊟ idSort
+compare(p1: Product , p2: Product) : int

⊟ idSort
+compare(p1: Product , p2: Product) : int

⊟ idSort
+compare(p1: Product , p2: Product) : int

⊟ Cart
+cart: ArrayList <Product>
+Cart(products:ArrayList<Product>) +clearCart(): void +editProducts(): void

A few other adjustments have been method in other Classes to while developing.

Screenshots of Project
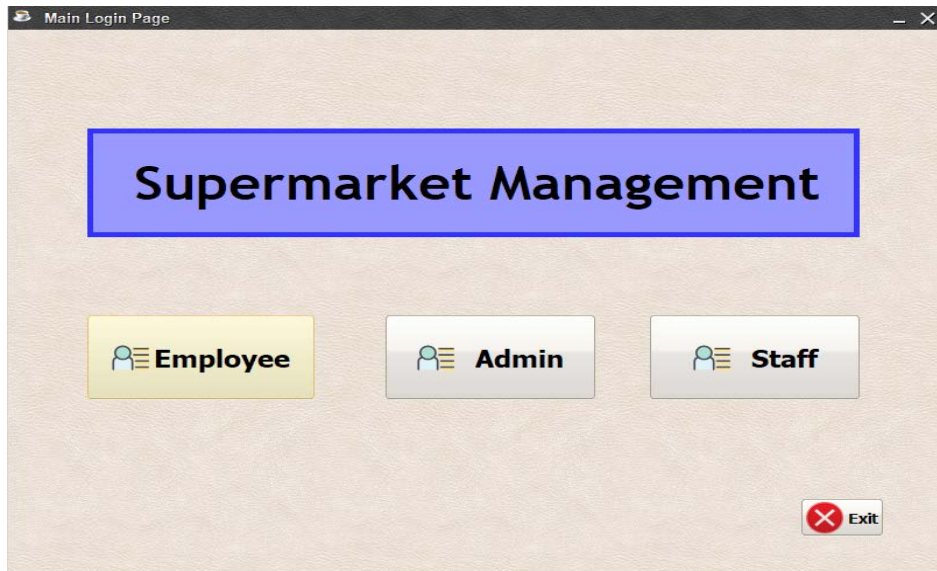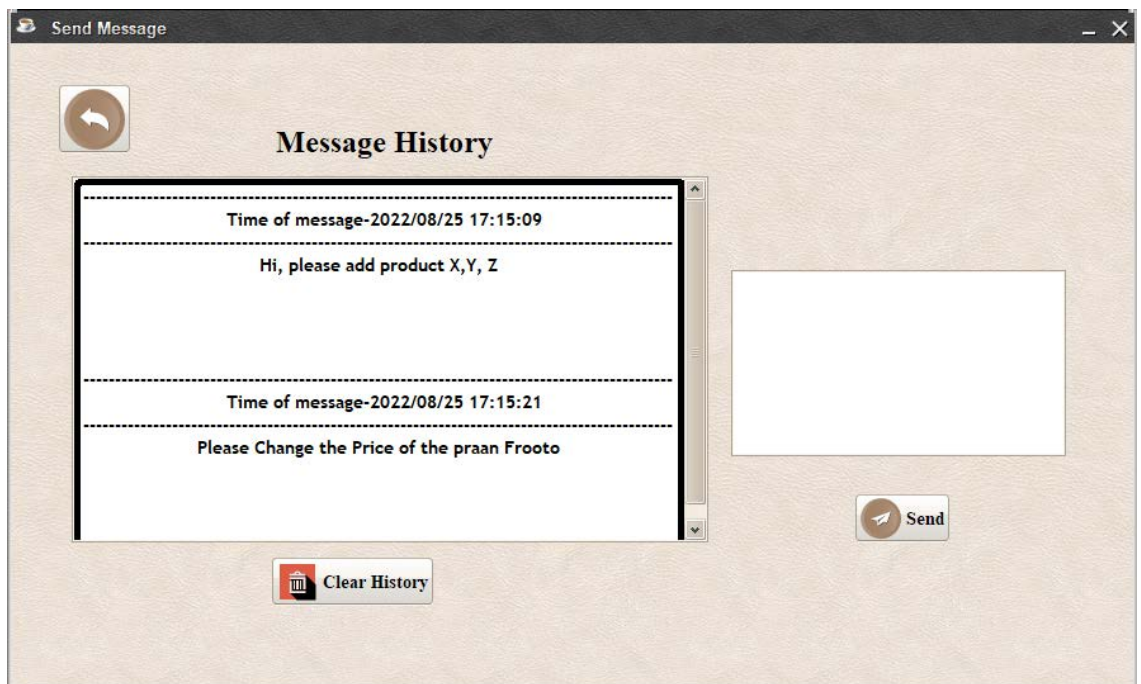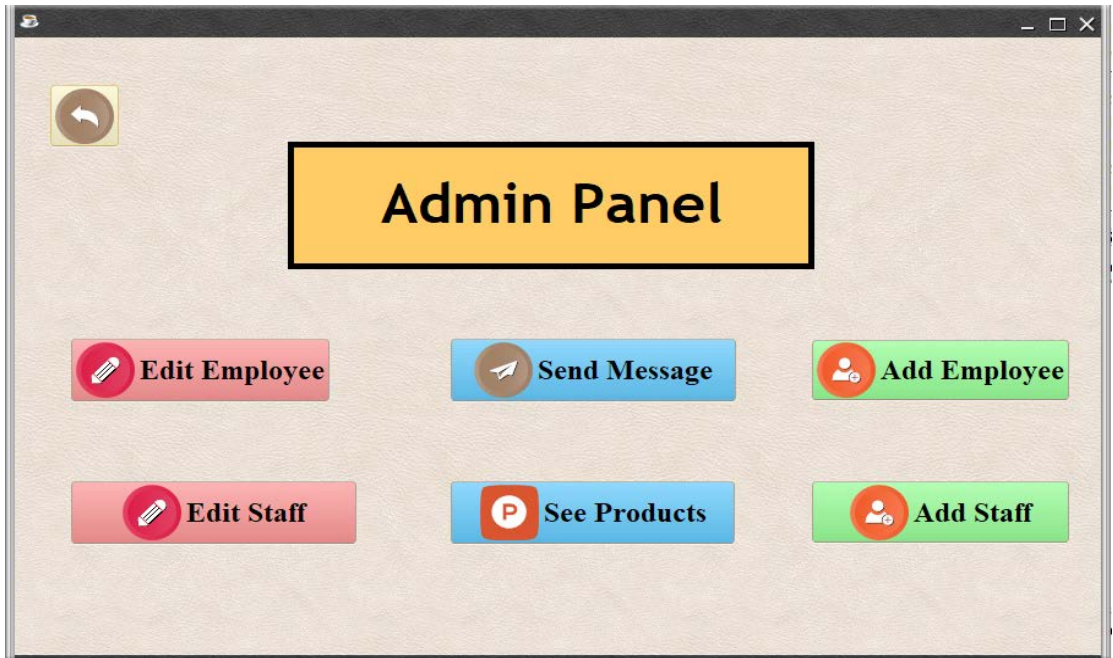
Sell Products

