INSTITUTE FOR ADVANCED COMPUTING AND SOFTWARE DEVELOPMENT AKURDI, PUNE

Documentation On

E-Spare Part Store

PG-DAC SEPT 2022

Submitted By:

Group No: 99

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ABSTRACT

The e-Spare part store is a web application that connects retailers and official distributors. Its main objective is to eliminate middlemen from supply chain and provide genuine products at competitive prices.

It provides all products list online so that customer can make decision easily from comfort of his home. He can track order status, products availability on few clicks.

Distributor also now don't have to manage physical store and handle customers directly. He can now focus his energy on improving other business operation.

It introduces new entity in business operation called administrator in entire business operation. Who centrally co-ordinates between all the stakeholders. Since large part of business operation is digitalised now admin can use advance analytical tools on data. Learn from it then improve and streamline business operations even more.

ACKNOWLEDGEMENT

We would like to express our sincere gratitude to everyone who has contributed to the completion of our project.

First and foremost, We would like to thank our project guide **Mr.Shivprasad sir** for their constant guidance and support throughout the project. We extend our sincere thanks to our respected Centre Co-Ordinator **Mr. Rohit Puranik**, for allowing us to use the facilities available.

We would also like to express our appreciation to the faculty members of our department for their constructive feedback and encouragement. Their insights and suggestions have helped us to refine our ideas and enhance the quality of our work.

Furthermore, we would like to thank our families and friends for their unwavering support and encouragement throughout our academic journey. Their love and support have been a constant source of motivation and inspiration for us.

Thank you all for your valuable contributions to our project.

Abhishek Saswade (229123)

Abhishek Shinde (229208)

INTRODUCTION

E Spare Part Store is a modern web-bas–ed platform designed to buy spare part by small retailers directly from wholesaler distributor. In earlier days shopkeeper get the products from the chain of 2 to 3 dealers due to which retailers get very less margin on that product. This platform establishes direct relationship between official distributor and retailer. Additionally, all the business operations like placing orders, payment on customer side; managing products, stock on distributor side; managing delivery updates on delivery person side now can be done very easily
in few clicks. Administrator now can easily monitor entire chain of business operations online and if necessary, improve on it.

Features: -

1.Products Available: Spare Parts of Commercial vehicles.
2. Search for products easily.
3. Category of products: Engine Spares, Transmission Spares, Electrical Spares etc
4. Cart feature
5. The admin can add/delete Suppliers and delivery persons.
6. Allows the customers to maintain cart.

1.1 PROJECT OBJECTIVE

E-Spare part Store is an online web application for commercial vehicles spare parts. It is B2B in nature where Retailer can buy spare parts with the help of part number. Distributor will list all the available parts and Admin will govern the site operations.

1.2 PROJECT SCOPE

Application has four types of Users. Admin, Dealer, Buyer, Admin & Delivery Person. It provides facility for Sign Up & Sign In. After successful Signing In it will take you to the page which is designed for corresponding user. Buyer user can search a part, view its details, purchase the product and can keep track of delivery progress. Dealer user can add & remove his products, receive orders, prepare & dispatch it. Admin user can perform various site governance operations. Delivery user will update the delivery progress of products

Activity Diagrams:

