

# **SUPER STORE SALES MANANAGEMENT SYSTEM**

Submitted in partial fulfillment of the requirements for the  
award of  
Bachelor of Engineering degree in Computer Science and Engineering

By

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**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING**

**SCHOOL OF COMPUTING**

# **SATHYABAMA**

**INSTITUTE OF SCIENCE AND TECHNOLOGY  
(DEEMED TO BE UNIVERSITY)**

**Accredited with Grade "A" by NAAC | 12B Status by UGC | Approved by AICTE  
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## **DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING**

### **BONAFIDE CERTIFICATE**

This is to certify that this Project Report is the bonafide work of **TamilSelvan J (Reg.No - 39111017)** and **Valliappan L (Reg.No - 39111054)** who carried out the Project Phase-2 entitled “**SUPER STORE SALES MANAGEMENT SYSTEM**” under my supervision from January 2023 to April 2023.

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**Submitted for Viva voce Examination held on 20.04.2023**

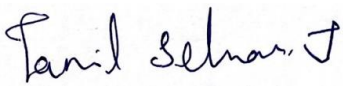
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## DECLARATION

I, **Tamil Selvan J (Reg.No - 39111017)**, hereby declare that the Project Phase-2 Report entitled “**SUPER STORE SALES MANAGEMENT SYSTEM**” done by me under the guidance of **Dr. M. SELVI, M.TECH., Ph.D.**, is submitted in partial fulfillment of the requirements for the award of Bachelor of Engineering degree in **Computer Science and Engineering**.

**DATE: 20.04.2023**  
**PLACE: Chennai**

  
**SIGNATURE OF THE CANDIDATE**

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## **ABSTRACT**

This supermarket management system has realized the transmission and control of large goods, so as to facilitate the management and decision of sales, and reduce a big burden for supermarkets and supermarket managers. It also can help to improve the work efficiency of supermarket. Its requirements is to provide the basic information maintenance function of employees, attainment control, products and bills of a shop so that manager and owner of the shop can through the function to add, delete, and modify the basic information. The system is categorized into 3 different logins owner, manager and employee. The employee login can only perform billing operation. In manager login there is a various other operations are performed like attainment control, manage employee, manage products, bill, sales and order status of a product of a particular shop logged correspondingly. In owner login they can perform various operations like finding a new partner for a business, finding the best deal for a product need to be businesssed and requested, where in inbox they can ,take decision for a product to sell or not and act as a finding a demand product and alert the shop keeper about the sales of the product and requested product status is communicated to the buyer along with all these operations this login can do all opertions of manager and employee logins. Supermarket management system is very convenient for manage, input, output, and find the data so as to make the messy supermarket data to specific, visualizations, rationalization. In the aspect of software, the supermarket management system using MEAN stack principle (mongoDB, express js, Angular js, node js) and the background database is mongoDB. In the aspect of software, various configurations in computer including input and output capacity, internal memory and external memory capacity can meet the requirements of users.

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## LIST OF ABBREVIATIONS

S.No	ABBREVIATION	EXPANSION
1	API	Application Programming Interface
2	BI	Business Intelligence
3	B2B	Business to Business
4	B2C	Business to Customer
5	CFO	Chief of Financial Officer
6	CMO	Chief Marketing Officer
7	E - COMMERCE	Electronic Commerce
8	ETL	Extract , Transform , Load
9	PDI	Pentaho Data Integration
10	SMEs	Small and Medium Sized Enterprises
11	SMTS	Sales Management System
12	SOS	System Obligation Specification
13	SSPL	Server Side Public Licence



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# **CHAPTER 1**

## **INTRODUCTION**

The swift growth of modern science and technology has resulted in the widespread use of computer technology. Numerous industries now depend on it as a crucial tool, particularly those that support internet technology and the rise of the information superhighway. As a result, the IT industry feels increased pressure to draw attention to its unique competitive advantages. In the digital age, there is a huge amount of data that may be processed and delivered, thus maintaining the creation and usage of the database is crucial.

It is crucial because, on the domestic market, certain small and medium-sized supermarkets fall short of big and medium-sized supermarkets in terms of information processing and storage. In order to respond to market competition, efficient handling and management procedures are required, hence it is critical to speed up the supermarket's computerization process. Small and medium sized firms have a considerable impact on the growth of the Chinese economy. As technology advances, sized businesses are becoming easier to utilise. Due to the market economy's rapid expansion and fierce rivalry, the grocery business is required to employ computers to handle inventory, sales, and a few other tasks.

Their primary activity as small- and medium-sized hold several positions with low-quality skills. Therefore, a system must not only have flawless assistance and check functions but also be simple to use, brief, and clear. supermarkets is product sales. Nonetheless, there are still many questions regarding how the system operates. All sales orders require a lot of effort, are prone to error, and are artificially filled. Inventory is a made-up type of recordkeeping that is impossible to pinpoint the actual location of the inventory.

Measuring the sales success of each company membership and each wonderful transaction normally takes a lot of time and effort. We will get ready for computerised

administration at the business in order to allay the aforementioned worries and increase the financial benefit.

### **General Situation of small and medium sized supermarket**

The supermarket's main issue right now is finding ways to cut costs in light of the increasingly ferocious competition. For typical supermarkets, the management of raw material sources, sales and inventory, staff information, and administration affects the supermarket's long-term viability. In general, there is a huge necessity for an inventory, sales, and procurement system.

The procurement, sales, and warehouse departments of the supermarket successfully manage and monitor all facets of these activities. By applying procurement, sales, and inventory management systems, it is feasible to successfully decrease blind procurement, cut more individuals are becoming computer proficient and our nation's small and medium-sized supermarkets are managed quite differently from those of the large supermarket both locally and internationally. We first need to understand some of the management features of small and medium-sized supermarkets in order to develop management software that is suitable for them.

Compared to large supermarkets and chain supermarkets, which place a greater focus on being brief and practical, small and medium-sized supermarkets have different management system requirements.

### **Features of small and medium sized supermarket**

- The size is relatively small and may not have its warehouse, and the inventory backlog is less.
- The number of employees is low, and one person may hold several positions with low-quality skills. Therefore, a system must not only have flawless assistance and check functions but also be simple to use, brief, and clear.

## CHAPTER 2

### LITERATURE SURVEY

#### 2.1 INFERENCE FROM LITERATURE SURVEY

**Bong Jing (2021):** Nowadays, online shopping has become essential due to Covid 19 restrictions. Small businesses are also proliferating to grab this opportunity of increasing their sales through online platforms. Although many have successfully implemented online businesses on multiple platforms, such as Instagram, Facebook, Lazada, and Shopee, many could not sustain their businesses as they do not have adequate tools to assist them with record keeping. Often, small businesses failed to keep track of their sales and revenue, which caused them to struggle with the growth of their business. Thus, this project aims to provide a tool for this target group by developing the Sales Management System (SMTS). SMTS is a web-based system that allows users to record information related to sales, products and suppliers. It can also generate sales reports. Due to a drop in revenue, small businesses switch from traditional marketing to social media . At the same time, customers are also shifted from brick-and-mortar stores to e-commerce approaches due to the movement restrictions. More people are interested in digital grocery stores, and thus more are trying to take advantage of their benefits . Therefore, most of the businesses transformed to be online businesses. Among online platforms used by small businesses are Instagram, Facebook, Lazada, and Shopee. Some are using more than one channel to reach out to their customers. Although many of these businesses are gaining revenue in the short term, the issues on business sustainability remain a problem. Most of these small businesses rely on the social media platform, which has limited functions in managing sales information; they need additional functional tools to manage their sales records.

**Tejal Tandel (2020):** The retail sector has widely adapted different inventory management applications and some retail chains even employ prediction software to analyze future sales. However, a lot of day-to-day shopping in India happens through local shops. The owners of such mom-and-pop shops do not necessarily have the capital to invest in proprietary applications for setting up an inventory management system. Needless to say that same is the case for any sales prediction software. As a result, many of the shopkeepers end up hoarding a lot of irrelevant and nonprofitable products that lead to financial losses. A very cost effective and accessible solution for this problem is a mobile application that provides all the features of a point-of-sale system as well as gives future sales insights. It will enable shopkeepers to manage their current product purchases and invoicing. The predictive sales analysis will help them to modify their investments on products and supplies thereby ensuring maximum profits. Mobile phones have become a vital part of day-to-day life to day. The e-commerce trend has taken businesses online and has proved to be beneficial for them. In a basic e-commerce system, the merchants put their products on display over the website and the customers searching for that product can place an order using the same website. Payment portals do the transactions, and then a delivery service delivers the products to the designated customer. E-commerce websites hold the potential to showcase a wide variety of products at once and therefore, are equally convenient to buyers and sellers. The sellers can generate a report of their sales or product demands either manually or through a data mining software. A major contributing factor for local shopkeepers to not take their businesses online is the lack of monetary funds and resources. It may seem a personal drawback from afar but if we aim at achieving social development, this problem needs to be addressed, and a viable solution must be found. Accessing a point-of-sale system via their own mobile phones from anywhere at anytime is definitely one of the most feasible solution to this problem. A seller can manually list down all the products and investment and tally it with to total sales to produce a profit report but that is not to say tedious and monotonous. Through data mining techniques the same results can be achieved more quickly and one can even get a graphical representation for better understand makes the process more engaging. Traditionally to perform any product based analysis, different software is needed to be purchased. A mobile app with an amalgamation of both these trends will make the whole process more convenient.

**Wenhui Shan (2020):** This article analyzes the key points of refined sales management under big data. The main points of sales management include how to establish a sales management organization, how to improve the sales management information system, how to improve the evaluation management system, and how to strengthen internal sales control. Combining the key points of data analysis under big data, the author studies the establishment of data warehouse, data cleaning and mining, the establishment of data prediction models, and the arrangement of model analysis results. The purpose of this article is to help people give full play to the advantages of big data technology applications and promote the healthy development of the enterprise economy. In the context of the rapid improvement of social and economic levels, the number of products produced by enterprises is increasing, and the frequency of product updates is also rapidly increasing. However, there are big differences in product quality at the application stage. In the era of diversification, it is difficult to achieve sales growth by relying solely on technological innovation. After the transformation of the enterprise, the application advantages of big data technology are used to carry out refined management of the entire sales link. At the same time, doing a good job of data analysis and forecasting can not only reduce the cost of product sales, but also increase product sales and accelerate the economic development of enterprises.

**Ricky Akbar (2020):** Data Management is one of the crucial processes carried out at XYZ Store to get information about the sale of products. In carrying out its operational activities, XYZ Store uses the Smile Invent application to manage data on products sales transactions. Still, this application has not been able to assist managers in producing the required reports. Therefore, one way to overcome this problem is by implementing the Business Intelligence (BI) application at the XYZ Store by using Interactive Dashboard Visualization. In implementing the BI application, the BI Roadmap is used as a basis for conducting research starting from the identification of problems to be selected. After that, the planning phase is carried out by evaluating the infrastructure and planning projects. Then the analysis phase focuses on carrying out a detailed analysis of business problems and opportunities from BI implementation. Next is the design phase by carrying out the data warehouse design process and ETL using the Pentaho Data Integration (PDI). Then the implementation phase is carried out, namely the selection and use of BI application tools to perform Data Visualization.

It is hoped that this research can produce reports in the form of Interactive Dashboard Visualization that can be used by store managers to make better decisions.

In running a business, data management is a necessary process that must be carried out by companies. With proper data management, users can get added value, such as valid information to support the decision-making process that can increase effectiveness and efficiency in operations. XYZ Store is a store that is engaged in the sale of daily necessities. This store has used the Smile Invent application to process data management for products, employees, and transactions that occur every day, but this application has not been able to help managers make better decisions because the reports generated do not match their needs. The Smile Invent application manages more than 20,000 item data and approximately 563,974 sales transactions over the past three years. One way that can be done to handle this massive data is by implementing a Business Intelligence (BI) application.

