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# Introduction to Project

- In the fast-paced world of today, effective management of grocery stores has become essential to meet the increasing demands of consumers.
- The Grocery Management System is a comprehensive solution designed to streamline and automate various aspects of managing a grocery store or supermarket.
- This Python-based project aims to enhance the efficiency and accuracy of day-to-day operations, offering a user-friendly interface for store administrators.
- By automating various processes and providing valuable insights this project strives to revolutionize the way grocery stores operate and saves time of store administrators.



# Problem Statement

- Many grocery stores still rely on manual methods for recording sales, tracking inventory, managing bills and handling discounts.
- An automated system for updating inventory levels in real-time, eliminating the need for manual stock counts and reducing the time and effort required to keep track of available products is a need of hour.
- To design a solution that minimizes data entry errors in inventory management and billing, ensuring accurate records and preventing issues such as incorrect stock levels or pricing discrepancies.
- To create a system that not only automates current record-keeping but also archives historical data for analysis using database which would help in identifying trends, making informed business decisions, and planning for future demand.



# Objectives of the project

1. Optimization  
Design a solution that provides real-time updates on inventory levels, ensuring accurate stock information, and automating stock replenishment processes to prevent out-of-stock situations.
1. Scalability  
Design the system to be scalable, accommodating the growth of the grocery store by easily adding new products and customers without compromising performance or efficiency.
1. User Friendly  
Implement an automated billing system and reporting system that generates reports on sales and inventory.





# Requirements of the system (Hardware, software)

## HARDWARE

- A laptop or desktop Processor: Core i3 or above
- RAM: 4GB

## SOFTWARE

- GitHub for collaborative team work
- Git
- Visual Studio Code
- MySQL-For database management



# Literature Survey

Sr No.	Year	Authors	Name	Content
1.	April 2021	Swapnil Shah, Yesha Patel, Keyur Panchal, Preksha Gandhi, Priyanshi Patel, Arpan Desai	Python and MySQL based Smart Digital Retail Management System	Shopwell, an RMS, is developed using Python, MySQL, and Android Studio, aiding customers in tracking product expiry and expenditure analysis. It addresses the common issue of neglecting expiry dates and overspending. Shopwell offers a mobile app interface for convenient usage across devices. Upon partnership with retail businesses, a link is generated on bills for direct access to the app. Customers can also scan a QR code offline for the same functionality. The app records purchase details, focusing on expiry dates and expenditure, ensuring timely consumption and budget adherence.



# Literature Survey

Sr No.	Year	Authors	Name	Content
2.	November 2022	Rohit Kalkundre, Vivekanand Sahu, Yukti Bandi, Tushar Sawant	Machine Learning based Automated Product Billing and Inventory	As pandemic restrictions ease, people are returning to physical stores for groceries due to delivery time constraints. To manage crowds efficiently and uphold safety protocols, optimizing shopping time is crucial. Traditional checkout queues in retail stores are time-consuming and stressful for both customers and staff. This project proposes a solution: a smart shopping cart equipped with billing and scanning capabilities. By generating bills as customers shop, it saves time, reduces store space dedicated to billing counters, and eliminates the need for additional staff.



# Literature Survey

Sr No.	Year	Authors	Name	Content
3.	March 2020	Abdulqader Firoz, Gayashini Ratnayaka	ShopLister – A Grocery List Management Application	This paper tackles the neglected yet essential task of grocery shopping by proposing 'Shop-Lister', a mobile app designed to address inefficiencies in list management. By harnessing smartphone technology, the app enables users to create, manage, and optimize grocery lists, while also offering features such as finding nearby supermarkets, item recommendations, and augmented reality for in-store navigation. This solution aims to streamline shopping, improving lifestyle and simplifying list management.