Activity Diagram For Admin

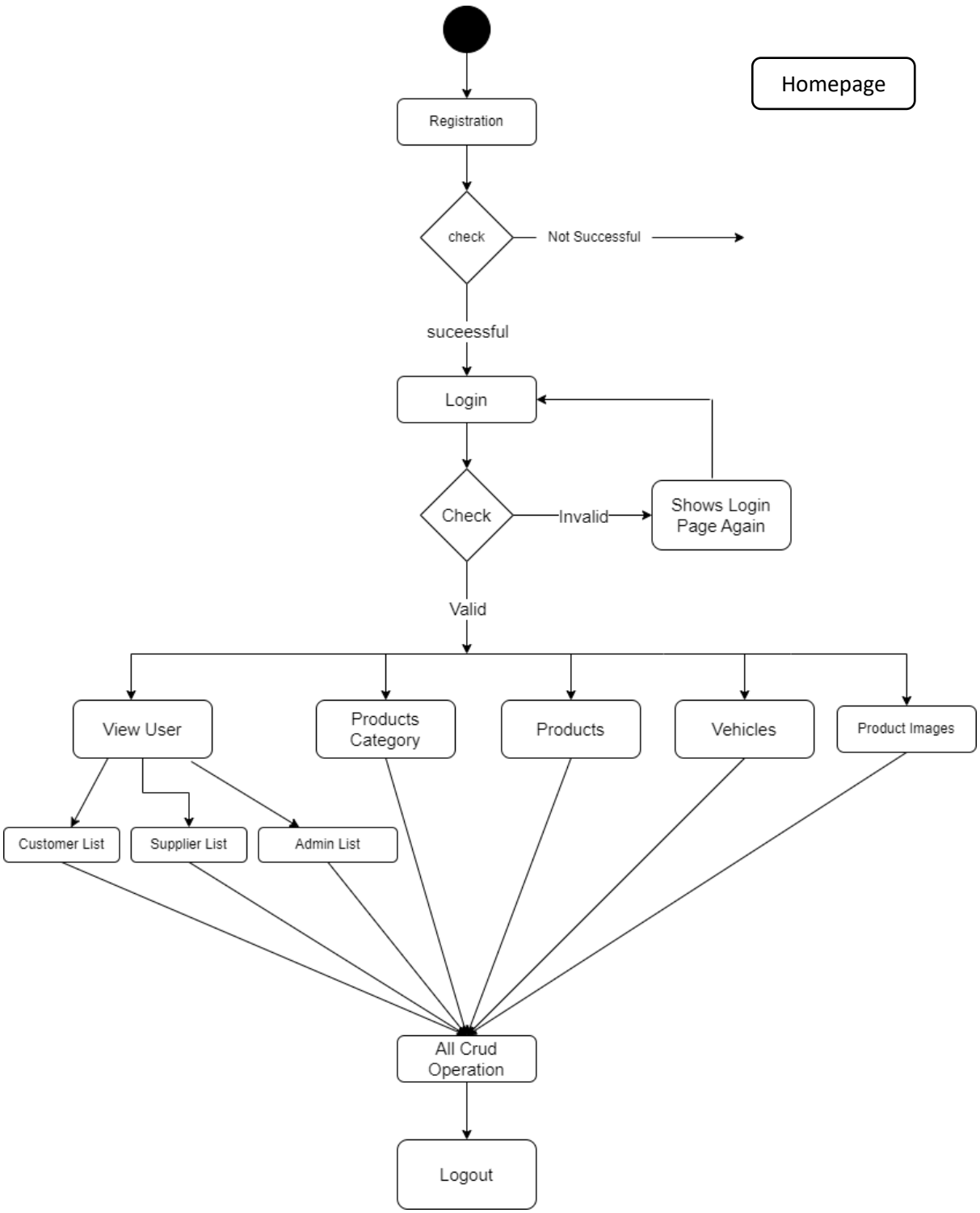


Figure 1 Admin Activity Diagram

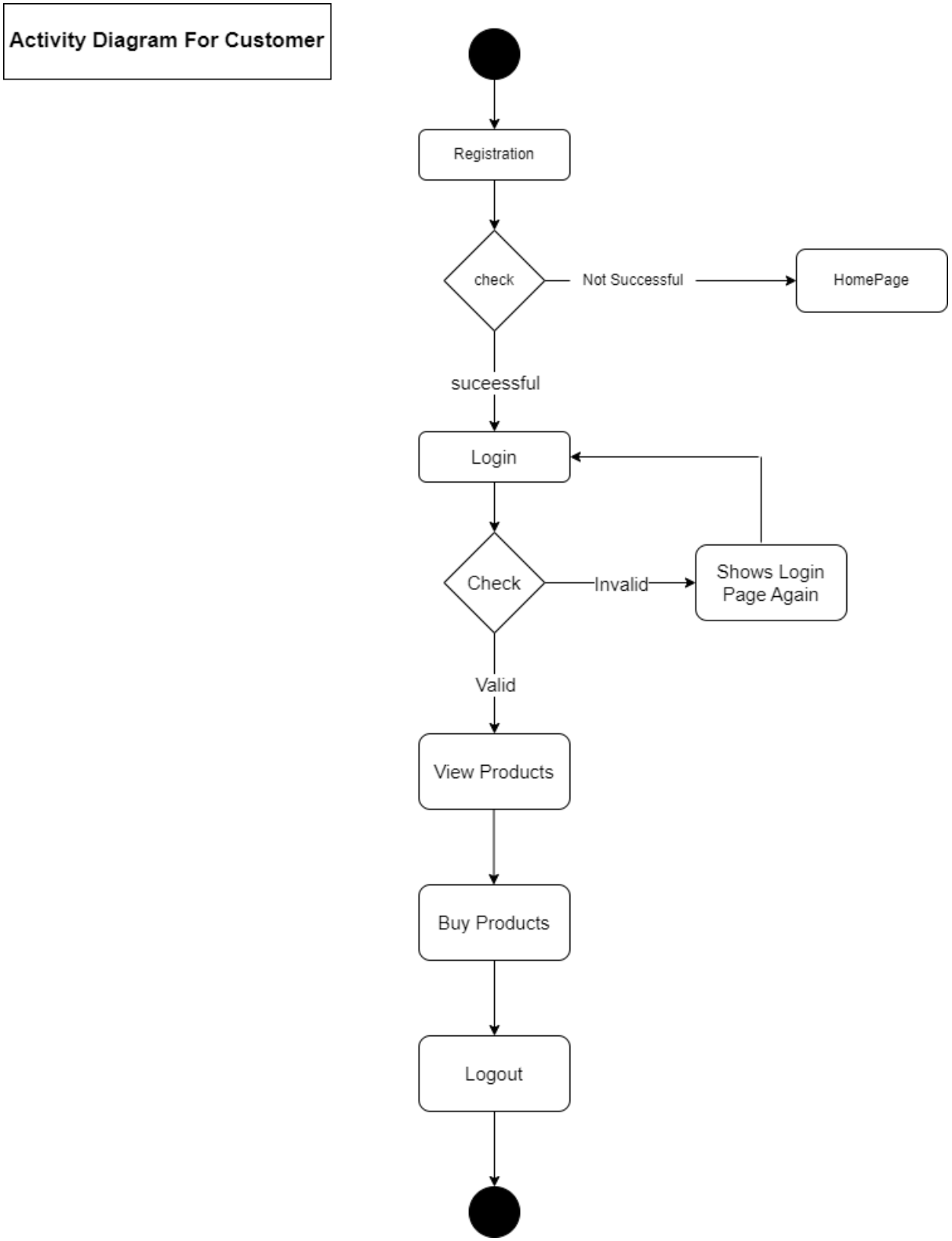


Figure 2 Customer Activity Diagram

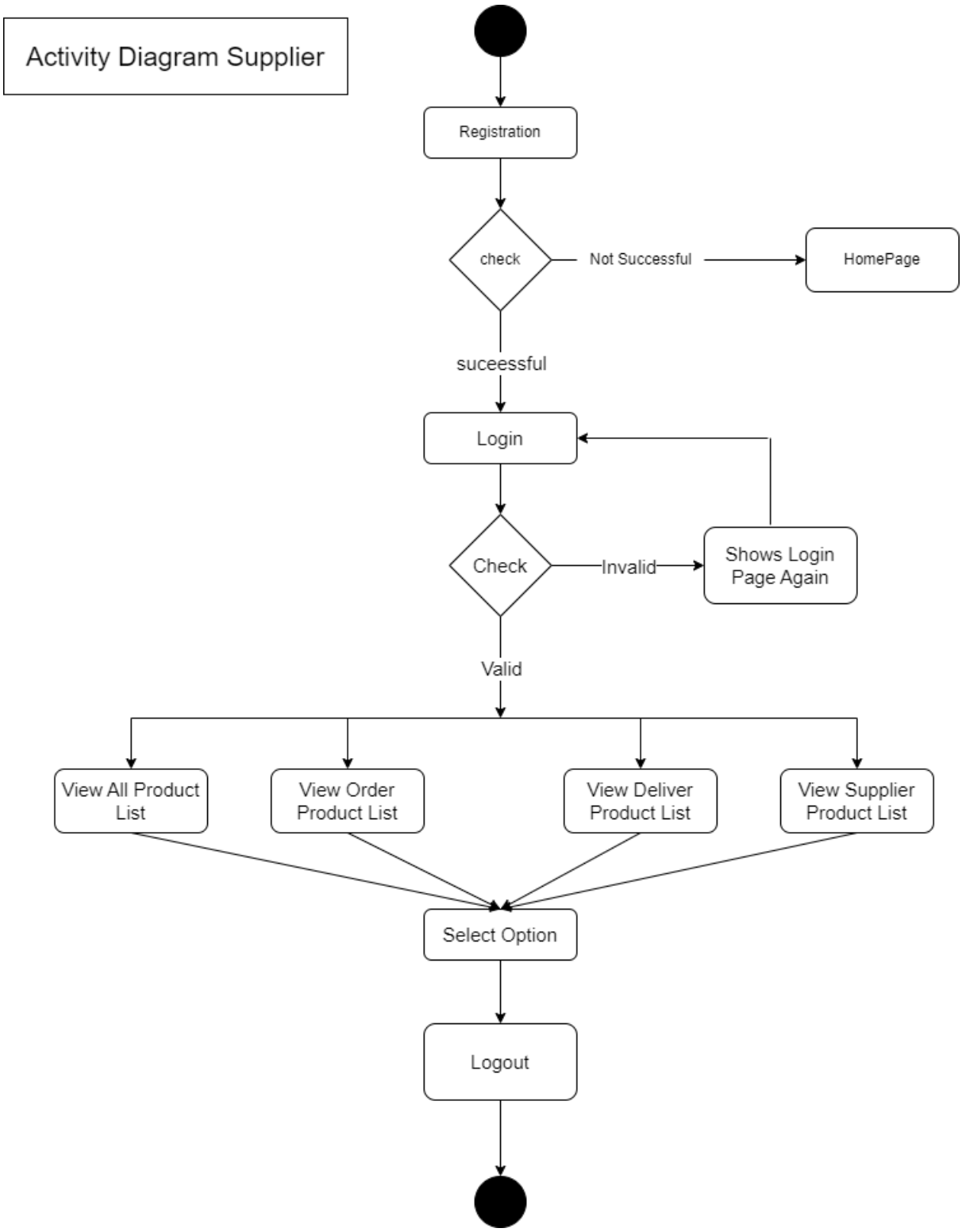


Figure 3 Supplier Activity Diagram

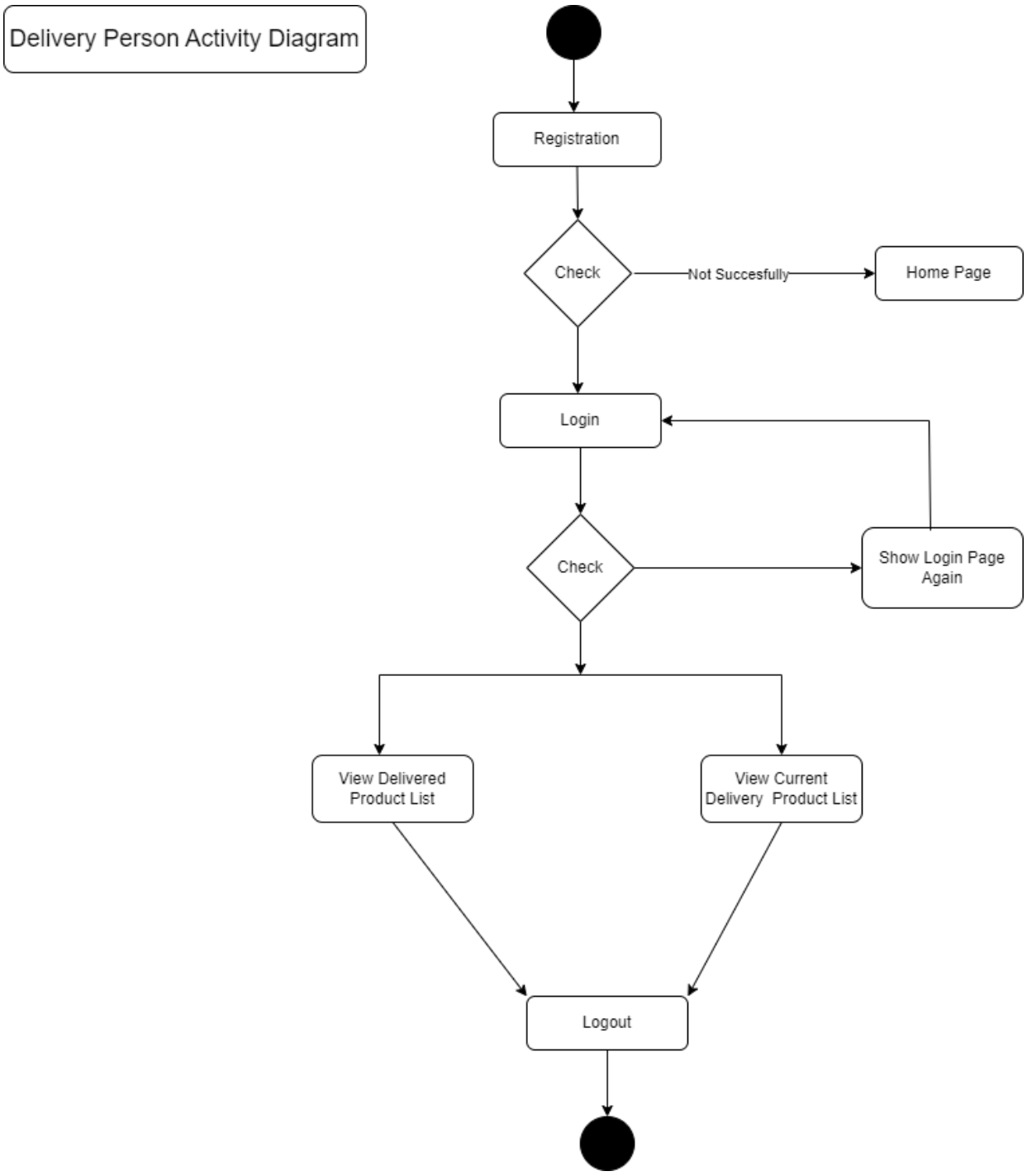


Figure 4 Supplier Activity Diagram

2.System Requirement specification

Title:

System Requirement Specification for E-Spare Part Store

Team:

Admin, Dealer (Distributor), Buyer (Retailer), Delivery Person.

Objective:

E-Spare part Store is an online web application for commercial vehicles spare parts. It is B2B in nature where Retailer can buy spare parts with the help of part number. Distributor will list all theavailable parts and Admin will govern the site operations.

Scope:

- Application has four types of Users. Admin, Dealer, Buyer, Admin & Delivery Person.
- It provides facility for Sign Up & Sign In. After successful Signing In it will take you to the page which is designed for corresponding user.
- Buyer user can search a part, view its details, purchase the product and can keep track of delivery progress.
- Dealer user can add & remove his products, receive orders, prepare & dispatch it.
- Admin user can perform various site governance operations.
- Delivery user will update the delivery progress of products.

Definitions:

- B2B: Business to Business
- Portal: Personalised online web application.
- Dashboard: Personalized information presented using BI techniques such grid, score card, graph, KP

2.2 Functional Requirements:

E-Spare Part Store application consist of 4 types of users:

- Buyer (Retailer)
- Dealer (Distributor)
- Admin
- Delivery Person

Buyer (Retailer): referred as user henceforth in this section.

- User can Sign Up for new account and also reset password of his existing account if he forgot his password.
- User will be authenticated using Sign In. After that information customised for him will be displayed on web page.
- User can search his desired product either by using search tool or looking into categories available on web site. Selected product information will be displayed in detail.
- Cart will be maintained for each session. User can place his final order from cart.
- After successfully placing order User can check delivery progress on website.
- User can update his information provided by him on website.
- User will receive communication from Admin user (Team) related to his account.

Dealer (Distributor): referred as User henceforth in this section.

- User can Sign Up for new account and also reset password of his existing account if he forgot his password.
- User will be authenticated using Sign In. After that information customised for him will be displayed on web page.
- User can add or remove products and also update current stock information about it on web application.
- User can also see orders placed by customers for his products.
- User will able to notify order prepared for delivery on web application
- User will receive communication from Admin user (Team) related to his account.

Admin: referred as User henceforth in this section.

- User can Sign Up for new account and also reset password of his existing account if he forgot his password.
- User will be authenticated using Sign In. After that information customised for him will be displayed on web page.

- User will able to see all Retailers, Distributors and Delivery Persons on his web application dashboard. User can also see their information in detail.
- User (Admin) can take actions against all other three users if he/she found that they are violating business policy of the organisation.
- User add, remove & maintains standard spare part list.
- User can see detailed statistics of business happening on web application.

Delivery Person: referred as User henceforth in this section.

- User can Sign Up for new account and also reset password of his existing account if he forgot his password.
- User will be authenticated using Sign In. After that information customised for him will be displayed on web page.
- User will receive delivery orders for orders placed by customer.
- User will notify once he/she takes product from distributor. Afterword's he will update all information regarding delivery until Retailer receives the product.
- User will receive communication from Admin user (Team) related to his account.

2.3 Non-Functional Requirements:

Security

- Registered Customer only allowed to place an order.
- Each stakeholder will be to access system through authentication process.
- System will be automatically log out for all stakeholders after some time if it is inactive.
- User proper firewall to protect servers from outside fishing, vulnerable attacks.