BI is a tool for amplifying, analyzing, and visualizing big data to help management make decisions. The main focus of this BI system is on reporting, data retrieval (querying), and data analysis contained in the company's data warehouse. BI consists of 5 components, namely Data Source, ETL (Extract, Transform, Load), Data Warehouse, Interactive Dashboard, and Reports. BI's goal is to help decisionmakers get the right information and make the right decisions to manage the business. BI also has several advantages in its use, including first, eliminating jobs based on assumptions because BI can provide more accurate historical data. Second, it helps identify business opportunities by making trends in market conditions. Third, it helps in understanding consumer behavior. Fourth, it helps create realistic goals. Fifth, help identify opportunities for cross selling and up-selling. And the sixth increases efficiency.

Of the various advantages and benefits of implementing BI, of course, it can help companies in the data management process to produce better data visualization and reporting, which is useful for decision making and improving services for the company's business. In addition, implementing BI there are also various challenges, among others; limited knowledge on how BI analytics can support production goals, limited interest from executives and owners on how to use BI as a decision support and lack of skills to use BI analytics in general.



**Damar Aji Irawan (2020):** This research aims to explore how e-commerce affects a brick and mortar department store and how a brick and mortar department store cope in digital era. This study is qualitative research with single case study approach at one of national department store in Indonesia. The data was collected using semi-structured interview. Five participants were willing to take part in this study anonymously. The participants' job titles are chief of financial officer (CFO), company's director, chief marketing officer (CMO), head of marketing and customer's loyalty, and regional store manager. To elaborate the interview data, 160 open-ended questionnaires were distributed to the department store customers. The data analysis techniques used in this research are pattern matching and linking the data to propositions. The results of this study indicate that E-commerce has small effect on a bricks and mortar department store and the company would combine offline stores and online technology. The theoretical implication of this research is confirming previous theory and applying the brick and click framework theory into practice. The managerial implication of this study is that a brick and mortar department store could combine offline stores and online technology if the synergy between channels is achieved. The value of this study is providing insight on how e-commerce affects a brick and mortar department store and how a brick and mortar department store turning into brick and click department store in order to cope in digital era.

In the United States of America alone for the past fifteen until twenty years some retails such as department stores, book and music stores have experiencing large decline in sales. The explanation on why such phenomenon occurs is that the retail sales would go online. The online trading activity is called electronic commerce (e-commerce). E-commerce is categorized into two: business to business ecommerce (B2B) and business to consumer e-commerce (B2C). Increased market access, data, and decreased operating and procurement cost are the benefit of e-commerce for retailers. While for customers, the advantages of using e-commerce are product customization, cheaper price, extended information on goods and services, increased choice of products, and comfort shopping experience. The growth of e-commerce is not only affecting the small and medium sized enterprises (SMEs) but also large firms globally. However, according to statistics Indonesia in 2019, only 15.08 percent of SMEs and large firms do e-commerce.

Despite the small number of companies that conduct e-commerce in Indonesia, the market shows huge potential. There are 171.17 million people that use Internet in Indonesia. Even so the main reason of using internet are to communicate with each other and only 9 percent stated that online shopping is the main reason to go online. Fashion and books are top two items that people bought online and the frequency of shopping online is random. The company XYZ in this research is a national department store that focuses on fashions, shoes, bags, household appliances, sporting equipment, beauty tools, and kids' stores. The name of the company is hidden in this research due to confidentiality agreement. The company agreed to participate in this research if their name and informants are not mentioned in the paper. The company has more than 100 physical stores across Indonesia. The company face enormous amount of pressures as its competitors have closed down all or some of the outlets in the past few years because of declining sales. One of the reasons why the retail sales decrease is the growth of internet networks. The internet shifts the customer behaviour from offline to online purchase.

Previous research on the brick and mortar retails showed that there are two types of customer based on shopping modes: repetitive and fun shoppers but in the e-commerce the customer could not be categorized into two as the virtual store always open 24 hours. E-commerce also affects retailer's product sourcing, stockholdings, inventory, store merchandizing, marketing effort, customer selection, picking, and distribution of goods by or to the customer. operating and procurement cost are the benefit of ecommerce for retailers. While for customers, the advantages of using e-commerce are product customization, cheaper price, extended information on goods and services, increased choice of products, and comfort shopping experience.

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**Pavel S. Sharakhin (2021):** The goal of the article is to investigate the influence of insourcing and outsourcing of digital logistics solutions to efficiency of a firm operating in Supply Chain 4.0 environment. Digital logistics covers digital technologies in both manufacturing planning and supply chain. Supply Chain 4.0 is an application of the Internet of Things to improve productivity and customer satisfaction. This requires the introduction of advanced robotics and advanced big data analytics in supply chain management.

It is argued that depending of various reasons a firm could either develop digital logistic solutions internally or outsource it. Multicase analysis as a main research method gave an opportunity to divide main alternatives of decisions and factors justifying them. Managerial application of the paper offers trends for IT implementation and perspective business solutions based on them. Specific way to measure efficiency addressed for both insourcing and outsourcing of digital logistics solutions.

Speaking about information and communication systems in economics and management, one should admit a trend to sharp increase of number of such digital solutions in transportation and logistics industry. According to the Flexera 2021 State of Tech Spend Report, digital transformation is what fostering us to enhance our product or service offered at the market. To reach this, IT must work together with business and participate in strategic decisions and activities early in the planning process. In key areas we see change of IT strategic involvement in business – from just implementer of chosen solutions to an equal partner actively involved in strategic planning and engaging with the business in the early stages of this planning.

To understand whether it is worth developing or outsourcing digital logistics, it is important to understand the concept of digital logistics, which has become quite widely used in recent years. So, historically, it is customary to divide logistics into three stages of development. The first stage consisted in the competent interaction of warehousing and transportation, at the second stage competent production planning began to be connected. We will be interested in the last, third stage, which includes control of the entire process of creating goods, from raw materials to the final consumer, but this does not mean that the improvement of logistics has reached its maximum and there can be no further development. Now we can talk about the formation of the fourth stage of logistics development - digital logistics. The introduction of computer technology will help to analyze the level of demand for goods faster, moreover, planning and forecasting will become more flexible, which will allow companies to quickly and timely respond to changes in the external environment. These improvements have tremendous potential to increase business efficiency and reduce costs.

## 2.2 OPEN PROBLEMS IN EXISTING SYSTEM

Being a Computer Technology student we had to go into the business department to learn some basic sales and supermarket management topics to increase our intellectual understanding on the project at hand it was really tasking.

Building a standard Supermarket management system was not an easy task looking at the problems of existing manual system

**The factors for these difficulties are:**

**1. Time Consumption:** Manual systems are time consuming, as the business owner must keep track of Supermarket sales on a daily basis, while updating the system manually at the end of the day.

**2. Poor Communication:** A manual Supermarket system requires employees and managers to write down each time an item is removed from the Supermarket. If one employee forgets to mention that the last coffee product has been removed from the Supermarket, a manager expects the item to still be available for a customer during a sale. Compared with a technical Supermarket system, a manual Supermarket system does not help the communication in the workplace.

**3. Physical Counts:** A manual Supermarket system does not provide any number, as all numbers from the Supermarket are gained through physical Supermarket counts. One of the difficulties of running a manual Supermarket system is that physical Supermarket counts must be performed frequently to control the items in the Supermarket. This is time consuming and can cost the business money, if employees must come in to help out outside of business hours.

**4. Daily Purchases:** Keeping track of daily purchases is another difficult controlling measure with manual Supermarket systems. A manual Supermarket system requires the employees to write down the items sold during a single work day. This can be a difficult task, as one employee may lose the list of items sold or another may forget to write down a sale.

**5. Ordering Supplies:** A manual Supermarket system does not update at the end of the day with updated Supermarket

## CHAPTER 3

### REQUIREMENT ANALYSIS

#### 3.1 FEASIBILITY STUDIES / RISK ANALYSIS OF THE PROJECT

After responsibility the plan superstore sales management system, study and investigating all the current or compulsory functionalities of the organization, the next job is to do the viability study for the project. All plans feasible – given limitless resources and immeasurable time. All the conceivable ways to deliver a solution to the given problem are find by feasibility study. This planned answer would please all the worker need and must be flexible plenty so that future vicissitudes can be simply done founded on the future imminent supplies.

##### **A. Economic Feasibility**

This is very important aspects to be considered while developing a project. We decided the technology for our project founded on smallest conceivable charge influence.

- Entirely tools and system fee obligates to be done by developer.
- Completely we have projected that the benefits

The creator is going to receive from the planned system will surely dazed the initial prices and the later on organizational cost for system.

##### **B. Technical Feasibility**

- The technical feasibility education contains study of function, presentation and restraints that may move the ability to achieve a suitable system.
- For this possibility study, we deliberate whole functionality to be in the organization, as labelled in the System Obligation Specification (SOS), and checked if the whole thing was possible using the different types of frontend and backend podiums.

##### **C. Operational Feasibility**

This planned system is fully GUI grounded that is very user responsive and all inputs to be occupied all self-descriptive even to a layman. In addition, a proper exercise has been conducted to knowing core of the system to the operators so that they feel relaxed

with new system initial. As far our study is apprehension the users are relaxed and happy as the structure has cut down their tons and doing.

## **3.2 SOFTWARE REQUIREMENTS SPECIFICATION DOCUMENT**

- Windows 10 or above
- Node JS
- Angular CLI
- Database (mongodb)

### **3.2.1 Windows 10 or above**

Windows 10 is a Microsoft operating system for personal computers, tablets, embedded devices and internet of things devices. Microsoft released Windows 10 in July 2015 as a follow-up to Windows 8. The company has said it will update Windows 10 in perpetuity rather than release a new, full-fledged operating system as a successor.

### **3.2.2 Node JS**

As an asynchronous event-driven JavaScript runtime, Node.js is designed to build scalable network applications. In the following "hello world" example, many connections can be handled concurrently. Upon each connection, the callback is fired, but if there is no work to be done, Node.js will sleep.

This is in contrast to today's more common concurrency model, in which OS threads are employed. Thread-based networking is relatively inefficient and very difficult to use. Furthermore, users of Node.js are free from worries of dead-locking the process, since there are no locks. Almost no function in Node.js directly performs I/O, so the process never blocks except when the I/O is performed using synchronous methods of Node.js standard library. Because nothing blocks, scalable systems are very reasonable to developed in Node.js.

If some of this language is unfamiliar, there is a full article on Blocking vs. Non-Blocking.

Node.js is similar in design to, and influenced by, systems like Ruby's Event Machine and Python's Twisted. Node.js takes the event model a bit further. It presents an event loop as a runtime construct instead of as a library. In other systems, there is always a blocking call to start the event-loop. Typically, behavior is defined through callbacks at the beginning of a script, and at the end a server is started through a blocking call like **EventMachine::run()**. In Node.js, there is no such start-the-event-loop call. Node.js simply enters the event loop after executing the input script. Node.js exits the event loop when there are no more callbacks to perform. This behavior is like browser JavaScript — the event loop is hidden from the user.

HTTP is a first-class citizen in Node.js, designed with streaming and low latency in mind. This makes Node.js well suited for the foundation of a web library or framework. Node.js being designed without threads doesn't mean you can't take advantage of multiple cores in your environment. Child processes can be spawned by using our **child\_process.fork()** API, and are designed to be easy to communicate with. Built upon that same interface is the **cluster** module, which allows you to share sockets between processes to enable load balancing over your cores.

### 3.2.3 Angular CLI

This topic can help you understand Angular: what Angular is, what advantages it provides, and what you might expect as you start to build your applications.

Angular is a development platform, built on TypeScript. As a platform, Angular includes:

- A component-based framework for building scalable web applications
- A collection of well-integrated libraries that cover a wide variety of features, including routing, forms management, client-server communication, and more

A suite of developer tools to help you develop, build, test, and update your code. With Angular, you're taking advantage of a platform that can scale from single-developer projects to enterprise-level applications. Angular is designed to make updating as straightforward as possible, so take advantage of the latest developments with a



minimum of effort. Best of all, the Angular ecosystem consists of a diverse group of over 1.7 million developers, library authors, and content creators.