# Literature Survey

Sr No.	Year	Authors	Name	Content
4.	December 2022	Atik Febriani, Bertha Maya Sopha, Muhammad Arif Wibisono	Enablers and Barriers of Omnichannel in Traditional Grocery Retailers	This paper delves into advancements opportunities for traditional grocery retailers to enhance their market share and competitiveness via omnichannel strategies. While its potential is recognized, widespread adoption is currently constrained. Through a literature review, key enablers such as customer-centric approaches and technological developments are identified, alongside barriers like resource limitations and significant investments. The paper also offers a framework for implementing omnichannel strategies in traditional grocery stores.

# Proposed System

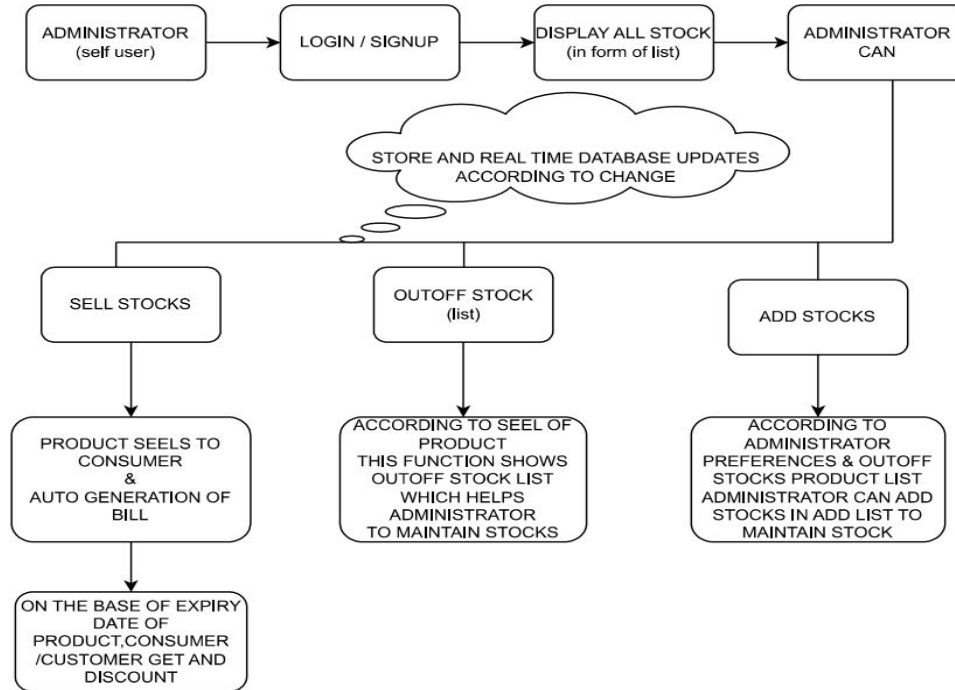


Fig. 1: Proposed System

# Proposed Design

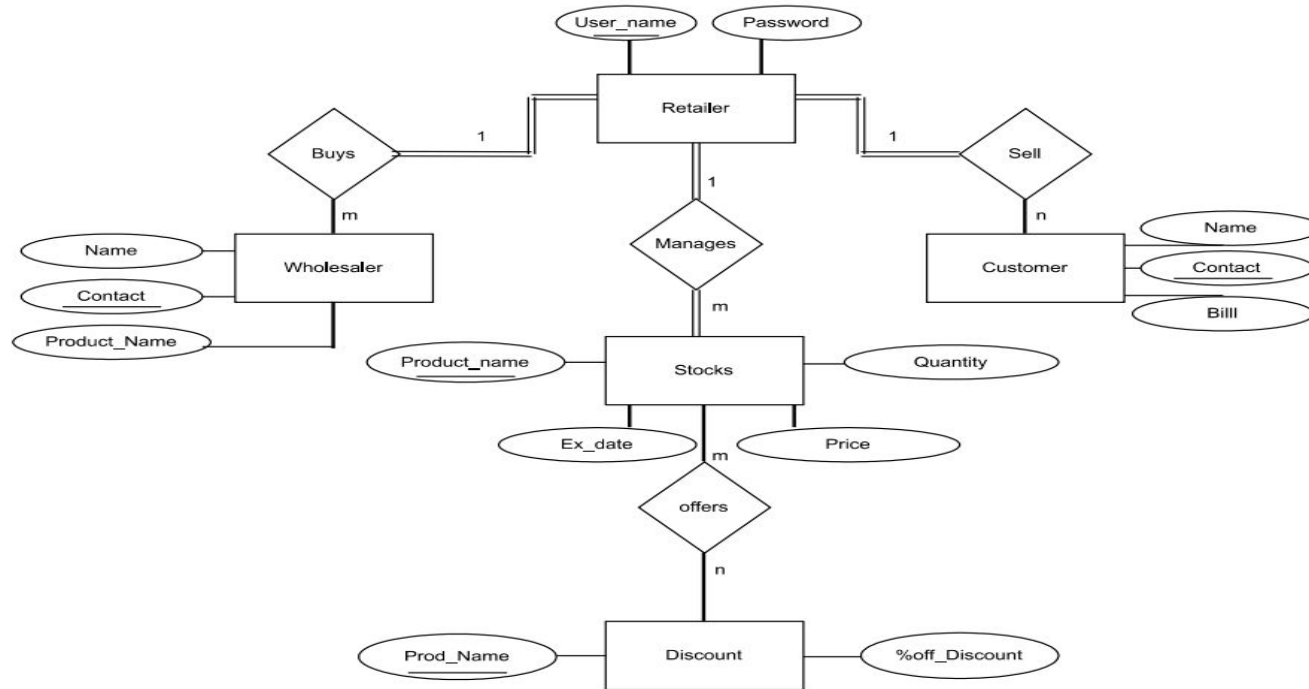


Fig. 2: ER Diagram

# Proposed Design

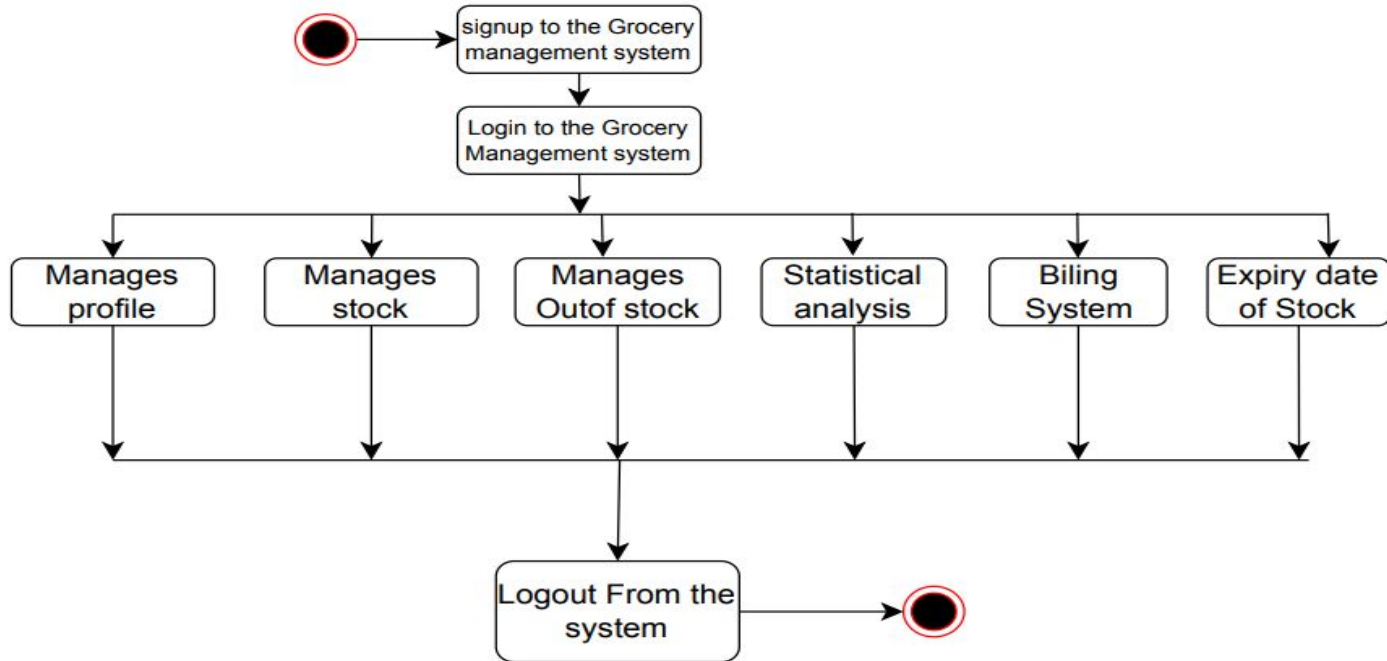


Fig. 3: Activity Diagram

# Proposed Design

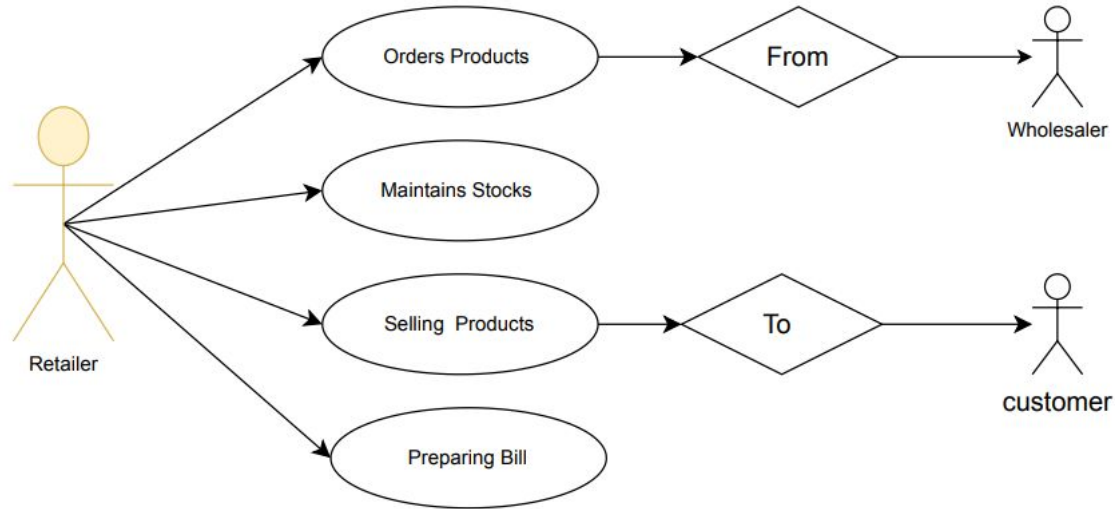
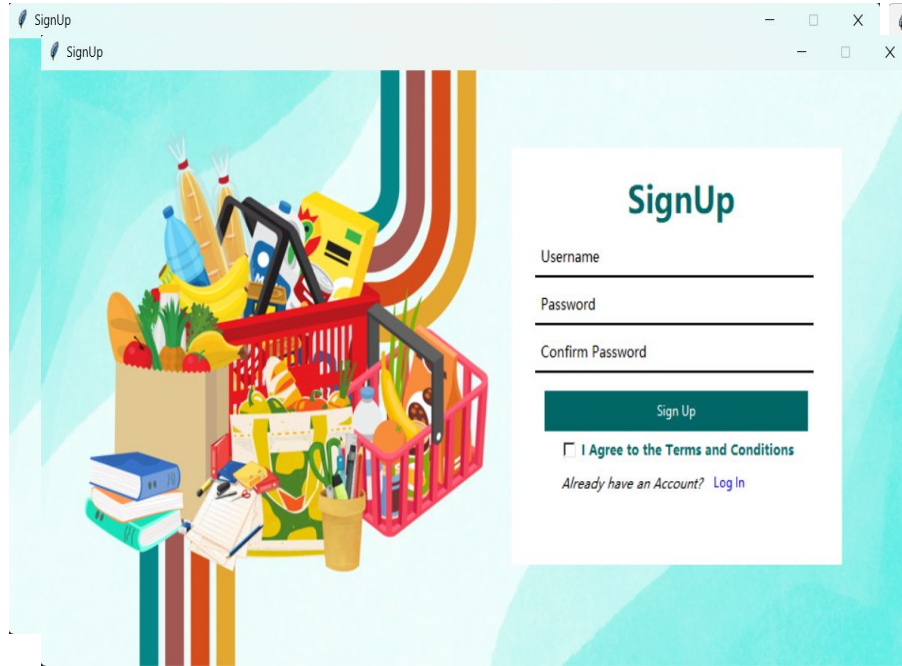


