SUPERSTORE MANAGEMENT SYSTEM

PROJECT DOCUMENTATION

2024

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1. Introduction:

a. Background:

In today's active retail industry, managing the Superstore System is crucial to preserving profitability and ensuring customer satisfaction. Straight strategies for actually dealing with stock, deals, clients, and laborers, then again, can be tedious and loaded with blunders. The Superstore Management System project aims to solve these problems by creating a desktop application that makes superstore management easier and more efficient. Administrators and employees will be able to carry out their day-to-day responsibilities more quickly and precisely thanks to this application, which will replace traditional manual actions with a cutting-edge, user-friendly tool that combines everything into a single interface, resulting in improved management as a whole.

B. Objectives:

Actual Stock Administration: We intend to construct areas of strength for stock that make it simple to follow and oversee stock, so adding, refreshing, or erasing items is a breeze.

Sales Management: We want to make it easier to handle transactions, make invoices, and keep a detailed sales history to make the sales process easier.

Management of Customers: We want to effectively manage the information about our customers, such as keeping track of their past purchases and establishing loyalty programs to keep them coming back.

Management of Employees: To streamline HR tasks, we intend to simplify the management of employee records, such as their roles, attendance, and payroll,

Reporting: To assist in making better decisions, we will provide tools that produce various reports, such as sales, inventory, and employee performance reports.

User-Friendly Interface: We want to create a natural and guileless interface, even for people who don't know much about computers, so that everyone can use it easily.

c. Scope:

Dashboard: I'll put together a single dashboard that shows you all of the important metrics, like sales, inventory, and employee attendance, in one place.

Module for Inventory Management: To confirm that you always run out of essential items, this module will help you manage product details, categorize items, monitor stock levels, and set up reorder alerts.

Deals Sales Module: We'll set up a framework to deal with deals exchanges without a glitch, apply limits, print receipts, and track day-to-day deals exercises easily.

Customer Management Module: This module will help you better understand your customers by storing all of their information, managing faithfulness plans, and keeping track of their purchase history.

Administration Module: We'll adopt a module to make it simple to manage worker records, track participation, and interact with finance, making HR undertakings more effective.

Module for Reporting: A reporting system that can generate and export reports on sales, inventory, and employee performance will be available to you. These reports will help you make informed decisions.

User Authentication: We'll use role-based access control to make sure that administrators, cashiers, and managers, among other people, can access specific parts of the system.

2. Abstract:

The purpose of the Superstore Management System is to aid in the management of a superstore more conveniently and effectively. It assists the store managers and staff to perform useful activities like the control of stock, sales, customers, and employee details. This makes the system efficient since such routines take time and can lead to errors in the manual process.

They include:

Inventory Management: Concerns itself with the ability to know the amount of stock available, the ability to include more stock at any point and the ability to create alerts that warn users once the available stock reaches a set limit.

Sales Management: Makes billing effortless users and does sales recording with ease & efficiency, including Offering transaction documentation like invoices

Customer Management: Saves customer's details, keeps track of which items the customer has bought and their frequency, and supports the lifetime value of the customer by offering reward plans.

Employee Management: Keeps employee information fields that enable presence, and salary management among even more.

Reporting: The system provides a range of reports to assist in improving on the prospective areas of sales, stock, and employees level performance.

User-Friendly Design: The users of the system do not have advanced computer literacy, hence making the system suitable for all age groups as it is computer-free.

The above system is developed using Java and MySQL which tend to be updated in real time thus enabling the managers to be in a position to make quick decisions.

In as much as the system works well, further development is predicted.

1. Sustaining the system as the quantity of data handled in the system continues to increase as the store enlarges in size.

2.Conducting staff training to optimize the use of the system by everyone.