This section explains the core ideas behind Angular. Understanding these ideas can help you design and build your applications more effectively.

## ***Components***

Components are the building blocks that compose an application. A component includes a TypeScript class with a **@Component()** decorator, an HTML template, and styles. The **@Component()** decorator specifies the following Angular-specific information. A CSS selector that defines how the component is used in a template. HTML elements in your template that match this selector become instances of the component. An HTML template that instructs Angular how to render the component. An optional set of CSS styles that define the appearance of the template's HTML elements.

## ***Templates***

Every component has an HTML template that declares how that component renders. You define this template either inline or by file path. Angular extends HTML with additional syntax that lets you insert dynamic values from your component. Angular automatically updates the rendered DOM when your component's state changes. One application of this feature is inserting dynamic text, as shown in the following example.

```
npm
C:\final year projects>ng version
Node.js version v19.0.0 detected.
Odd numbered Node.js versions will not enter LTS status and should not be used for production. For more information, please see https://nodejs.org/en/about/releases/.

Angular CLI
Angular CLI: 14.2.3
Node: 19.0.0 (Unsupported)
Package Manager: npm 8.19.2
OS: win32 x64

Angular:
..
-----
Package                                Version
-----
angular-devkit/architect               0.1402.3 (cli-only)
angular-devkit/core                    14.2.3 (cli-only)
angular-devkit/schematics              14.2.3 (cli-only)
@schematics/angular                   14.2.3 (cli-only)

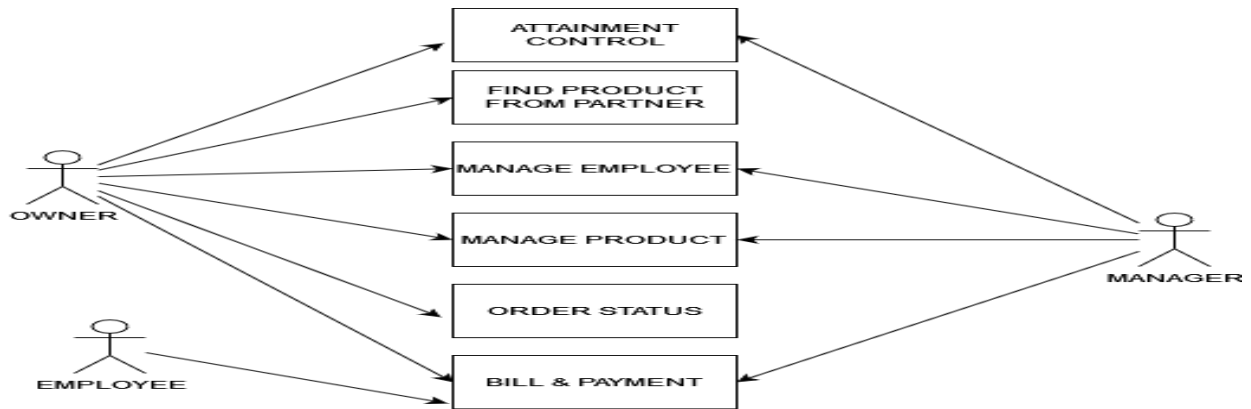
Warning: The current version of Node (19.0.0) is not supported by Angular.
```

**Fig 3.1: Angular CLI**

### 3.2.4 Database (mongodb)

MongoDB is a source-available cross-platform document-oriented database program. Classified as a NoSQL database program, MongoDB uses JSON-like documents with optional schemas. MongoDB is developed by MongoDB Inc. and licensed under the Server Side Public License (SSPL) which is deemed non-free by several distributions.

### 3.3 SYSTEM USE CASE



***Fig 3.2: Use Case Diagram of Super Store Sales Management System***

Super Store Sales Management System can be used for variety of purposes in business by retailers for gaining huge profits by retail shopkeepers. Here are some use cases of Super Store Sales Management System .

- Attainment Control
- Find Product From Partner
- Find Partner
- Manage Employee
- Manage Product
- Order Status
- Bill & Payment

## **CHAPTER - 4**

### **DESCRIPTION OF PROPOSED SYSTEM**

The Superstore Sales Management System project will be done at the location where sensibly, increase market customers go to get their daily goods and pay for them. Therefore, it is necessary to determine how market sensitivity, and boost the Business and e-commerce.

It provides a common platform for communication of retail shopkeepers, help for taking tactical decisions and management of shop details like employee, product, bills, payment, performance of employee, etc.

It has the following attributes:

- Reduction in processing costs.
- Error reduction.
- Automatic posting.
- Flexibility.
- Ability to satisfy user needs
- Reduction in manpower.
- Improved reporting
- Quicker response time.
- Improves resources use.

Proposed system has these qualities including the qualities of existing system.

The main objective of the project is to make software fast in processing and it should be used for a long time without error and maintenance. Provides a convenient solution of billing pattern and make an easy-to-use environment for users and customers.

- **Automation** – The application automates each and every activity of the manual system and increases its throughput. Thus, the response time of the system is very less and it works very fast.
- **Accuracy** – The application provides the user a quick response with very accurate information regarding the bill calculation and customer detail etc. any details or system in an accurate manner, as when required.
- **User Friendly** – The application Super Store Sales Management System has a very user friendly interface. Thus, the users will find it very easy to work on it. The application provides accuracy along with a pleasant interface. Make the present manual system more interactive, speedy and user friendly.
- **Availability** – All the Billing details, Sales Details, Shop Details, Employee Details, Stock Details of each shop stored permanently in the database admin can see the data, whenever needed.
- **Maintain Cost** – Reduce the cost of maintenance. It is a standalone application so no cost is required to maintain it.

#### 4.1 SELECTED METHODOLOGY OR PROCESS MODEL

The working model of this system has certain rules to access the following features

- **Login:** The administrator can log in with his username and password. They can provide a username or password to other unauthorized users after logging in successfully, manage stock in the shop, add a shop, and view employee performance. And according to Login credentials, access to the site has been provided. The administrator can log in with his username and password. They can provide a username or password to other unauthorized users after logging in successfully, manage stock in the shop, add a shop, and view employee performance.
- **Order:** The goods will process the dealer's order after receiving it over the internet. After it has been saved in the database, a crystal account will be created for billing reasons, and you will get a mail notification. If the purchase was made offline, the bill information will be kept separately in the database.

- **Stock:** The billing person should be aware of the item's availability in the store at the moment of sale and make plans to sell them to the distributor or consumer. And keep the merchandise readily available.
- **Payment:** For the consumer or sales partner, there are options for making payments, including online payments and cash on delivery
- 
- **Shopkeeper / Manager:** Enter your order for the items after checking them all. View the status of your orders, explore freshly added merchandise, and sign up for mail notifications. Additionally, keep up the employee's performance at work.
- **Product:** The authorized shop representative gave the product information at the time of billing, put the items in the basket, and then handled the billing and delivery. Keep track of the product information in a different database. .
- **Shop:** Manage basic details of shops which contain Name, Owner, Address of shop, Gst No, Pan No, etc...
- **Employee:** Maintain the records of the employee and salary will be provided based on work and role.
- **Billing:** Maintain the billing records of the shop and help to generate new bill.
- **Search Product:** Search for a product on the website of your shop which is to be delivered to the customer/sales partner. And add them to the cart and proceed with billing.
- **Search Shop:** The Manager and owner of the shop have the access to find a new partner for developing the business.

## Rules for accessing the platform

- The shop should contain a minimum of 10 employees classified with 3 designations (Owner, Manager, Employee).
- 
- The shop should be located within the specified location.
- The shop should be registered with the government and must have an individual/official PAN Card number and GST number.
- After you contact us and give us the necessary information, one of our staff members will visit the shop in person to verify the provided information and grant you access to use the platform.
- The things that will be sold should be packaged separately and securely, rather than utilizing paper and thread.
- The government and our officials should verify and authorize the Quality of the products before they are marketed.

## 4.2 ARCHITECTURE / OVERALL DESIGN OF PROPOSED SYSTEM

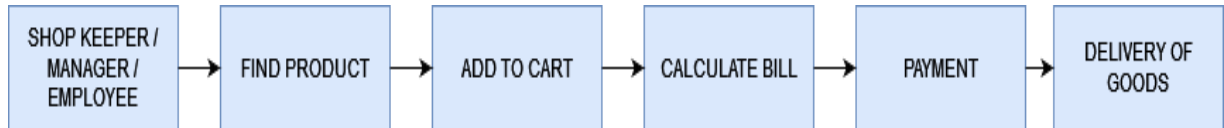


**Fig 4.1: Finding a seller and buying it using online platform**

A shop added in this platform consist of 3 types of employee access owner / manager / employee.

Access of owner has the authority to find a partner for supplying goods as per the needs finding the partner request the order and pay for the goods and then get delivery.

Attainment control of employee can done by owner / manager based on that employee gets their salary and attendance of manager can done by owner based on that manager gets their salary.

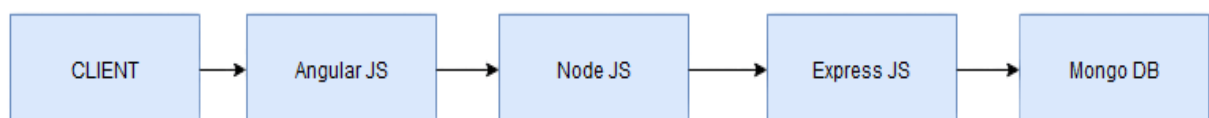


**Fig 4.2: Sales with payment**

With the aid of a shopkeeper, manager, or employee, the billing system locates the product from the database and adds it to the cart. They then compute the bill amount, and payment for the products is made either with cash or through an internet transaction using a bank. The products will be delivered upon receipt of payment.

This Billing and Payment system is common for both online and offline transaction of business. Owner alone can see the total sales data whenever and wherever it is needed for taking strategic decision by without depending on anyone. The data stored in database are secured there will be no chance of error.

The client fills out the form, the information is checked using HTML5 validations, and then a submission button is enabled. The client stores the details in the database after completing all validations. Before storing into data base the validated data has to be processed via Node JS, Express JS and then store at Mongo DB

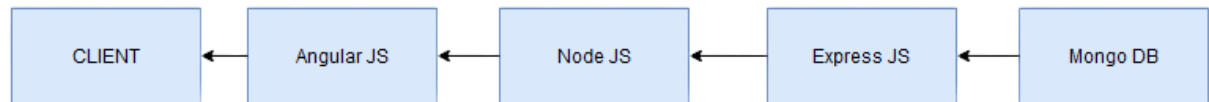


**Fig 4.3: Client has a request to process**

Client has to find the stock of the product in shop so client visit stock management page and the query is processed to get the data. For visiting mamangement page the login must be authenticated and Angular JS make request to the Node JS and



the request is parsed to Express JS which ask the data in a way mongo DB understand.



**Fig 4.4: Database retrieves and returns data based on client-specified need.**

Database fetches the data as per the query provided by the client and then transfer the data to Express JS . Express JS transfer the return request to the Node JS. Angular JS get the requested data from Node JS and display the data to the client for the query provided.

In the attainment management system has been authenticated the person login credentials wheter it is a manager or owner login. If the login is true then the page is routed and by default shows all the employee of the particular shop where the employee is working. And now they can update the appraisal performance of the employee.

Billing system has been implemented with the help of page routing when the user enters into the billing page the page default shows all the product of the particular shop where the employee is working. And now the employee need to find the product and specify the quantity for the product and calculate the sub total cost of the product and find the cummulative total cost and the convey to the customer and proceed with payment. While calculating the cost the product stock has been updated dynamically. It has been done to avoid the separate time and energy consumption on updating the stock and help the shopkeeper to purchase the product and maintain the stock inventory in the fixed level to avoid the trouble from customer end.