Fig. 4: Use Case Diagram

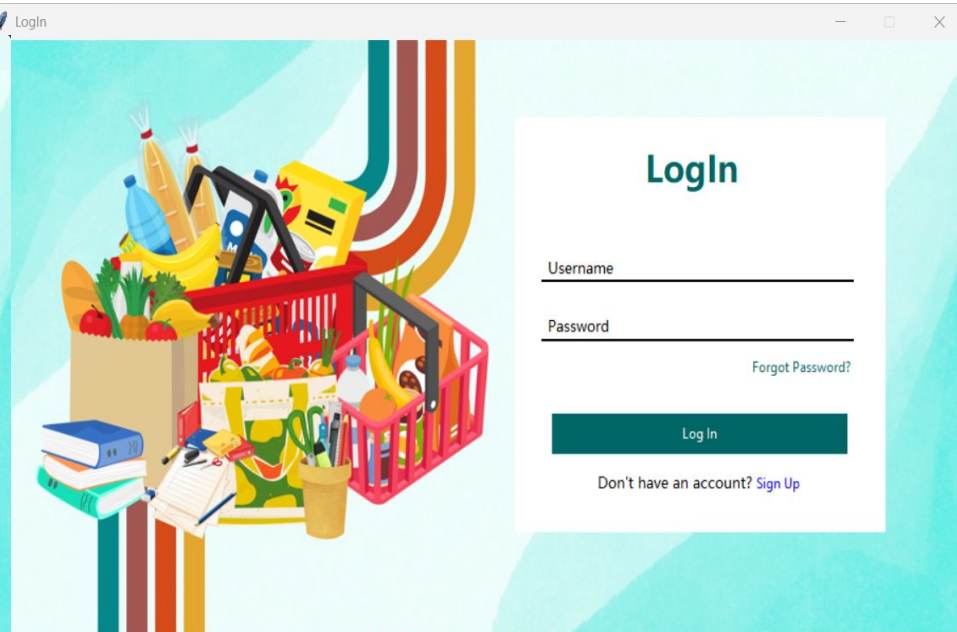


# Implementation



The screenshot shows a web browser window with the title 'SignUp'. The page features a colorful illustration of a shopping basket filled with groceries and school supplies on the left. The main content area is a white box with the heading 'SignUp' in a large, bold, teal font. Below the heading are three input fields for 'Username', 'Password', and 'Confirm Password'. A teal 'Sign Up' button is positioned below these fields. At the bottom of the white box, there is a checkbox labeled 'I Agree to the Terms and Conditions' and a link 'Already have an Account? Log In'.

Fig. 5: Sign up Page



The screenshot shows a web browser window with the title 'Login'. The page features the same colorful illustration of a shopping basket filled with groceries and school supplies on the left. The main content area is a white box with the heading 'Login' in a large, bold, teal font. Below the heading are two input fields for 'Username' and 'Password'. A teal 'Log In' button is positioned below these fields. To the right of the 'Password' field is a link 'Forgot Password?'. At the bottom of the white box, there is a link 'Don't have an account? Sign Up'.