Reliability

- The system will backup business data on regular basis and recover in short time duration to keep system operational
- Continuous updates are maintained, continuous Administration is done to keep system operational.

Availability

- System will be up and running for 24*7.

Maintainability:

- A Commercial database software will be used to maintain System data Persistence.
- IT operations team will easily monitor and configure System using administrativetools provided by Servers

Durability:

- System will retain customer shopping cart for 15 minutes even though customer looseinternet connection and join again.
- System will implement backup and recovery for retaining stake holder's data,business operation data and business data over time.

Efficiency:

- On peak time, maximum number of users will place order, view products with sameresponse time.
- System will be able to manage all transactions with isolation.

Scalability:

- System will be able to provide consistent user experience to stake holder as well asvisitors irrespective of load.

Safety:

- Online portal functionalities are protected from outside with proper firewallconfiguration.
- Online portal will be always kept updated with latest antivirus software.
- Business data will be backed up periodically to ensure safety of data usingincremental back up strategy.

3. SYSTEM DESIGN

System design is the solution for the creation of a new system. This phase focuses on the detailed implementation of the feasible system. Its emphasis on translating design. Specifications to performance specification. System design has two phases of development.

- Logical Design
- Physical Design

During logical design phase the analyst describes inputs (sources), outputs(destinations), databases (data stores) and procedures (data flows) all in a format that meets the user requirements. The analyst also specifies the needs of the user at a level that virtually determines the information flow in and out of the system and the data resources. Here the logical design is done through data flow diagrams and database design. The physical design is followed by physical design or coding. Physical design produces the working system by defining the design specifications, which specify exactly what the candidate system must do. The programmers write the necessary programs that accept input from the user, perform necessary processing on accepted data and produce the required report on a hard copy or display it on the screen.

3.1 INPUT AND OUTPUT DESIGN

3.1.1 INPUT DESIGN:

Input design is the link that ties the information system into the world of its users. The input design involves determining the inputs, validating the data, minimizing the data entry and provides a multi-user facility. Inaccurate inputs are the most common cause of errors in data processing. Errors entered by the data entry operators can be controlled by input design. The user-originated inputs are converted to a computer-based format in the input design. Input data are collected and organized into groups of similar data. Once identified, the appropriate input media are selected for processing. All the input data are validated and if any data violates any conditions, the user is warned by a message. If the data satisfies all the conditions, it is transferred to the appropriate tables in the database. In this project the student details are to be entered at the time of registration. A page is designed for this purpose which is user friendly and easy to use. The design is done such that users get appropriate messages when exceptions occur.

3.1.2 OUTPUT DESIGN:

Computer output is the most important and direct source of information to the user. Output design is a very important phase since the output needs to be in an efficient manner. Efficient and intelligible output design improves the system relationship with the user and helps in decision making. Allowing the user to view the sample screen is important because the user is the ultimate judge of the quality of output. The output module of this system is the selected notifications.

DATABASE DESIGN

3.2 DATABASE

Databases are the storehouses of data used in the software systems. The data is stored in tables inside the database. Several tables are created for the manipulation of the data for the system. Two essential settings for a database are

▪ Primary key - the field that is unique for all the record occurrences

▪ Foreign key - the field used to set relation between tables Normalization is a technique to avoid redundancy in the tables.

3.3 SYSTEM TOOLS

The various system tools that have been used in developing both the front end and the back end of the project are being discussed in this chapter.

3.3.1 FRONT END:

React is a library which is developed by Facebook are utilized to implement the frontend. React (also known as React.js or ReactJS) is a free and open-source front-end JavaScript library for building user interfaces or UI components. It is maintained by Facebook and a community of individual developers and companies. React can be used as a base in the development of single page or mobile applications. However, React is only concerned with state management and rendering that state to the DOM, so creating React applications usually requires the use of additional libraries for routing, as well as certain client-side functionality.

3.3.2 BACKEND:

Spring-Boot:

This is used to connect MYSQL and fetch data from database and store the data in database. The Spring Framework is an application framework and inversion of control container for the Java platform. The framework's core features can be used by any Java application, but there are extensions for building web applications on top of the Java EE (Enterprise Edition) platform. Although the framework does not impose any specific programming model, it has become popular in the Java community as an addition to the Enterprise JavaBeans (EJB) model. The Spring Framework is Open-source Framework.

3.3.3 Database:

MySQL is used to design databases.

MySQL:
MySQL is the world's second most widely used open-source relational database management system (RDBMS). The SQL phrase stands for Structured Query Language.

DFD Diagrams:

1 LEVEL DFD FOR ADMIN

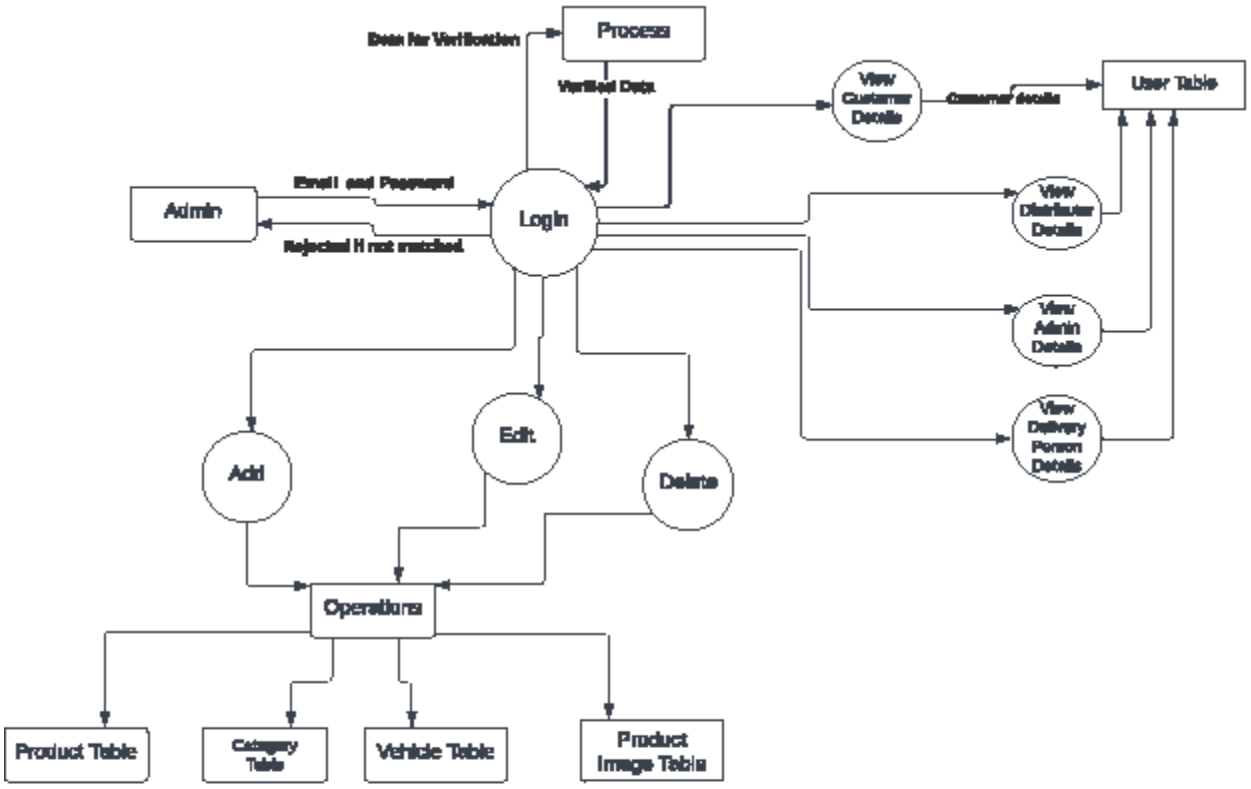


Figure 5 Admin DFD Diagram

1 LEVEL DFD FOR CUSTOMER

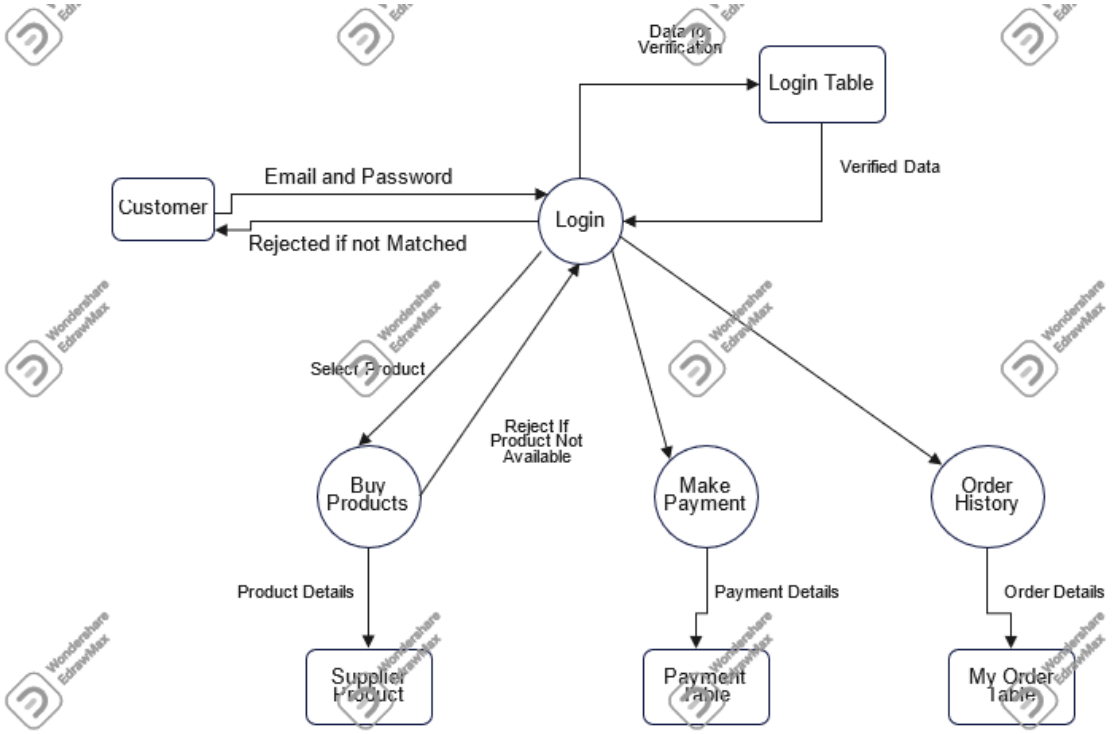


Figure 6 Customer DFD Diagram