### **4.3 DESCRIPTION OF SOFTWARE FOR IMPLEMENTATION AND TESTING PLAN OF THE PROPOSED MODEL / SYSTEM**

#### **4.3.1 System Testing**

Quality assurance is an important step in software engineering. This overlaps with all the phases of development right from the requirement analysis. This quality requirement of the software system must be clearly extracted during the requirement analysis and all the subsequent phases should be made biased to that, the final testing will become trivial and less expensive. There are number of quality parameters like correctness, accuracy, reliability, robustness, efficiency, effectiveness, reusability, maintainability etc.. The state of requirement of each of these parameters will vary depending upon the name and domain of the application. The testing should be done at the end of all development steps. Even though the final testing and verification are inevitable for better life and functionality of the software. The different software testing approaches and methods like white box testing and black box testing. The major phases in testing are design of test plan, setting up test case and test candidate and test procedure, testing and correction. This is a cycle process and the software will circulate through all the steps till it attends the required quality. The testing is carried in the following steps.

#### **4.3.2 Unit testing**

Unit testing focuses verification effort on the smallest unit of software design the module. Using the details design description as a guide, important control paths are tested to uncover errors within boundary of the boundary of the module. The relative complexity of tests and the errors detected as a result is limited by the constrained scope established for unit testing.

Unit testing is normally considered an adjacent to coding steps. After source level code has been developed, reviewed, and verified for correct syntax, unit test case design begins. A review of design information provides guidance for establishing test cases that are likely to uncover error in each case of the categories discussed above. Each test case should be coupled with a set of expected results.

#### **4.3.3 Integration testing**

Integration testing is systematic technique for constructing the program structure while at the same time conducting test to uncover error associated with interfacing .The objective is to take unit tested modules and build a program structure that has been dictated by design.

There is often a tendency to attempt no incremental integration; that is to construct the program using a “big bang “approach. The entire modules are combined in advance. The entire program is tested as whole and chaos usually result! A set of error is encountered. Correction is difficult because the isolation of cause is complicated by the vast expanse of entire program. Once errors are corrected, new ones appear and process continues in a seemingly endless loop.

#### 4.4 PROJECT MANAGEMENT PLAN

PROCESS	TIME
Home Page, About us Page, Login Page, Validation, Authentication	25/10/2022
Add Employee, Add Shop, Add Product connect with Backend.	30/11/2022
Manage Employee, Attainment Control.	02/01/2023
Manage shop, Manage product.	31/01/2023
Online Order Request, Online Order Status, Add To Cart.	26/02/2023
Billing, Manage Bill, Payment	26/03/2023

***Table 4.1: Project Implementation Schedule***

## CHAPTER 5

### IMPLEMENTATION DETAILS

#### 5.1 DEVELOPMENT AND DEPLOYMENT SETUP

The super store sales management system application has been developed using MEAN Stack procedures. MEAN stack refers to the application developed with the combination of MongoDB , Express js, Angular js, Node js. In this procedure MongoDB refer to database. Where the data are stored in document format on cluster and collections which is commonly known as NoSql. In document each field is stored in format of string, number according to the need and type of data.

Following that the next procedure is express js where it is a Node js framework. It mainly handles the API (**Application Programming Interface**) Transaction. Where we can create our own API and define the API role and we can optimize according to our needs. It runs on the server side for handling server side queries and requests.

Upcoming to that we use Angular js. It is a client side javascript framework used for developing single page application and it help to interact with client. It mainly consist of 3 types of files where they are HTML file of a component, CSS file of a component, Typescript file of a component. Here component is an isolated entity that enables reuse and maintainability of the code. It can be considered as a method or function that not only contains the controller logic required for a UI element to function but also the corresponding HTML tags to generate the element. Html file of the component describes the layout of the component when it is visible on screen. It is responsible for all html tags. Similarly Css file of the component describes about the style of the particular componet when it is vissible on screen and it is responsible. Now the important part is Typescript where it handles all the function and responsible for that. Mainly it is consider as a first step for data transfer and it can perform some validation return some response to the client. Typescript is known as superset of Javascript.

Upcoming was Node.js it is the final part of the stack. It is the runtime environment of the JavaScript which is used to build the server. It is a cross-platform, open-source server environment that can run on Windows, Linux, Unix, macOS, and more. Node.js is a back-end JavaScript runtime environment, runs on the V8 JavaScript Engine, and executes JavaScript code outside a web browser.

On development of this application we use 35 components and backend server connection with CORS platform. This application is deployed on a local Personal computer where the client side connections are deployed and run on localhost:4200 and server side CORS platform connections are deployed and run on localhost:5000.

## **5.2 ALGORITHM**

In this application there is two type communication for data transfer where it can be data transferred from client to server or data transferred from server to client. Now the data transfer happening between client to server it follows certain procedures and validations. From the client side the data has been provided. The provided data will be validated using HTML5 validations and some specific validation and filtering done on TypeScript file of the component and pass the data to the Node.js from there the data will be transferred to the Express.js. After transferring the data to Express.js the data is stored in the MongoDB database. Consider in our application the client is storing the product data in database where the details of the product are validated by HTML5 validations and TypeScript filterings and the data has been transferred to server side Node.js and Express.js and store in database.

Similar for fetching data now the client has to specify the query the query is validated using HTML5 validations and TypeScript filterings and query has been transferred to server side Node.js and Express.js. Consider in our application the client has to find the stock of the product in shop so client visit stock management page and the specify the query to be processed for getting data. The specified query is validated in HTML5 validations and TypeScript filterings and AngularJS make request to the NodeJS and the request is parsed to ExpressJS which ask the data in a way mongoDB understand.

And then the second way of data transfer occur between from server to client side. Here the client already specified the query and the query is validated now we need to find the output for the query. Database fetches the data as per the query provided by the client and then transfer the data to Express JS . Express JS transfer the return request to the Node JS. Angular JS get the requested data from Node JS and display the data to the client for the query provided.

### **5.3 TESTING**

After developing the application we validate the working of the system application by various methods like testing individual components and verify the proper working of application on system.

#### **● System Testing**

Quality assurance is an important step in software engineering. This overlaps with all the phases of development right from the requirement analysis. This quality requirement of the software system must be clearly extracted during the requirement analysis and all the subsequent phases should be made biased to that, the final testing will become trivial and less expensive. There are number of quality parameters like correctness, accuracy, reliability, robustness, efficiency, effectiveness, reusability, maintainability etc.. The state of requirement of each of these parameters will vary depending upon the name and domain of the application. The testing should be done at the end of all development steps. Even though the final testing and verification are inevitable for better life and functionality of the software. The different software testing approaches and methods like white box testing and black box testing. The major phases in testing are design of test plan, setting up test case and test candidate and test procedure, testing and correction. This is a cycle process and the software will circulate through all the steps till it attends the required quality. The testing is carried in the following steps.

- **Unit testing**

Unit testing focuses verification effort on the smallest unit of software design the module. Using the details design description as a guide, important control paths are tested to uncover errors within boundary of the boundary of the module. The relative complexity of tests and the errors detected as a result is limited by the constrained scope established for unit testing.

Unit testing is normally considered an adjacent to coding steps. After source level code has been developed, reviewed, and verified for correct syntax, unit test case design begins. A review of design information provides guidance for establishing test cases that are likely to uncover error in each case of the categories discussed above. Each test case should be coupled with a set of expected results.

- **Integration testing**

Integration testing is systematic technique for constructing the program structure while at the same time conducting test to uncover error associated with interfacing .The objective is to take unit tested modules and build a program structure that has been dictated by design.

There is often a tendency to attempt no incremental integration; that is to construct the program using a “big bang “approach. The entire modules are combined in advance. The entire program is tested as whole and chaos usually result! A set of error is encountered. Correction is difficult because the isolation of cause is complicated by the vast expanse of entire program. Once errors are corrected, new ones appear and process continues in a seemingly endless loop.

After completion of of all 3 methods of testing we have followed another way also we provide our application system to new user and ask them to use and evaluate the developed application system. Based on all ways of testing we finally developed the bugs free application.



## CHAPTER 6

### RESULT AND DISCUSSION

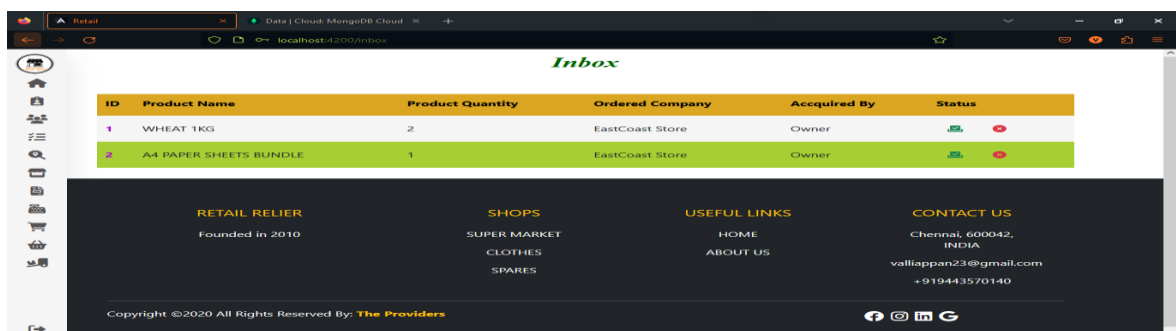
The development of the Superstore Sales Management System (SMTS) was successful. Our article represents an empirical study in store management system which highlighted importance of managing records, decision making and a common platform for all purposes of works in retail shops.

As compared to all available application they lack in features for every task the users need to use different applications but in the application which we developed has more features and faster. The response action takes 0.03 micro seconds.

The developed application has features like appraisal performance, billing, mange bills, payment, employee, shops, product and help retailers to connected on common platform where they can request the order from other retailer and they can track the order status using request order, inbox, order status pages.

At present our application contains 10 different shops with more than 100 products and more than 30 employess it can be further extended in terms in quantity of shop, employee, products, etc...

- Online record maintaining will have a significant impact on effectively handling data and may be accessible from any location at any time when those data are needed.
- Expansion is lucrative because of the methodical integration of all company needs, including billing, payments, order tracking and record keeping.



**Fig 6.1: Inbox**

## **CHAPTER 7**

### **CONCLUSSION**

#### **7.1 CONCLUSION**

In conclusion, a web-based system was created in this project to help small and medium-sized business owners manage their sales more successfully and efficiently online. The Superstore Sales Management System (SMTS) allows users to save time. In order to give users a better experience in the future, this system will be enhanced. The developed system helps the small and medium-sized business owners to take strategic decisions and help them to use the inventory stock management effectively. This system has provided a platform for the shopkeepers to be connected with each other and help each other according to the needs of the market. This system has completely cut off the work of various platforms for managing shop details like appraisal performance, product details, shop details, employee details, bills, payment.

#### **7.2 FUTURE WORK**

The developed system can be further enhanced by integrating with Google, biometric verification for user logins, use of scanners in billing, video message conferencing, graphical representation of strategically analysed data, Real time tracking of product with map support. From this system we can transfer the details of particular employee who works in one shop where the details of the particular user is asked from another shop at it provides a way to act like a unique permanent identification number for user. Further the developed application can get an iOS support, Android support from play store now the application is developed only for work on websites.

### **7.3 RESEARCH ISSUES**

We have gone through many survey reports on data analyzing, communication, decision making strategies, analysing market trends. Along with that we first planned to frame the idea for implementation for project and list the existing features on similar application and we have make a note then we developed a new features by without affecting existing features on similar application which is available. While implementing new features we again researched for the basic identification details needed for efficient use of new features and we have asked some shopkeepers about their needs and we designed a system according to them after developing the application we provided to them for evaluating our research work has been implemented successfully.