3. Introducing mobile access to the system to enhance activity.

4. Changes in the system should be consistent to cater to database security.

3. Technology Stack:

1. **Programming Language:** Java

2. **Framework:** JavaFX + Scene Builder

3. **Database:** MySQL

4. **IDE:** NetBeans 8.2

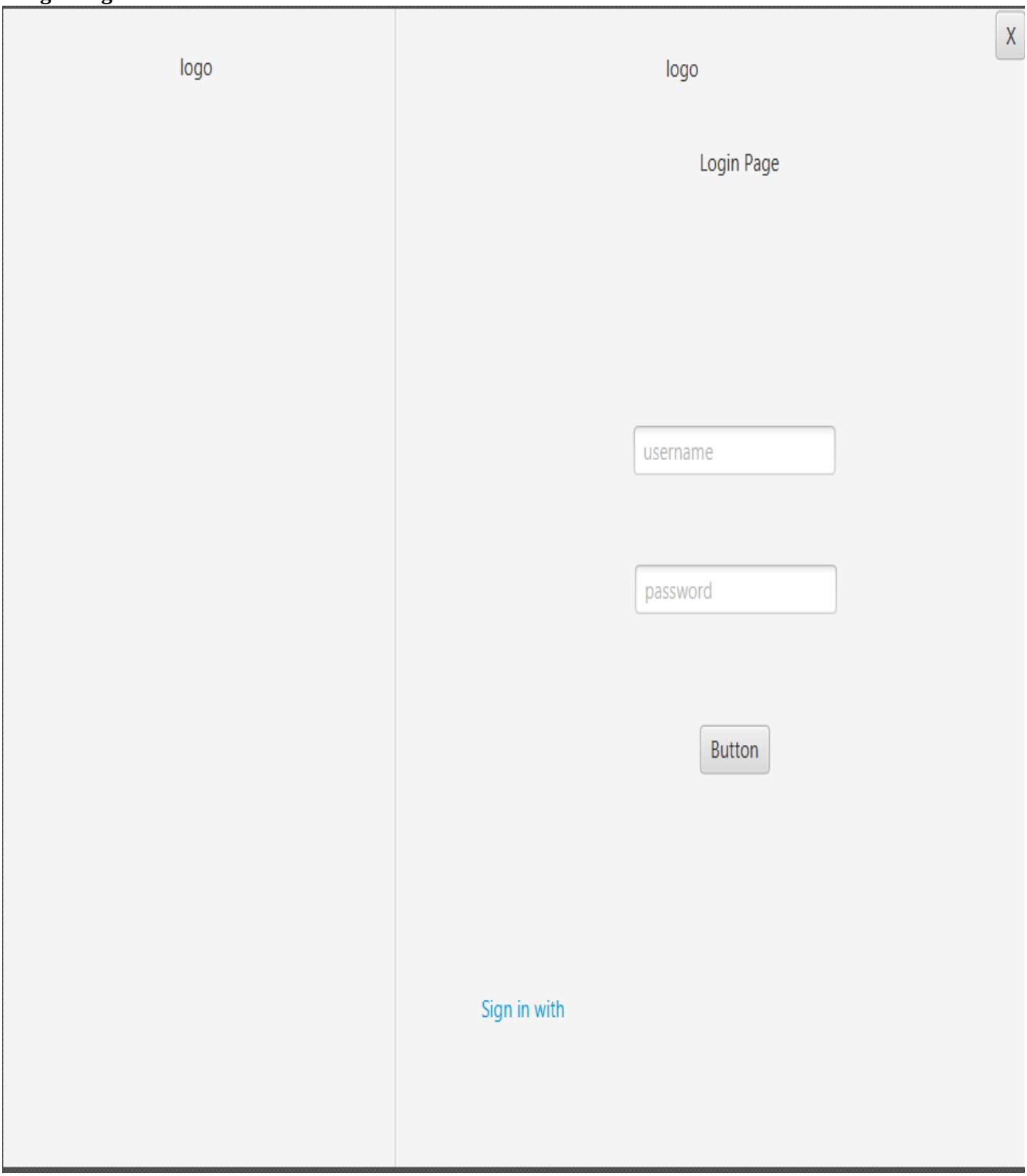
5. **Additional Libraries/Tools:** iReport (JasperReports) for generating receipts

4. Design Process:

a. Wire-framing:

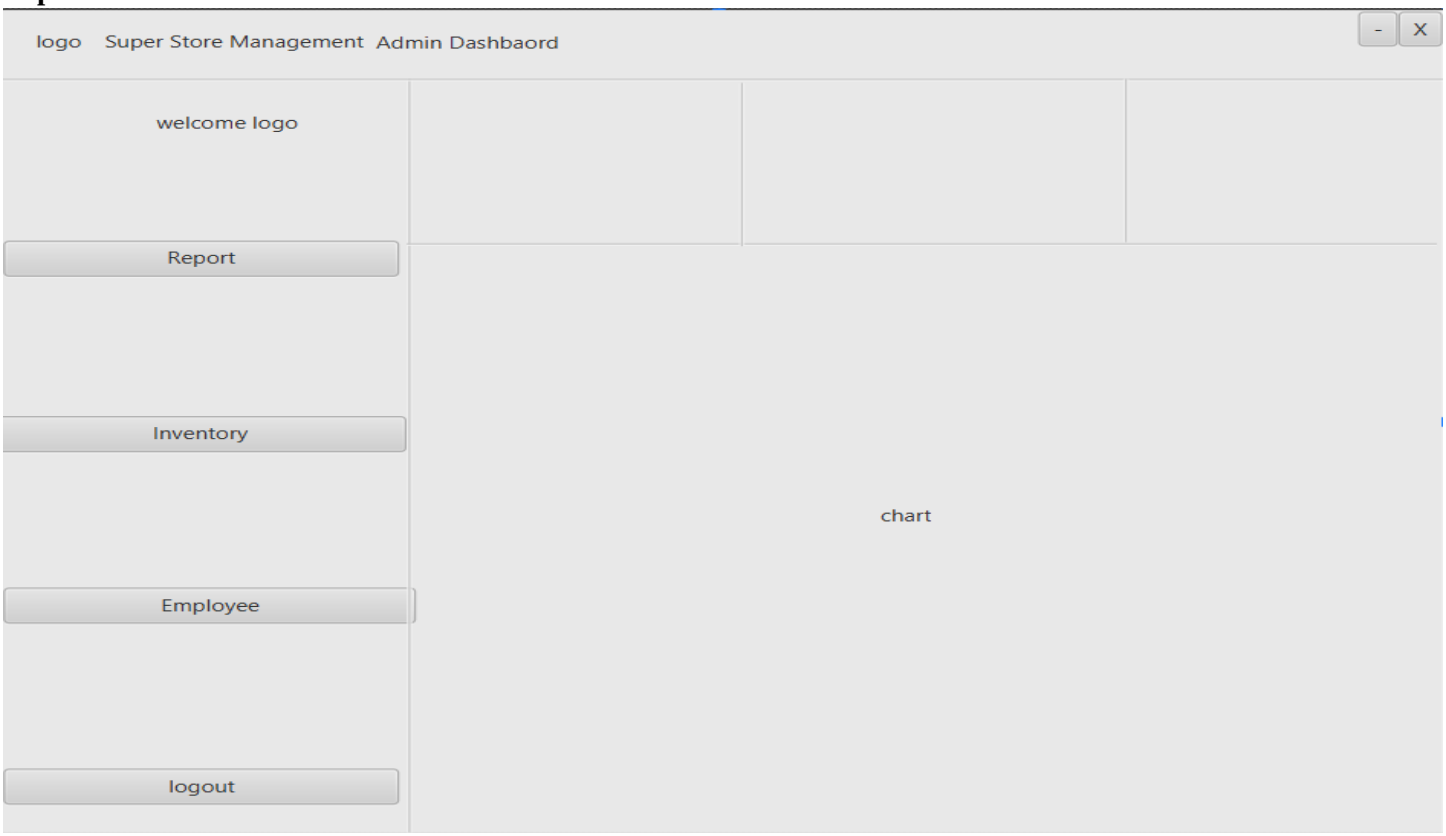
In the Design process, I make wireframes first because wireframe gives ideas more in detail.

Login Page:

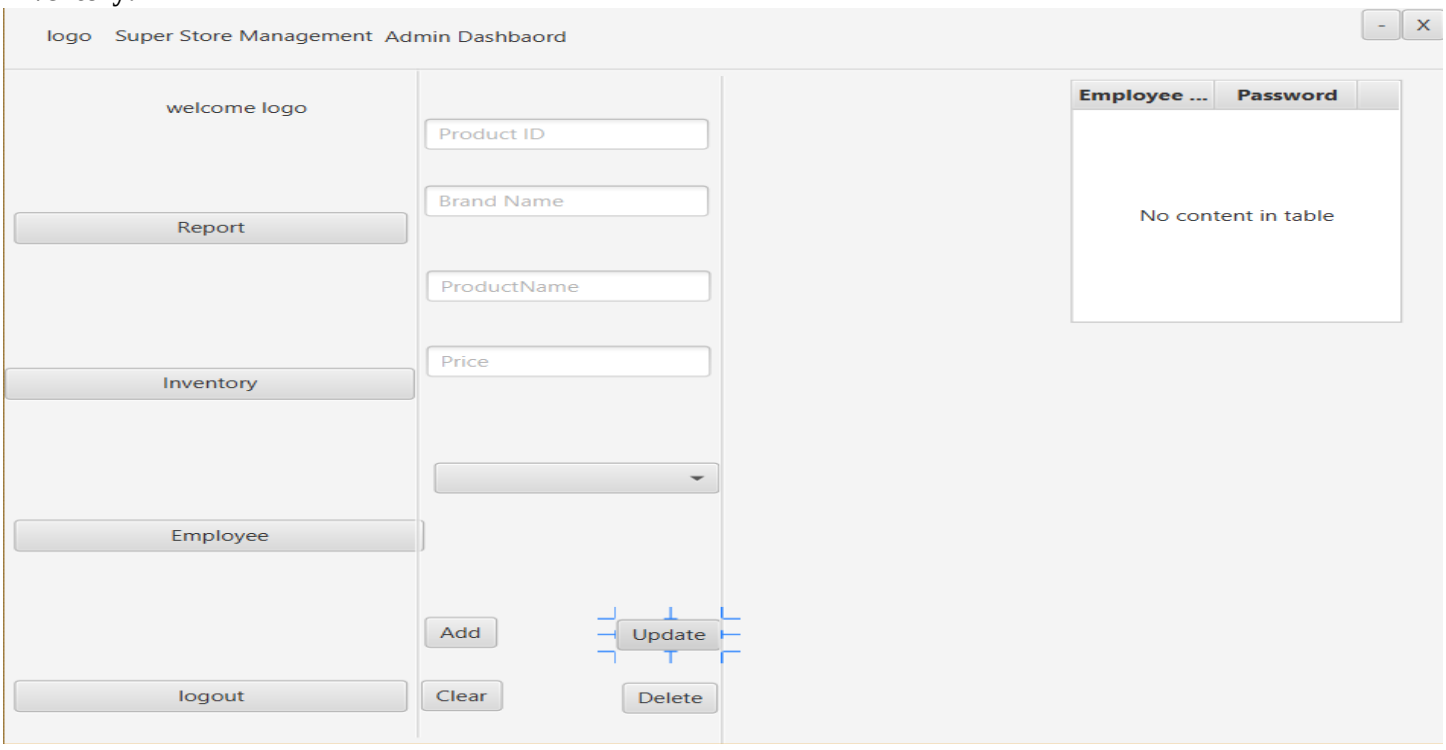


Admin Portal:

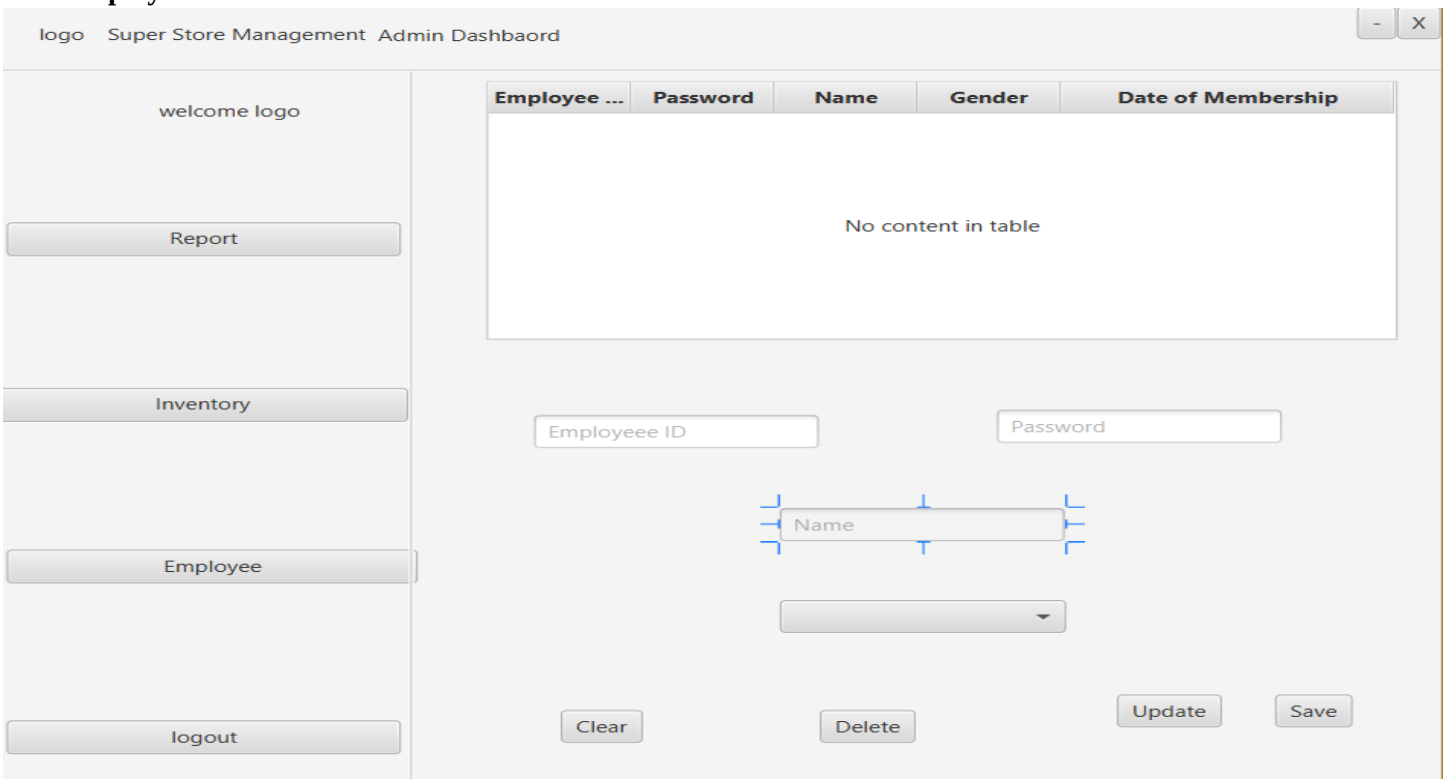
Reports:



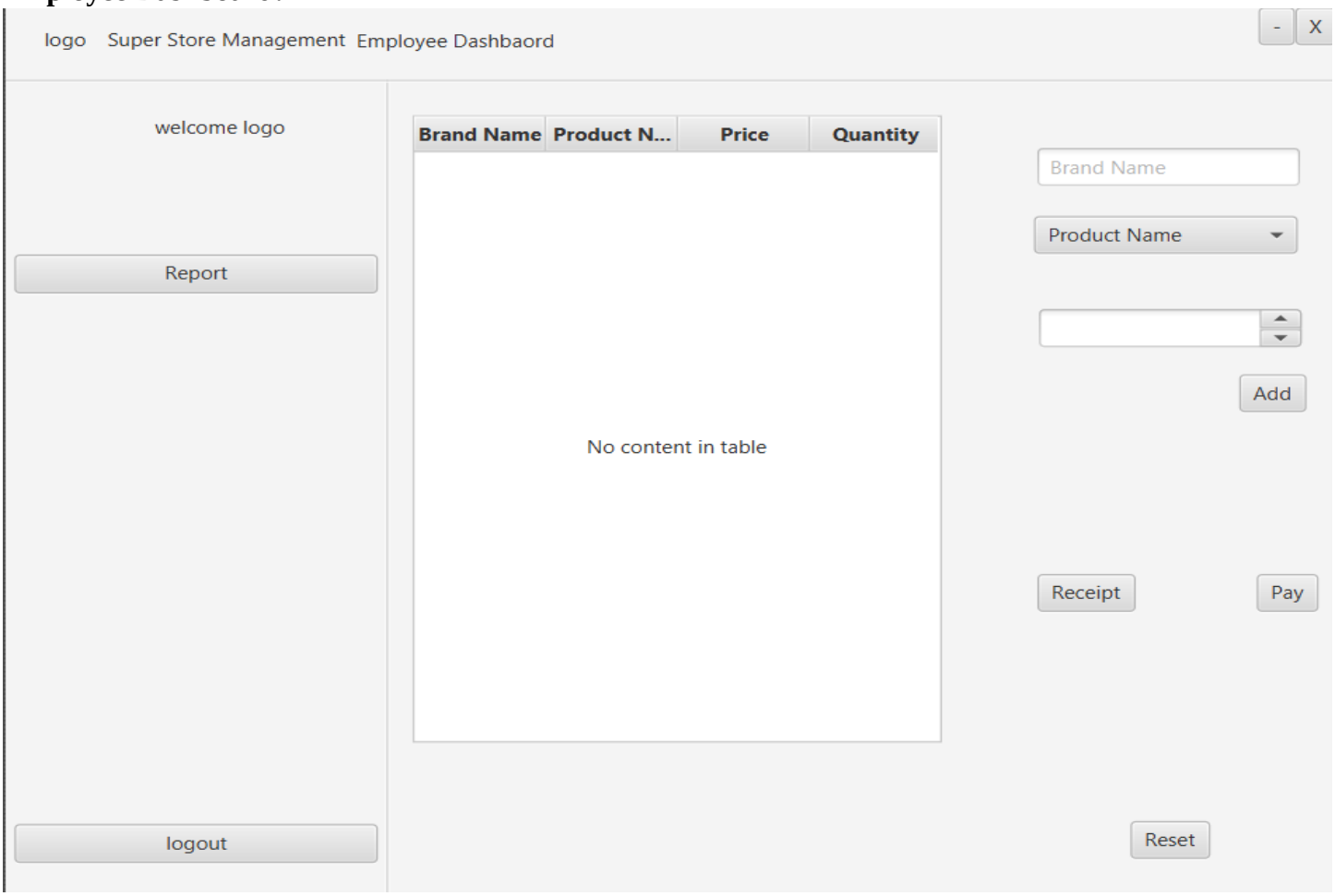
Inventory:



Add Employees:



Employee Dashboard:



b. Database Design:

After Wire framing I make database schemas which are as under:

Overall Schemas:

	Table	Action	Rows	Type	Collation	Size	Overhead
☐	admin	Browse Structure Search Insert Empty Drop	1	InnoDB	utf8mb4_general_ci	16.0 KiB	-
☐	customer	Browse Structure Search Insert Empty Drop	19	InnoDB	utf8mb4_general_ci	16.0 KiB	-
☐	customer_receipt	Browse Structure Search Insert Empty Drop	5	InnoDB	utf8mb4_general_ci	16.0 KiB	-
☐	employee	Browse Structure Search Insert Empty Drop	2	InnoDB	utf8mb4_general_ci	16.0 KiB	-
☐	product	Browse Structure Search Insert Empty Drop	5	InnoDB	utf8mb4_general_ci	16.0 KiB	-
	5 tables	Sum	32	InnoDB	utf8mb4_general_ci	80.0 KiB	0 B

Admin:

	#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
☐	1	id	int(100)			No	*None*		AUTO_INCREMENT	Change Drop More
☐	2	username	varchar(100)	utf8mb4_general_ci		No	*None*			Change Drop More
☐	3	password	varchar(1000)	utf8mb4_general_ci		No	*None*			Change Drop More

Customer:

		id	customer_id	brand	productName	quantity	price	date
☐	Edit Copy Delete	17	1	Candy	FruitGala	3	450.0	2024-09-09
☐	Edit Copy Delete	18	2	Candy	AamRass	2	300.0	2024-09-09
☐	Edit Copy Delete	19	3	Biscuit	FruitGala	3	450.0	2024-09-09
☐	Edit Copy Delete	20	4	Candy	FruitGala	3	450.0	2024-09-11
☐	Edit Copy Delete	21	4	Candy	AamRass	3	450.0	2024-09-11
☐	Edit Copy Delete	22	5	Candy	FruitGala	5	750.0	2024-09-11
☐	Edit Copy Delete	23	5	Candy	AamRass	5	750.0	2024-09-11
☐	Edit Copy Delete	24	6	biscuit	Sooper	4	1240.0	2024-09-11
☐	Edit Copy Delete	25	6	biscuit	Rio	8	2480.0	2024-09-11
☐	Edit Copy Delete	26	6	Candy	FruitGala	10	1500.0	2024-09-11

Customer Receipt:

	id	customer_id	total	date
Edit Copy Delete	8	8	2250	2024-09-11
Edit Copy Delete	9	9	450	2024-09-11
Edit Copy Delete	10	10	900	2024-09-11
Edit Copy Delete	11	11	500	2024-09-12
Edit Copy Delete	12	12	100	2024-09-13

Employee:

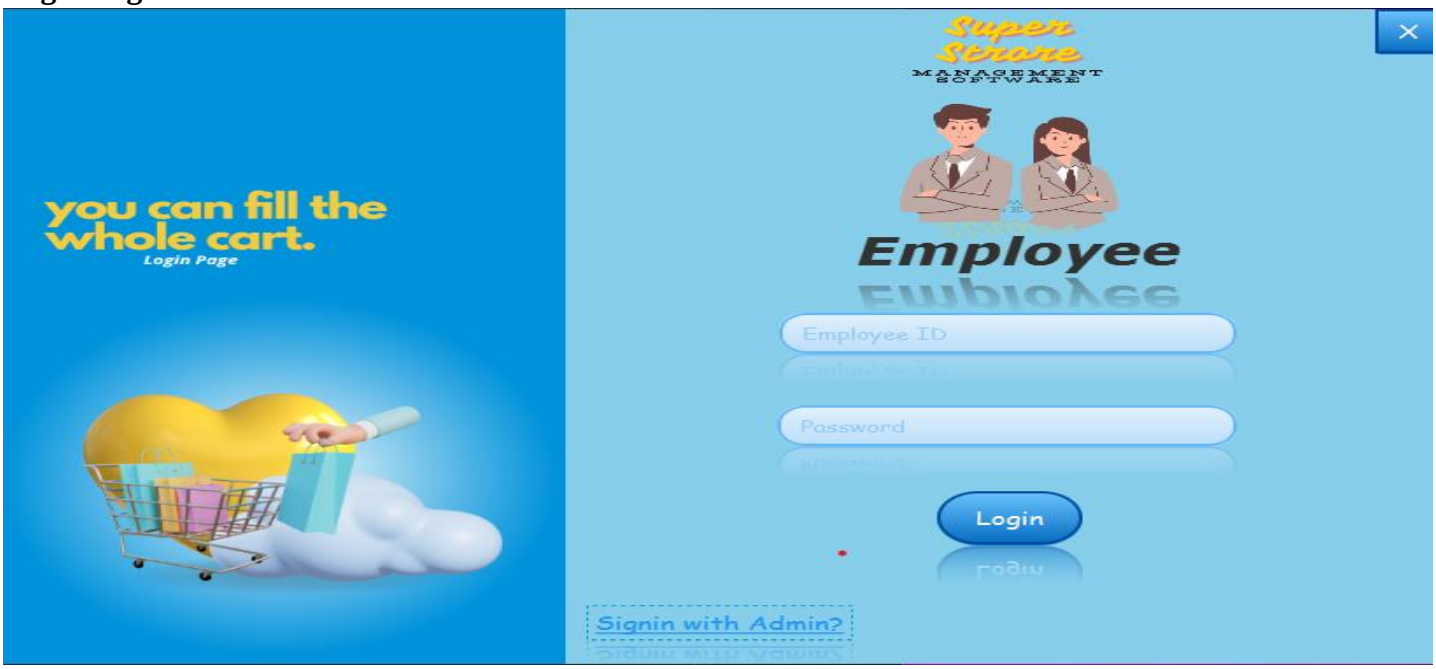
	id	employee_id	password	firstName	lastName	gender	date
Edit Copy Delete	1	1973	superemployee	Aliyan	Amjad	Male	2024-08-29
Edit Copy Delete	2	1970	superemployee	Hanan	Hamza	Male	2024-09-03

Inventory:

	id	product_id	brand ▲ 1	product_name	status	price
Edit Copy Delete	5	prod5	aliyan	amjad	Available	100
Edit Copy Delete	6	prod2	Biscuit	Sooper	Available	100
Edit Copy Delete	7	prod3	Biscuit	Rio	Available	100
Edit Copy Delete	8	prod4	Candy	Hajmola	Available	75
Edit Copy Delete	9	prod6	Candy	AmmRass	Available	75