Fig. 6: Login Page

# Implementation

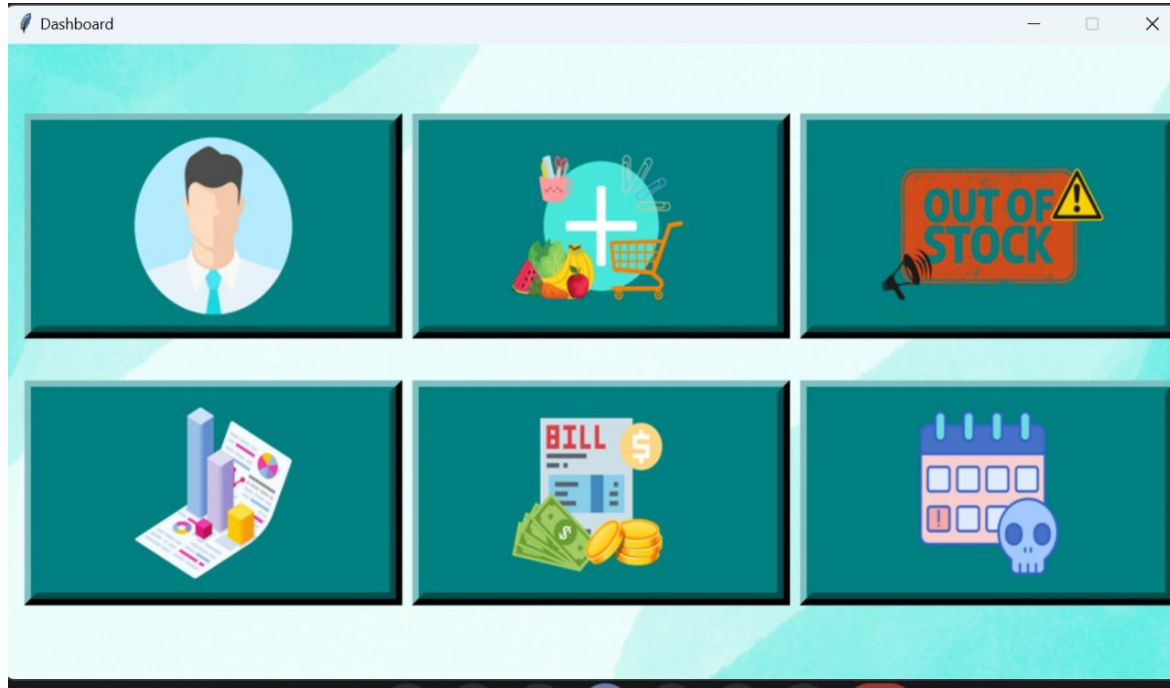


Fig.7: Dashboard

# Implementation

Add

PRODUCT	WHOLESELLER N.	WHOLESELLER C	COST PRICE	SELLING PRK	QUANTI	COST PRICE	SELLING PRK	DISCOU	EXPIRY DATE
Nestle Maggie	Kavita More	+91 9767658398	11.0	15.0	60	660.0	900.0	None	2029-02-16
Sunfeast marie bi	Yash Naikwadi	+91 9021529450	10.0	20.0	70	700.0	1400.0	None	2026-03-03

PRODUCT NAME

Cost price  Quantity

Wholeseller's contact  Wholeseller's name

Expiry date  DATE  Selling price

ADD

Fig.8: Add Page





# Implementation

Profile

## Profile

Name	<input type="text" value="Name"/>
Shop Name	<input type="text" value="ShopName"/>
Address	<input type="text" value="Address"/>
Contact	<input type="text" value="Contact"/>
Email	<input type="text" value="Email"/>

Fig.9: Profile Page



# Implementation

BILLING SECTION

SEARCH

BACK TO DASHBOARD

PRODUCT	SELLING PRICE	QUANTITY	SELLING PRICE	DISCOUNT	EXPIRY DATE
Amul Butter	50.0	90	4500.0	0	2024-04-05
Amul Cheese Slices	60.0	80	4800.0	0	2024-04-11
Bingo Mad Angles	25.0	150	3750.0	0	2024-04-21
Britannia Good Day l	25.0	200	5000.0	0	2024-04-12
Britannia Marie Gold	9.0	150	1350.0	0	2024-03-10
Cadbury Bournvita	150.0	70	10500.0	0	2024-04-10
Cadbury Dairy Milk	35.0	120	4200.0	0	2024-04-05
Cadbury Gems	6.0	200	1200.0	0	2024-08-23
Dabur Chyawanpras	150.0	60	9000.0	0	2024-04-16
Dettol Antiseptic Liq	60.0	150	9000.0	0	2024-09-28