### **7.4 IMPLEMENTATION ISSUES**

On developing this system we have faced multiple issues on separating the data of particular shop and specifying the access level authentication to the system as many people from many shop work at same time. As each shop contains 3 levels of authority and according to authority the data must be transferred and access of the operation on the platform has been provided. On same way that many shop have many product and many employee. We need to provide a unique id for shop to avoid the unwanted transaction on data flow. In the case of identifying a product from a particular shop we have used product id and shop name and shop id. In case of employee details we have used shop name and shop id and employee id. To ensure the unique identification on employee id, product id, shop id we have developed and implemented a separate api method for verification of those id's. In the implementation of billing process we need to calculate the ammount and inform to the user we have used a separate function and api for make and manage a bill.

On making the shops interconnected for the order we have implemented track order method by using inbox and order status where if owner from a particular shop request for the product for specified quantity that detail is sharred in inbox. In inbox those order details are avilable where they can take and convey decision about the order whether they are acceping or declining order. The status replied from seller has to be conveyed to buyer on order status where here also the the product details contain product id, product name, cost, seller shop name for unique identifiction anlong with that quantity for the product. At the seller side they recive the message request in inbox in form of product id, product name, quantity, and buyer of the product.

## REFERENCES

- [1] Bong Jing Yee, Syahida Hassan, School of Computing, Universiti Utara Malaysia, Kedah Darul Aman, Sintok, 06010, MALAYSIA.
  
- [2] Bina Nusantara University's BINUS Business School Undergraduate Program, Damar Aji Irawan International Business Management Program, Management Department. International Information Management and Technology Conference 2020 (ICIMTech).
  
- [3] Tejal Tandel, Sayali Wagal, Nisha Singh , Department of Information Technology , A P Shah Institute of Technology , Thane(Maharashtra), India.
  
- [4] Wenhui Shan, Inner Mongolia Business & Trade Vocational College, Hohhot, Inner Mongolia, 010070
  
- [5] Tanisha G. Patil, Computer Science and Engineering Bangalore Institute of Technology, Bengaluru, India 2021 3rd International Conference on Advances in Computing, Communication Control and Networking (ICAC3N).
  
- [6] An Wang, Chong Qing College Of Architecture And Technology. 2021 2nd International Conference on E- Commerce and Internet Technology (ECIT).
  
- [7] Pavel S. Sharakhin, Operational Management Department Graduate School of Management, St. Petersburg University St. Petersburg, Russia. 2021 International Conference on Quality Management, Transport and Information Security, Information Technologies
  
- [8] Eheliyagoda D.R.M.R.R.D.R.S. Faculty of Computing, SLIIT Malabe, Sri Lanka. 2021 3rd International Conference on Advancements in computing (ICAC).

- [9] Donghui Wei, Congcui Jiang Liuzhou City Vocational College, Liuzhou, Guangxi, China, 545036. 2022 6th International Conference on Computing Methodologies and Communication (ICCMC).
- [10] Ricky Akbar Information System University of Andalas 2020 International Conference on Information Technology Systems and Innovation (ICITSI).
- [11] Ray Tommy Computer Science Department, School of Computer Science Bina Nusantara University Jakarta, Indonesia 11480. 2022 International Conference on Information Management and Technology (ICIMTech).
- [12] Su Lei, CITIC Phoenix Harbor Supply Chain Management Co., Ltd, CPH Logistics Department, Beijing, China. 2020 International Conference on Computer Engineering and Application (ICCEA).
- [13] Chung-Lien Pan, Yilin Yu, Weikeng Zhou, Wenli Zheng, Chujing Ou, Haonan Xu, Nanfang College of Sun Yat-sen University, Guangzhou, Guangdong, China. 2021 2nd International Conference on E-Commerce and Internet Technology (ECIT).
- [14] Jiao Qidi, School of International Education, Wuhan University of Technology, Wuhan, P.R.China. 2021 2nd International Conference on E-Commerce and Internet Technology (ECIT).

## APPENDIX

### A. SOURCE CODE

#### ● app.module.ts

```
import { NgModule } from '@angular/core';
import { BrowserModule } from '@angular/platform-browser';
import { HttpClientModule } from '@angular/common/http';

import { AppRoutingModuleModule } from './app-routing.module';
import { AppComponent } from './app.component';
import { HomepageComponent } from './homepage/homepage.component';
import { FooterComponent } from './footer/footer.component';
import { LoginComponent } from './login/login.component';
import { RegisterComponent } from './register/register.component';
import { DashboardComponent } from './dashboard/dashboard.component';
import { MenuComponent } from './menu/menu.component';
import { AboutComponent } from './about/about.component';
import { ProductComponent } from './product/product.component';
import { AttendanceComponent } from './attendance/attendance.component';
import { ManageProductComponent } from './manage-product/manage-product.component';
import { FindProductComponent } from './find-product/find-product.component';
import { NewAttendanceFormComponent } from './new-attendance-form/new-attendance-form.component';
import { AddStoreComponent } from './add-store/add-store.component';
import { FormsModule } from '@angular/forms';
import { ViewComponent } from './view/view.component';
import { StoreFindComponent } from './store-find/store-find.component';
import { StoreinfoComponent } from './storeinfo/storeinfo.component';
import { UsermaangementComponent } from './usermaangement/usermaangement.component';
import { UserinfoComponent } from './userinfo/userinfo.component';
import { ProductinfoComponent } from './productinfo/productinfo.component';
```

```

import { EditUserComponent } from './edit-user/edit-user.component';
import { ViewUserComponent } from './view-user/view-user.component';
import { EditProductComponent } from './edit-product/edit-product.component';
import { ViewProductComponent } from './view-product/view-product.component';
import { EditShopComponent } from './edit-shop/edit-shop.component';
import { ViewShopComponent } from './view-shop/view-shop.component';
import { ViewComponentComponent } from './view-component/view-component.component';
import { EmployeePerformanceComponent } from './employee-performance/employee-performance.component';
import { BillComponent } from './bill/bill.component';
import { ManageBillComponent } from './manage-bill/manage-bill.component';
import { SbillComponent } from './sbill/sbill.component';
import { PurchaseRequestComponent } from './purchase-request/purchase-request.component';
import { RecieverRequestComponent } from './reciever-request/reciever-request.component';
import { StatusComponent } from './status/status.component';
@NgModule({
  declarations: [
    AppComponent,
    HomepageComponent,
    FooterComponent,
    LoginComponent,
    RegisterComponent,
    DashboardComponent,
    MenuComponent,
    AboutComponent,
    ProductComponent,
    AttendanceComponent,
    ManageProductComponent,
    FindProductComponent,
    NewAttendanceFormComponent,
    AddStoreComponent,

```



```

    ViewComponent,
    StoreFindComponent,
    StoreinfoComponent,
    UsermaangementComponent,
    UserinfoComponent,
    ProductinfoComponent,
    EditUserComponent,
    ViewUserComponent,
    EditProductComponent,
    ViewProductComponent,
    EditShopComponent,
    ViewShopComponent,
    ViewComponentComponent,
    EmployeePerformanceComponent,
    BillComponent,
    ManageBillComponent,
    SbillComponent,
    PurchaseRequestComponent,
    RecieverRequestComponent,
    StatusComponent,

],
imports: [
    BrowserModule,
    FormsModule,
    HttpClientModule,
    AppRoutingModule
],
providers: [],
bootstrap: [AppComponent]
})
export class AppModule { }

```

## ● app-routing.module.ts

```
import { NgModule } from '@angular/core';
import { RouterModule, Routes } from '@angular/router';
import { HomeComponent } from './homepage/homepage.component';
import { LoginComponent } from './login/login.component';
import { RegisterComponent } from './register/register.component';
import { MenuComponent } from './menu/menu.component';
import { AboutComponent } from './about/about.component';
import { ProductComponent } from './product/product.component';
import { AttendanceComponent } from './attendance/attendance.component';
import { NewAttendanceFormComponent } from './new-attendance-form/new-attendance-form.component';
import { AddStoreComponent } from './add-store/add-store.component';
import { DashboardComponent } from './dashboard/dashboard.component';
import { ManageProductComponent } from './manage-product/manage-product.component';
import { FindProductComponent } from './find-product/find-product.component';
import { StoreFindComponent } from './store-find/store-find.component';
import { UsermanagementComponent } from './usermanagement/usermanagement.component';
import { StoreinfoComponent } from './storeinfo/storeinfo.component';
import { UserinfoComponent } from './userinfo/userinfo.component';
import { ProductinfoComponent } from './productinfo/productinfo.component';
import { EditUserComponent } from './edit-user/edit-user.component';
import { EditShopComponent } from './edit-shop/edit-shop.component';
import { EditProductComponent } from './edit-product/edit-product.component';
import { ViewUserComponent } from './view-user/view-user.component';
import { ViewShopComponent } from './view-shop/view-shop.component';
import { ViewProductComponent } from './view-product/view-product.component';
import { EmployeePerformanceComponent } from './employee-performance/employee-performance.component';
import { BillComponent } from './bill/bill.component';
import { ManageBillComponent } from './manage-bill/manage-bill.component';
```

```

import { SbillComponent } from './sbill/sbill.component';
import { PurchaseRequestComponent } from './purchase-request/purchase-request.component';
import { RecieverRequestComponent } from './reciever-request/reciever-request.component';
import { StatusComponent } from './status/status.component'

const routes: Routes = [
  {path:"", component: HomepageComponent},
  {path:"login", component: LoginComponent},
  {path:"about",component: AboutComponent},
  {path:"register",component: RegisterComponent},
  {path:"product",component: ProductComponent},
  {path:"new_attendance",component: NewAttendanceFormComponent},
  {path:"add_store",component: AddStoreComponent},
  {path:"dashboard/:userid",component: DashboardComponent},
  {path:"manage_product",component: ManageProductComponent},
  {path:"find_product",component: FindProductComponent},
  {path:"store_finder",component: StoreFindComponent},
  {path:"manage_user",component: UsermaangementComponent},
  {path:"store_info/:shopid",component: StoreinfoComponent},
  {path:"user_info/:Userid",component: UserinfoComponent},
  {path:"product_info/:productid",component:ProductinfoComponent},
  {path:"edit/:USERID",component:EditUserComponent},
  {path:"edit_shop/:shopid",component:EditShopComponent},
  {path:"edit_product/:productid",component:EditProductComponent},
  {path:"employeePerformance",component:EmployeePerformanceComponent},
  {path:"bill",component:BillComponent},
  {path:"manage_bill",component: ManageBillComponent},
  {path:"sbills/:pbill",component: SbillComponent},
  {path:"requested",component: PurchaseRequestComponent},
  {path:"inbox",component: RecieverRequestComponent},
  {path:"status",component: StatusComponent},

```

```
];
@NgModule({
  imports: [RouterModule.forRoot(routes)],
  exports: [RouterModule]
})
export class AppRoutingModule { }
```

- **api.service.ts**

```
import { HttpClient } from '@angular/common/http';
import { Injectable } from '@angular/core';

@Injectable({
  providedIn: 'root'
})
export class ApiService {
  constructor(public http:HttpClient) { }
  DoUserRegistraton(data:any){
    return this.http.post<string>("http://localhost:5000/register",data);
  }
  ProductRegistration(data:any){
    return this.http.post<string>("http://localhost:5000/addProduct",data);
  }
  ShopRegistration(data:any){
    return this.http.post<string>("http://localhost:5000/addShop",data);
  }
  DoUserLogin(data:any){
    return this.http.post<any[]>("http://localhost:5000/login",data);
  }
  isLoggedin(){
    console.log("true");
  }
}
```

```

        return !!localStorage.getItem("loggeduser");
    }
    getDahboardData(UserId : String){
        return this.http.get<any[]>("http://localhost:5000/DashboardData/"+UserId);
    }
    getAllStocks(){

        return this.http.get<any[]>("http://localhost:5000/allStocks/");
    }
    newgetAllStocks(da:string){
        console.log(da);
        return this.http.get<any[]>("http://localhost:5000/newallStocks/"+da);
    }
    getAllUsers(){

        return this.http.get<any[]>("http://localhost:5000/allUsers");
    }
    newgettingusers(da:String){
        console.log(da);
        return this.http.get<any[]>("http://localhost:5000/newallUsers/"+da);
    }
    getFindAllStocks(){
        return this.http.get<any[]>("http://localhost:5000/FindallStocks");
    }
    getFindAllStocks1(){
        return this.http.get<any[]>("http://localhost:5000/newFindallStocks1");
    }
    newgetFindAllStocks(da:String){
        console.log(da);
        return this.http.get<any[]>("http://localhost:5000/newFindallStocks/"+da);
    }
    getStoreDetails(){
        return this.http.get<any[]>("http://localhost:5000/store_details");
    }
}