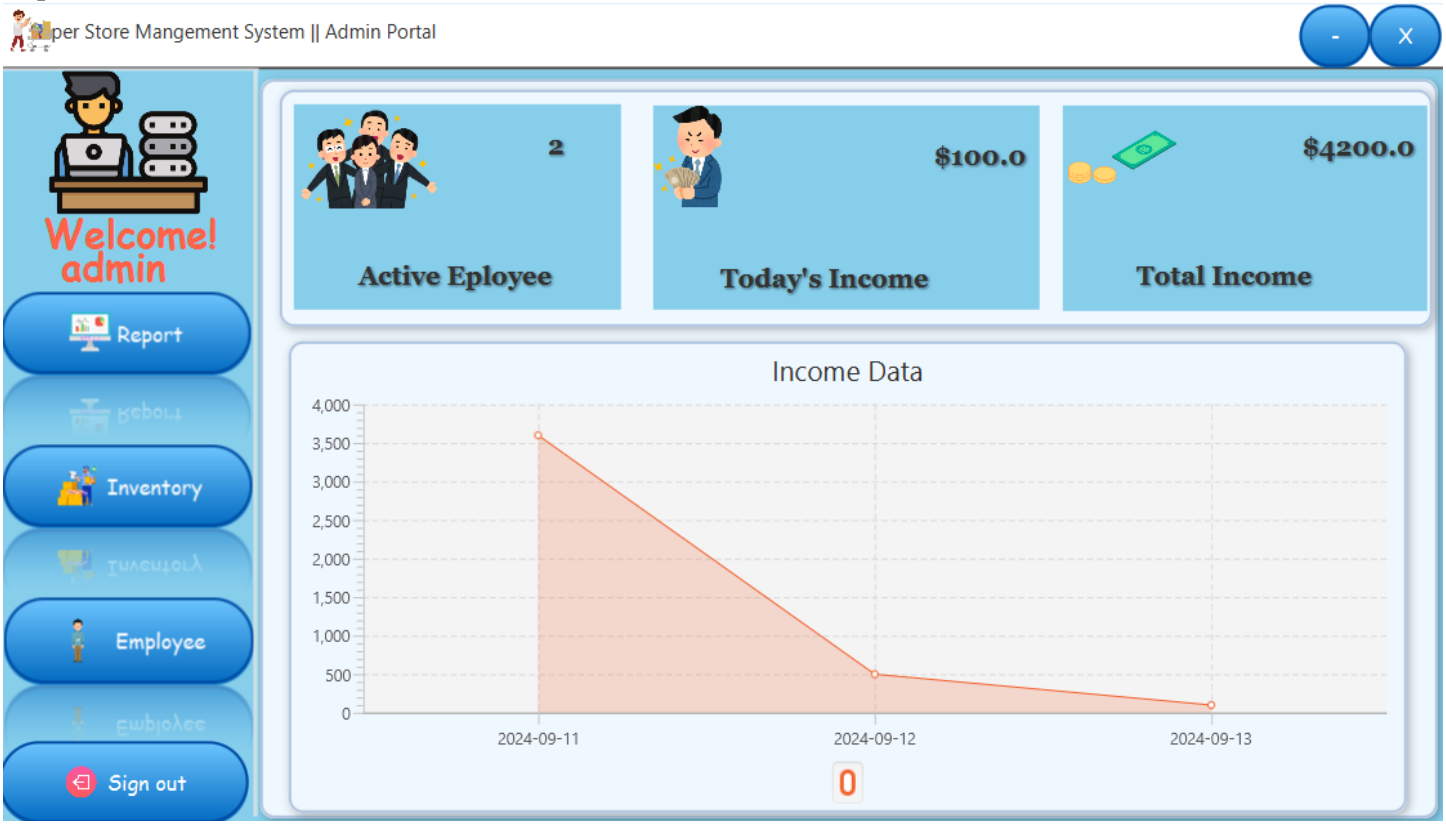
c. UI/UX Design:

Login Page:



Admin Portal:

Reports:



Inventory:

Add Employees:

Employee Dashboard:

5. Challenges Faced:

Income tracking:

Challenge:

One of the major difficulties confronted was in profit verification and allocation. These errors occurred mainly due to the gap between sales that were on record and those that should have been realized. Non-alignment in sales figures, data entry errors, and omission of discounts or refunds led to flawed financial records. This rendered the budgeting process, financial statements, and even decision-making ineffective.

Solution:

To address this particular issue, certain measures were taken:

Automation of Sales Recording: To facilitate automation of tracking sales transactions, the sales recording system was linked to the point of sales (POS) system. The emphasis was on capturing every transaction such as discounts, refunds, and promotions to eliminate the risk associated with manual entry.

Real-Time Reporting: A real-time reporting facility was included to facilitate tracking of sales and income generation activities. This means that in case of any inconsistency, measures to correct them were implemented immediately.

6. Conclusion:

The Superstore Management System effectively automates inventory control, sales management, and customer information management. The system optimizes operations by concentrating on core activities, reducing inaccuracies, and boosting productivity within the shop. One benefit of implementing the system is that it avails information when required, especially with the internet, improving decision-making and customer satisfaction.

Recommendations and Future Steps:

Consider the upward growth of the store and the need to resolve the capacity constraints faced by the system regarding inventory and transactions of customers. This could entail developing more sophisticated database management systems that would also entail moving such databases to the cloud.

User Training: Dominating the system's deployment and core processes with perpetual reliance on a few people means that the organizational output and use of the system would be highly compromised.

Advanced Analytics: To follow and understand customers' behavior, trends evolution, and stock optimization, the store will need advanced analytics speech, and will stimulate business development.

Mobile Integration: As the system has infra on mobile devices managers and staff would gain added flexibility in terms of monitoring and managing operations even in the absence of the core system.

Security Enhancements: Data of such kind as a customer and store inventory is classified as sensitive, as a result, the system not only requires encryption but also regular security upgrades including user addition while limiting exposure to unwanted data to deter loss.