1 LEVEL DFD FOR SUPPLIER

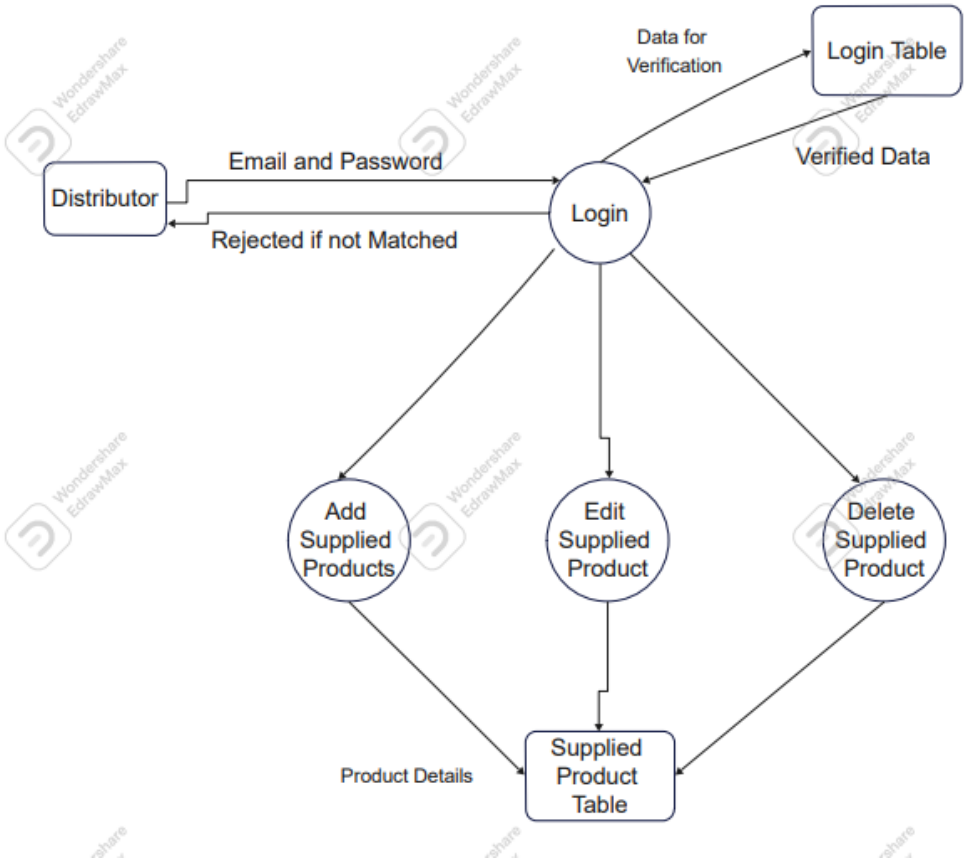


Figure 7 Supplier DFD Diagram

1 LEVEL DFD FOR SUPPLIER

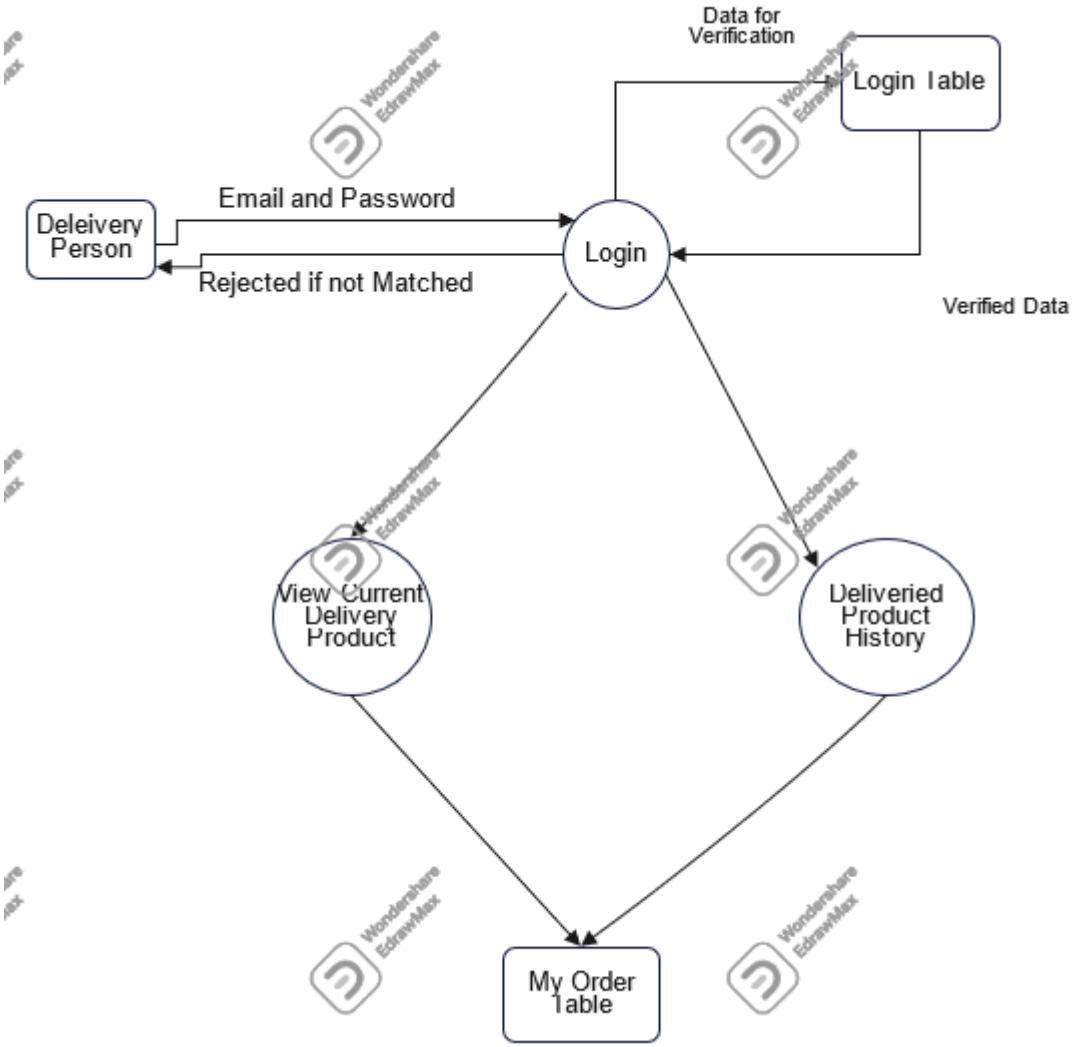


Figure 8 Delivery Person DFD Diagram