```

```

ShopIdAvailability(shopId : String){
    return this.http.get<any[]>("http://localhost:5000/shop_id_CHECK/"+shopId);
}

UserIdAvailability(userId : String){
    return this.http.get<any[]>("http://localhost:5000/user_id_CHECK/"+userId);
}

ProductIdAvailability(prodId:string){
    return this.http.get<any[]>("http://localhost:5000/prod_id_CHECK/"+prodId);
}

getSingleUserData(userid:string){
    return this.http.get<any[]>("http://localhost:5000/getuser/"+userid);
}

getSingleShopData(shopid:string){
    return this.http.get<any[]>("http://localhost:5000/getshop/"+shopid);
}

getSingleProductData(prodcid:string){
    return this.http.get<any[]>("http://localhost:5000/getproduct/"+prodcid);
}

editSingleUserData(data:any[]){
    return this.http.put<string>("http://localhost:5000/updateUser",data);
}

editSingleShopData(data:any[]){
    return this.http.put<string>("http://localhost:5000/updateShop",data);
}

editSingleProductData(data:any[]){
    return this.http.put<string>("http://localhost:5000/updateProduct",data);
}

ViewUserData(UserId : String){
    return this.http.get<any[]>("http://localhost:5000/ViewUserData/"+UserId);
}

ViewProductData(ProdId : String){
    return this.http.get<any[]>("http://localhost:5000/ViewProductData/"+ProdId);
}

```

```

ViewStoreData(StoreId : String){
  console.log(StoreId);
  return this.http.get<any[]>("http://localhost:5000/ViewStoreData/"+StoreId);
}

DeleteUser(strID: number){
  return this.http.delete<string>("http://localhost:5000/DeleteUser/"+strID);
}

Deleteproduct(prodID: number){
  return this.http.delete<string>("http://localhost:5000/DeleteProduct/"+prodID);
}

Deleteshop(shpID: number){
  return this.http.delete<string>("http://localhost:5000/DeleteShop/"+shpID);
}

Searchproduct(searchTXT : string){
  return this.http.get<any[]>("http://localhost:5000/SearchProduct/"+searchTXT);
}

Searchuser(searchTXT : string){
  let da=localStorage.getItem("loggeduser shop name");
  console.log("office ",da);
  return
this.http.get<any[]>("http://localhost:5000/SearchUser/"+searchTXT+"/"+da);
}

Searchshop(searchTXT : string){
  return this.http.get<any[]>("http://localhost:5000/SearchShop/"+searchTXT);
}

newaddAttendance(ID:string,data:string,da:string){
  const myData={
    ID,data,da
  }
  return this.http.put<any>("http://localhost:5000/addAttendance/",myData)
}

resetAttendance(ID:string,data:string){
  console.log()
}

```

```

const myData = {
  ID,
  data
}
return this.http.put<any>("http://localhost:5000/resetAttendance/",myData);
}
addBill(NameComp:string,billNo:string,custName:string,phone:string,product:string,
sellingPrice:number,qty:number,subTotal:string,total:number){
const billData={
  NameComp,billNo,custName,phone,product,sellingPrice,qty,subTotal,total
}
return this.http.put<any>("http://localhost:5000/addBill/",billData);
}
totalCost(billNo:string,cost:string,customer:string,phone:string, company:string){
const tc={
  billNo,cost,customer,phone,company
}
return this.http.put<any>("http://localhost:5000/totalCost/",tc);
}
newgetAllBills(da:String){
console.log(da);
return this.http.get<any[]>("http://localhost:5000/newallBills/"+da);
}
getParticularBills(bill : string){
return this.http.get<any[]>("http://localhost:5000/par_bills/"+bill);
}
updatestock(prodname:string,newqty:string){
console.log()
const produData = {
  prodname,
  newqty
}
return this.http.put<any>("http://localhost:5000/updatingStock/",produData);
}

```



```

searchBill(prod:string){
  console.log(prod)
  return this.http.get<any[]>("http://localhost:5000/Searchprods/"+prod);
}

searchBills(bill:string){
  console.log(bill)
  return this.http.get<any[]>("http://localhost:5000/Searchbills/"+bill);
}

searchp1(pro:string){
  return this.http.get<any[]>("http://localhost:5000/SearchP/"+pro);
}

isEmployee(){
  let job_role=localStorage["loggeduser Designation"];
  console.log(job_role);
  let office=localStorage["loggeduser shop name"];
  console.log(office);
  let jr=job_role.toLowerCase();
  console.log(jr);
  if(jr === "employee"){
    return false;
  }
  else{
    return true;
  }
}

isManager(){
  let job_role=localStorage["loggeduser Designation"];
  console.log(job_role);

  let office=localStorage["loggeduser shop name"];
  console.log(office);

  let jr=job_role.toLowerCase();

```

```

console.log(jr);

if(jr === "manager"){
    return false;
}
else{
    return true;
}
}

isOwner(){
    let job_role=localStorage["loggeduser Designation"];
    console.log(job_role);

    let office=localStorage["loggeduser shop name"];
    console.log(office);
    let jr=job_role.toLowerCase();
    console.log(jr);

    if(jr === "owner"){
        return false;
    }
    else{
        return true;
    }
}

Deletebill(bill: string){
    return this.http.delete<string>("http://localhost:5000/Deletebill/"+bill);
}

DeleteTbill(bill: string){
    return this.http.delete<string>("http://localhost:5000/DeleteTbill/"+bill);
}

newsupplier(pname:string,pqty:string,prodcomp:string,fdesignation:string,foffice:s
tring){
    const RequestData={

```

```

    pname,pqty,prodcomp,fdesignation,foffice
  }
  console.log(RequestData);
  return this.http.put<any>("http://localhost:5000/newRequest/",RequestData);

}
newRequest(da: String){
  console.log(da);
  return this.http.get<any[]>("http://localhost:5000/requested/"+da);
}
newInbox(da: String){
  console.log(da);
  return this.http.get<any[]>("http://localhost:5000/inbox/"+da);
}
accept(pname:string,pqty:string,roffice:string,pdesignation:string,poffice:string,message:string){
  const statusdata={
    pname,pqty,roffice,pdesignation,poffice,message
  }
  console.log(statusdata);
  return this.http.put<any>("http://localhost:5000/ac/",statusdata);
}
decline(pname:string,pqty:string,roffice:string,pdesignation:string,poffice:string,message:string){
  const statusdata={
    pname,pqty,roffice,pdesignation,poffice,message
  }
  console.log(statusdata);
  return this.http.put<any>("http://localhost:5000/de/",statusdata);
}
orstatus(office : string){
  return this.http.get<any>("http://localhost:5000/status/"+office);
}
}