Instructions: Select an item and choose the quantity. Then add it to the cart.
After doing this for all the products being sold. Click on Sell Products

Sort By: | ID | Quantity | Price | Type |

ID	Quantity	Name	Price	Type
1	25	Praan Frooto	20	Beverage
2	25	Coke	20	Beverage
5	25	Pepsi	20	Beverage
1014	57	Cow Meat	800	Meat
1567	157	Chicken	300	Meat
1278	541	Napa	10	Nonfood & Ph...
10	20	Cake	200	Prepared Foods
874	10	Crab	1000	Seafood

ID:

Quantity: 1

Name:

Price:

Type:

⊕ Add to Cart

🔒 Check Cart

✓ Sell Products

INVOICE

```
===========================================
                 Invoice
===========================================
   Name            Quantity          Price
   -------         ----------        ------
   Pepsi           1                 20.0
   Chicken         1                 300.0
   Napa            1                 10.0
   Cake            3                 200.0
===========================================
              --Sum      =930
              --Tax(10%) =93
              --Total    =1023
```

🖨 Print

Project Timeline

- Day 1-2: Project Proposal.

- Day 2-4: Project Designing.

- Day 5-10: Both Developers Worked on the the project's code.

- Day 11-12: Checked for Errors in the project and fixed them.

- Day 13: Designed the GUI to make it User Friendly.

- Day 14: Project Report.

Possible Future Updates

This might not be the best solution for the given problem, but it will drastically change the experience of management and save a lot of time either way. A few further updates can be made upon user reviews and feed-backs and if the data is linked with an online platform, the data will be secure and safer.

Conclusion

The goal of this project was to make the management system more accurate, dependable, quick, and simple. It was launched for a variety of reasons, including the numerous inefficiencies that salespeople face when selling products manually, as humans are not perfect. As a result, the software will be useful in this situation to avoid mistakes and save a lot of time.