PRODUCT	SELLING PRICE	QUANTITY	DISCOUNT
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Name of product:

Quantity:

Selling price:

Total amount:

Expiry date:

ADD

CLEAR

Name of customer:

Customer contact:

UPDATE

DELETE

PRINT

SELL

Fig.10: Selling Page

# Implementation

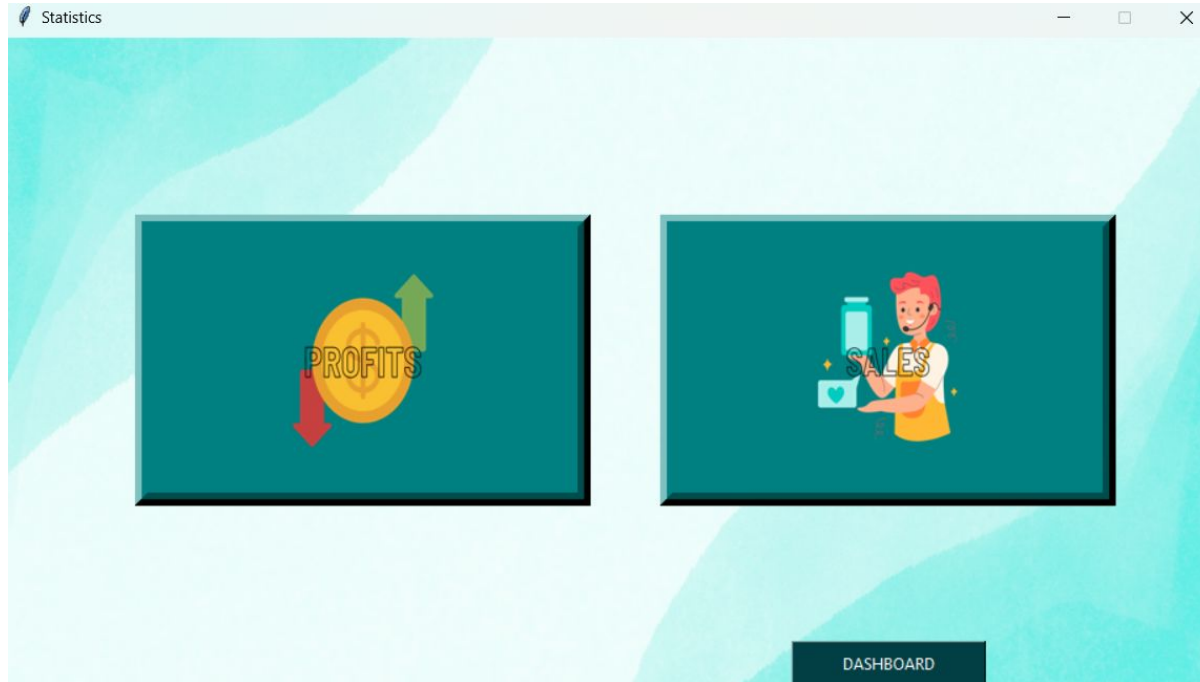


Fig.11: Statistics Page



# Conclusion

- The implementation of a Grocery Management System has successfully addressed the critical challenges associated with automation in record-keeping, billing processes, and stock management.
- The project has achieved its objectives by introducing innovative solutions that streamline operations, enhance efficiency, and provide a more seamless experience for both customers and store management.
- The shift from paper-based to digital documentation has not only improved accessibility but also contributed to environmental sustainability.
- The Grocery Management System project has revolutionized the way the grocery store operates, leveraging automation to overcome challenges associated with record-keeping, billing processes, and stock management.



# References

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