```

## B. SCREENSHOTS

```
C:\WINDOWS\system32\cmd.exe - "node" "C:\Users\palan\AppData\Roaming\npm\node_modules\nodemon\bin\nodemon.js" server.js

Microsoft Windows [Version 10.0.19044.1526]
(c) Microsoft Corporation. All rights reserved.

E:\final year projects\retail relier\retail>nodemon server.js
[nodemon] 2.0.20
[nodemon] to restart at any time, enter `rs`
[nodemon] watching path(s): *.*
[nodemon] watching extensions: js,mjs,json
[nodemon] starting `node server.js`

New version of nodemon available!
Current Version: 2.0.20
Latest Version: 2.0.22

check port number 5000
Database Connected
```

```
Windows PowerShell

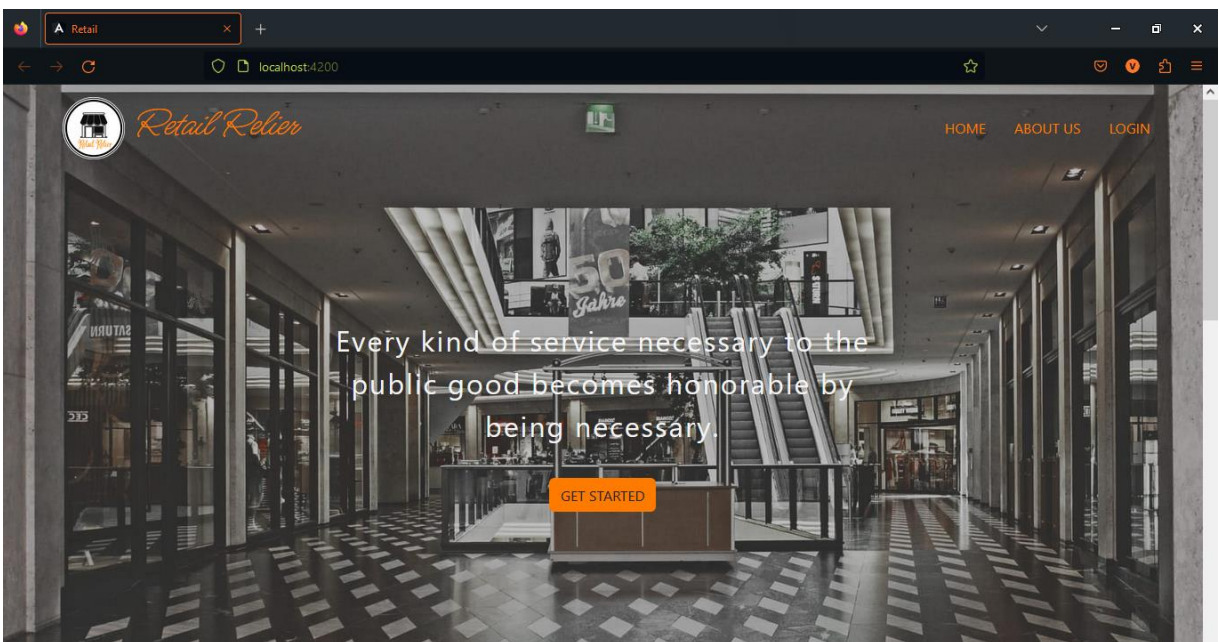
E:\final year projects\retail relier\retail>ng serve -o
Node.js version v19.0.0 detected.
Odd numbered Node.js versions will not enter LTS status and should not be used for production. For more information, please see https://nodejs.org/en/about/releases/.
✓ Browser application bundle generation complete.

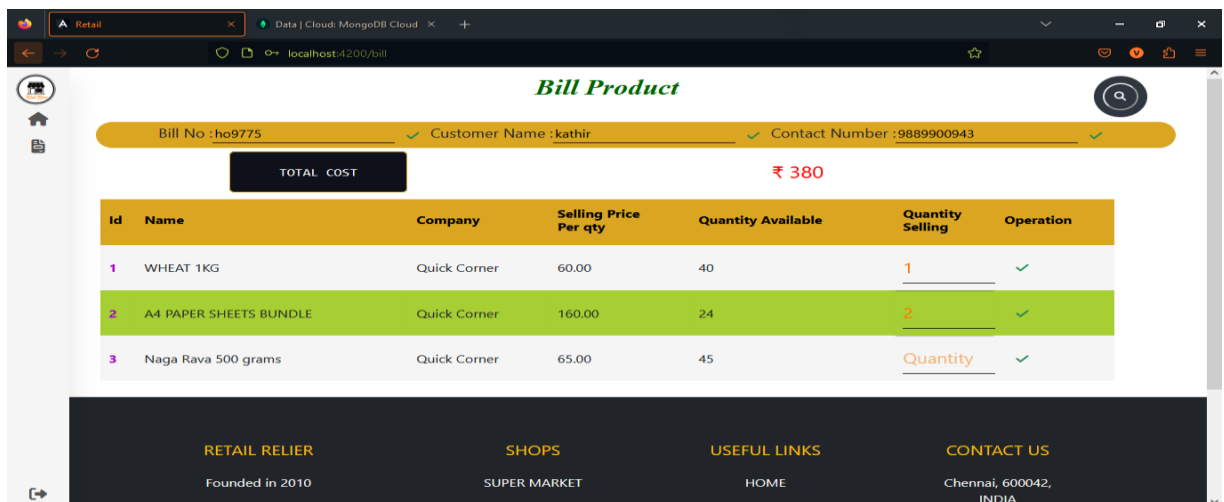
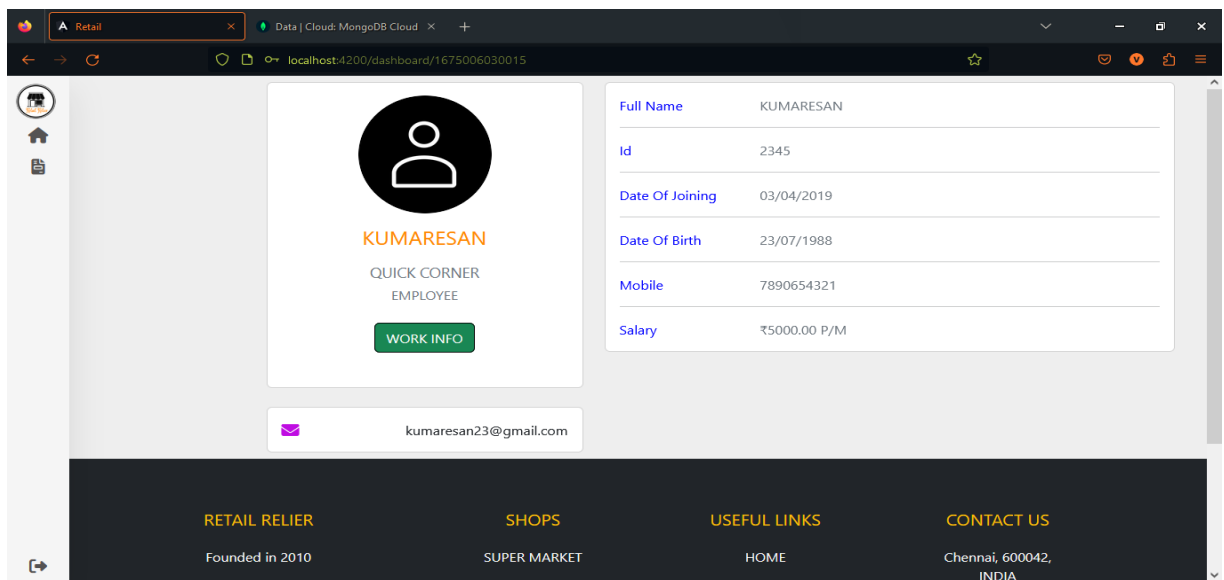
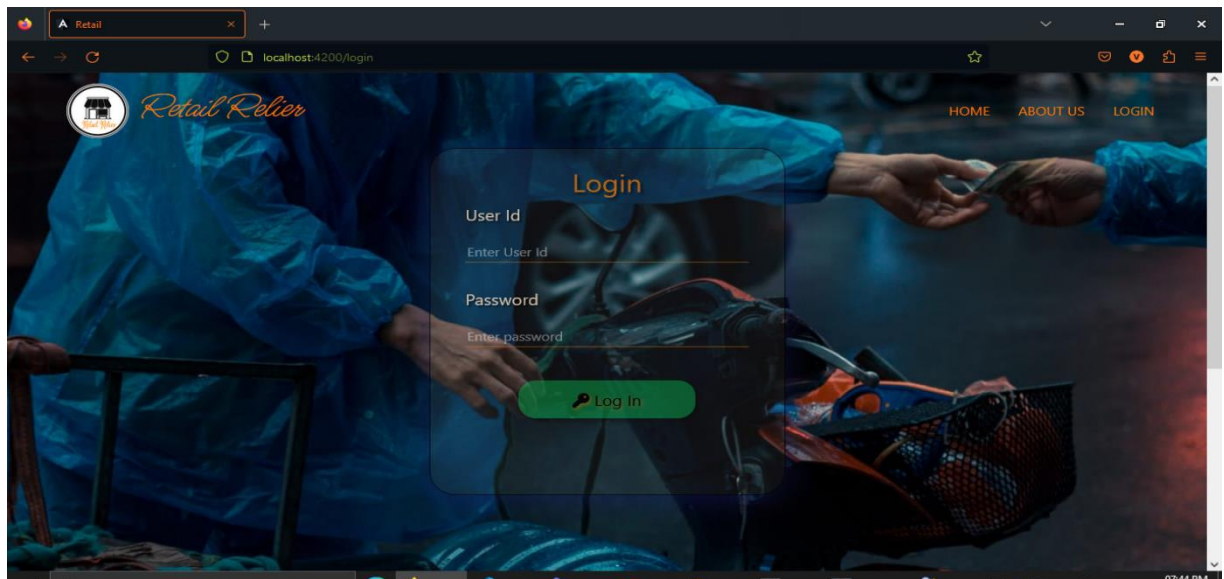
Initial Chunk Files | Names | Raw Size |
vendor.js           | vendor | 2.47 MB |
main.js             | main | 702.05 kB |
styles.css, styles.js | styles | 440.10 kB |
polyfills.js        | polyfills | 318.05 kB |
runtime.js          | runtime | 6.51 kB |
| Initial Total | 3.90 MB |

Build at: 2023-04-08T14:13:03.190Z - Hash: c7b7ff75e61df5c1 - Time: 15668ms

** Angular Live Development Server is listening on localhost:4200, open your browser on http://localhost:4200/ **

✓ Compiled successfully.
```







Retail

Data | Cloud: MongoDB Cloud

localhost:4200/status

## Order Status

ID	Product Name	Product Quantity	Requested Company	Date Of Purchase	Status	Sanctioned By
1	WHEAT 1KG	2	EastCoast Store	27/2/2023	DECLINE	Owner
2	A4 PAPER SHEETS BUNDLE	1	EastCoast Store	27/2/2023	ACCEPTED	Owner

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 Founded in 2010

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 SPARES

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 ABOUT US

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 INDIA  
 valliappan23@gmail.com  
 +919443570140

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Retail

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localhost:4200/requested

## Product Requested

ID	Product Name	Product Quantity	Our company	Ordered Company	Acquired By
1	milkybar	5	Quick Corner	EastCoast Store	Owner
2	pen	10	Quick Corner	EastCoast Store	Owner
3	milkybar	10	Quick Corner	EastCoast Store	Owner

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Retail

Data | Cloud: MongoDB Cloud

localhost:4200/manage\_bill

## Sales Management

S.No	Bill No	Date Of Purchase	Store Name	Customer Name	Contact Number	Purchase Cost	Operation
1	gguil223	27/2/2023	EastCoast Store	santosh	9090876521	30	

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**NAVEEN**

EASTCOAST STORE  
OWNER

WORK INFO

Full Name Naveen

Id 1

Date Of Joining 02/05/2022

Date Of Birth 20/09/1995

Mobile 9087654321

Salary ₹00.00 P/M

naveen20@gmail.com

**VALLIAPPAN L**

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valliappan23@gmail.com  
9443570140

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**Payment Details**

Bill det54

Name praveen

Phone 9845321076

Email prov456@gmail.com

Amount ₹ 50

UPI VISA RuPay

Pay ₹ 50.00

**VALLIAPPAN L**

**Pay With UPI QR**

Scan the QR using any UPI app on your phone.

QR Code is valid for 11:34 minutes

**Cards, UPI & More**

**Card**  
Visa, MasterCard, RuPay, and Maestro

**UPI / QR**  
& More

**Netbanking**  
All Indian banks

**Wallet**  
Mobikwik & More

₹ 50  
[View Details](#)

**Pay Now**

## C. RESEARCH PAPER

# SUPER STORE SALES MANAGEMENT SYSTEM

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**Abstract** - A system called the Super Store Sales Management System is primarily made for online shopping stores. This platform is helpful for managing all types of store information and offers a collaborative tool for retailers to use to meet consumer demand. The use of the shared platform allows for easier communication with other retailers and tracking of product purchase progress, which saves time and resources. This method aids in maintaining information about stores, employees, products, bills, payments made using Razorpay, and the performance of employees. The store owner uses the data from this system to analyse staff productivity and merchandise demand before making strategic decisions and boosting profitability. Angular js and MongoDB ( MEAN stack ) were primarily used in the development of this application.

**Keywords**-- Store Management, Sales Management, Stocks, Payroll System, Shopkeeper, Profit, Dealers, Shopping, Banking.

### I. INTRODUCTION

The swift growth of modern science and technology has resulted in the widespread use of computer technology. Numerous industries now depend on it as a crucial tool, particularly those that support internet technology and the rise of the information superhighway. As a result, the IT industry feels increased pressure to draw attention to its unique competitive advantages. In the digital age, there is a huge amount of data that may be processed and delivered, thus maintaining the creation and usage of the database is crucial.

It is crucial because, on the domestic market, certain small and medium-sized supermarkets fall short of big and medium-sized supermarkets in terms of information processing and storage. In order to respond to market competition, efficient handling and management procedures are required, hence it is critical to speed up the supermarket's computerization process.

Small and medium sized firms have a considerable impact on the growth of the Chinese economy. As technology advances, sized businesses are becoming easier to utilise. Due to the market economy's rapid expansion and fierce rivalry, the grocery business is required to employ computers to handle inventory, sales, and a few other tasks.

Their primary activity as small- and medium-sized hold several positions with low-quality skills. Therefore, a system must not only have flawless assistance and check

functions but also be simple to use, brief, and clear. supermarkets is product sales. Nonetheless, there are still many questions regarding how the system operates. All sales orders require a lot of effort, are prone to error, and are artificially filled. Inventory is a made-up type of recordkeeping that is impossible to pinpoint the actual location of the inventory.

Measuring the sales success of each company membership and each wonderful transaction normally takes a lot of time and effort. We will get ready for computerised administration at the business in order to allay the aforementioned worries and increase the financial benefit.

### General Situation of small and medium sized supermarket

The supermarket's main issue right now is finding ways to cut costs in light of the increasingly ferocious competition.

For typical supermarkets, the management of raw material sources, sales and inventory, staff information, and administration affects the supermarket's long-term viability. In general, there is a huge necessity for an inventory, sales, and procurement system.

The procurement, sales, and warehouse departments of the supermarket successfully manage and monitor all facets of these activities. By applying procurement, sales, and inventory management systems, it is feasible to successfully decrease blind procurement, cut more individuals are becoming computer proficient and our nation's small and medium-sized supermarkets are managed quite differently from those of the large supermarket both locally and internationally. We first need to understand some of the management features of small and medium-sized supermarkets in order to develop management software that is suitable for them.

Compared to large supermarkets and chain supermarkets, which place a greater focus on being brief and practical, small and medium-sized supermarkets have different management system requirements.

### Features of small and medium sized supermarket

- The size is relatively small and may not have its warehouse, and the inventory backlog is less.
- and mining, data prediction models, and the organization of

- The number of employees is low, and one person may hold several positions with low-quality skills. Therefore, a system must not only have flawless assistance and check functions but also be simple to use, brief, and clear.

## II. LITERATURE REVIEW

- Bong Jing Yee and Syahida Hassan recognize Small firms are also multiplying to take advantage of this chance to boost their sales through internet platforms. Even though many people have successfully launched internet businesses across a variety of platforms, they lack the tools needed to assist them with record keeping. Small firms frequently struggled with the expansion of their operations because they neglected to keep track of their sales and revenues. To provide a tool for this target group, our project is creating the Sales Management System (SMTS). Users of the web-based SMTS system can enter data about sales, products, and suppliers.
- A qualitative case study on the effects of an online business was provided by Irawana. "Electronic commerce" is the term used to describe online trading procurement costs, and regulate inventory supermarket's competitiveness in the market. Business (B2B) and business-to-consumer (B2C) are the two subcategories of e-commerce (B2C). For retailers, the advantages of e-commerce include expanded market access, data, and lower operational and procurement expenses. The advantages of utilizing e-commerce for customers, however, include the capacity to customize items, reduced costs, more thorough product, and service information, a greater range of products, and a more relaxing shopping experience.
- Tejal Tandel mentioned that the retail industry has adopted a lot of inventory management techniques, and some chains even utilize forecasting software to look at potential future sales. As a result, a lot of business owners wind up collecting a lot of worthless and non-profitable stuff, which causes them to incur losses. A mobile application that provides all the functions of a point-of-sale system and provides insight into potential future transactions is an especially affordable and helpful solution to this problem. It will help store owners manage their current goods purchases and invoices. They will be able to adjust their investments in supply and products, assuring optimal profitability, thanks to the predicted sales analysis.
- In this essay, Wenhui Shan examines the core elements of intelligent sales management under big data. The most important aspects of sales management are how to build up a sales management system, improve the system for managing assessments, and increase internal sales control. While merging the key components of data under the umbrella of "big data," the author looks at the development of data warehouses, data cleaning

model analysis findings. The up for mail notifications. Additionally, keep up the employee's performance at work. purpose of this article is to assist readers in maximizing the advantages of big data technology applications and to support the corporate economy's healthy growth.

## III. PROPOSED METHODOLOGY

The Superstore Sales Management System project will be done at the location where sensibly, increase market customers go to get their daily goods and pay for them. Therefore, it is necessary to determine how market sensitivity, and boost the Business and e-commerce.

It provides a common platform for communication of retail shopkeepers, help for taking tactical decisions and management of shop details like employee, product, bills, payment, performance of employee, etc.

It has the following attributes:

- Reduction in processing costs.
- Error reduction.
- Automatic posting.
- Flexibility.
- Ability to satisfy user needs
- Reduction in manpower.
- Improved reporting.
- Quicker response time.
- Improves resources use.

The working model of this system has certain rules to access the following features

- **Login:** The administrator can log in with his username and password. They can provide a username or password to other unauthorized users after logging in successfully, manage stock in the shop, add a shop, and view employee performance. And according to Login credentials, access to the site has been provided. The administrator can log in with his username and password. They can provide a username or password to other unauthorized users after logging in successfully, manage stock in the shop, add a shop, and view employee performance.
- **Order:** The goods will process the dealer's order after receiving it over the internet. After it has been saved in the database, a crystal account will be created for billing reasons, and you will get a mail notification. If the purchase was made offline, the bill information will be kept separately in the database.
- **Stock:** The billing person should be aware of the item's availability in the store at the moment of sale and make plans to sell them to the distributor or consumer. And keep the merchandise readily available.
- **Payment:** For the consumer or sales partner, there are options for making payments, including online payments and cash on delivery.

- **Shopkeeper / Manger:** Enter your order for the items after checking them all. View the status of your orders, explore freshly added merchandise, and sign up for mail notifications. Additionally, keep up the employee's performance at work.
- **Product:** The authorized shop representative gave the product information at the time of billing, put the items in the basket, and then handled the billing and delivery. Keep track of the product information in a different database.
- **Shop:** Manage basic details of shops which contain Name, Owner, Address of shop, Gst No, Pan No, etc...
- **Employee:** Maintain the records of the employee and salary will be provided based on work and role.
- **Billing:** Maintain the billing records of the shop and help to generate new bill.
- **Search Product:** Search for a product on the website of your shop which is to be delivered to the customer/sales partner. And add them to the cart and proceed with billing.
- **Search Shop:** The Manager and owner of the shop have the access to find a new partner for developing the business.

#### Rules for accessing the platform

- The shop should contain a minimum of 10 employees classified with 3 designations (Owner, Manager, Employee).
- The shop should be located within the specified location.  
The shop should be registered with the government and must have an individual/official PAN Card number and GST number.
- After you contact us and give us the necessary information, one of our staff members will visit the shop in person to verify the provided information and grant you access to use the platform.
- The things that will be sold should be packaged separately and securely, rather than utilizing paper and thread.
- The government and our officials should verify and authorize the Quality of the products before they are marketed.

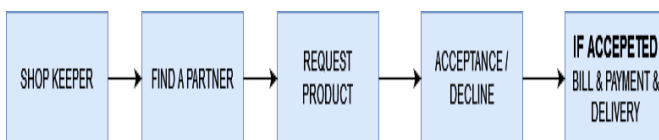


Fig 1: Finding a seller and buying it using online platform

A shop added in this platform consist of 3 types of employee access owner / manager / employee.

Access of owner/manager has the authority to find a partner for supplying goods as per the needs of a shop. After

finding the partner request the order and pay for the goods and then get delivery.

Attainment control of employee can be done by owner / manager based on that employee gets their salary and attendance of manager can be done by owner based on that manager gets their salary.

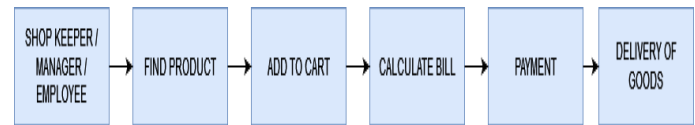


Fig 2: Offline sales with payment

With the aid of a shopkeeper, manager, or employee, the billing system locates the product from the database and adds it to the cart. They then compute the bill amount, and payment for the products is made either with cash or through an internet transaction using a bank. The products will be delivered upon receipt of payment.

The form is titled 'Add User Registration' and contains two columns of input fields. The left column includes fields for Employee Name, Address, Date Of Birth, Email, Employee Designation (with a dropdown menu), and Password. The right column includes fields for Company Name, Employee ID, Date Of Joining, Phone Number, and Gender (with a dropdown menu). Each field has a placeholder text indicating what to enter.

Fig 3 : Add Employee of a store form

This Billing and Payment system is common for both online and offline transaction of business. Owner alone can see the total sales data whenever and wherever it is needed for taking strategic decision by without depending on anyone. The data stored in database are secured there will be no chance of error.

The client fills out the form, the information is checked using HTML5 validations, and then a submission button is enabled. The client stores the details in the database after completing all validations. Before storing into data base the validated data has to be processed via Node JS, Express JS and then store at Mongo DB.

#### Algorithm

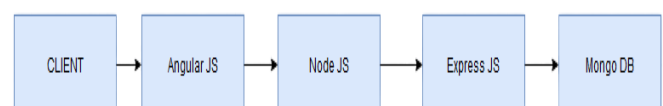


Fig 4: client has a request to process

Client has to find the stock of the product in shop so client visit stock management page and the query is processed to get the data. Angular JS make request to the Node JS and the request is parsed to Express JS which ask the data in a way mongo DB understand.

#### V. CONCLUSION

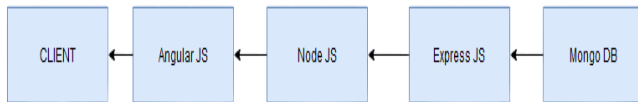


Fig 5: Database retrieves and returns data based on client-specified need.

Database fetches the data as per the query provided by the client and then transfer the data to Express JS . Express JS transfer the return request to the Node JS. Angular JS get the requested data from Node JS and display the data to the client for the query provided.

#### IV. RESULT AND DISCUSSION

The development of the Superstore Sales Management System (SMTS) was successful. Our article represents an empirical study in store management system which highlighted importance of managing records, decision making and a common platform for all purposes of works in retail shops.

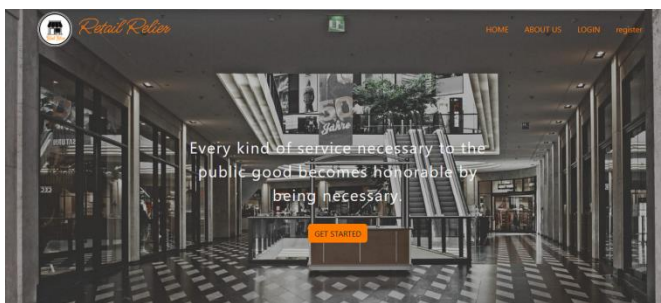


Fig 6: Website application result

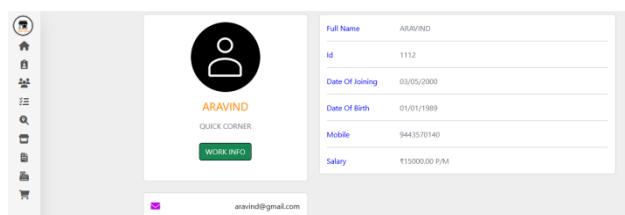


Fig 7: Dashboard Result

Order Status					
Id	Product Name	Product Quantity	Requested Company	Date Of Purchase	Status
1	WHEAT 1KG	2	EastCoast Store	27/2/2023	DECLINE
2	A4 PAPER SHEETS BUNDLE	1	EastCoast Store	27/2/2023	ACCEPTED

Fig 8 : Order Status

- Online record maintaining will have a significant impact on effectively handling data and may be accessible from any location at any time when those data are needed.
- Expansion is lucrative because of the methodical integration of all company needs, including billing, payments, order tracking and record keeping.

In conclusion, a web-based system was created in this project to help small and medium-sized business owners manage their sales more successfully and efficiently on online. The Superstore Sales Management System (SMTS) allows users to save time. In order to give users a better experience in the future, this system will be enhanced.

#### VI. REFERENCES

- [1] Bong Jing Yee, Syahida Hassan, School of Computing, Universiti Utara Malaysia, Kedah Darul Aman, Sintok, 06010, MALAYSIA.
- [2] Bina Nusantara University's BINUS Business School Undergraduate Program, Damar Aji Irawan International Business Management Program, Management Department. International Information Management and Technology Conference 2020 (ICIMTech).
- [3] Tejal Tandel, Sayali Wagal, Nisha Singh , Department of Information Technology , A P Shah Institute of Technology , Thane(Maharashtra), India.
- [4] Wenhui Shan, Inner Mongolia Business & Trade Vocational College, Hohhot, Inner Mongolia, 010070
- [5] Tanisha G. Patil, Computer Science and Engineering Bangalore Institute of Technology, Bengaluru, India 2021 3<sup>rd</sup> International Conference on Advances in Computing, Communication Control and Networking (ICAC3N).
- [6] An Wang, Chong Qing College Of Architecture And Technology. 2021 2<sup>nd</sup> International Conference on E-Commerce and Internet Technology (ECIT).
- [7] Pavel S. Sharakhin, Operational Management Department Graduate School of Management, St. Petersburg University St. Petersburg, Russia. 2021 International Conference on Quality Management, Transport and Information Security, Information Technologies
- [8] Eheliyagoda D.R.M.R.D.R.S. Faculty of Computing, SLIIT Malabe, Sri Lanka. 2021 3<sup>rd</sup> International Conference on Advancements in computing (ICAC).
- [9] Donghui Wei, Congcui Jiang Liuzhou City Vocational College, Liuzhou, Guangxi, China, 545036. 2022 6th International Conference on Computing Methodologies and Communication (ICCMC).
- [10] Ricky Akbar Information System University of Andalas 2020 International Conference on Information Technology Systems and Innovation (ICITSI).
- [11] Ray Tommy Computer Science Department, School of Computer Science Bina Nusantara University Jakarta, Indonesia 11480. 2022 International Conference on Information Management and Technology (ICIMTech).
- [12] Su Lei, CITIC Phoenix Harbor Supply Chain Management Co., Ltd, CPH Logistics Department, Beijing, China. 2020 International Conference on Computer Engineering and Application (ICCEA).
- [13] Chung-Lien Pan, Yilin Yu, Weikeng Zhou, Wenli Zheng, Chujing Ou, Haonan Xu, Nanfang College of Sun Yat-sen University, Guangzhou, Guangdong, China. 2021 2nd International Conference on E-Commerce and Internet Technology (ECIT).