Use Case Diagram

1.Admin

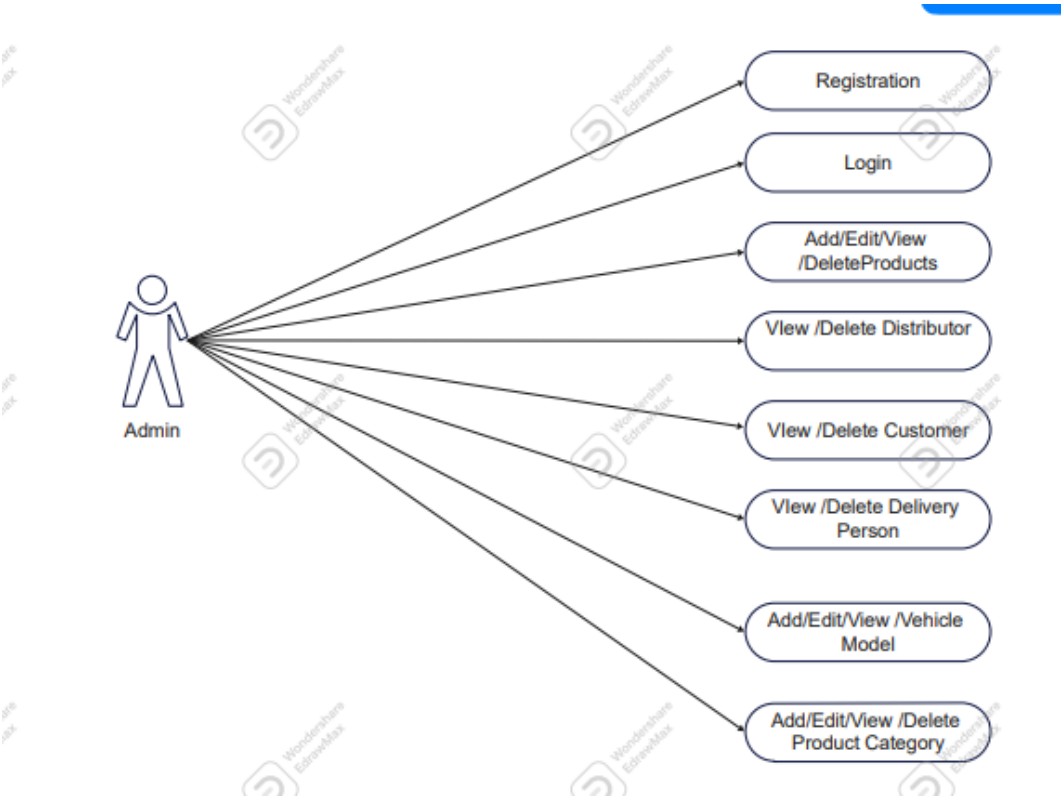


Figure 9 Admin Use Case Diagram

2.Customer:

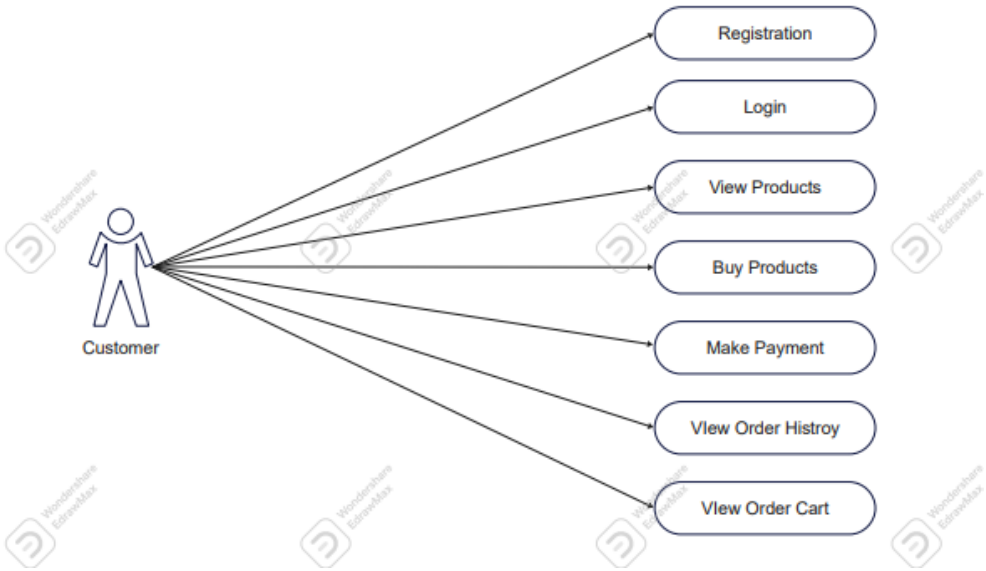


Figure 10 Customer Use Case Diagram

3.DISTRIBUTOR:

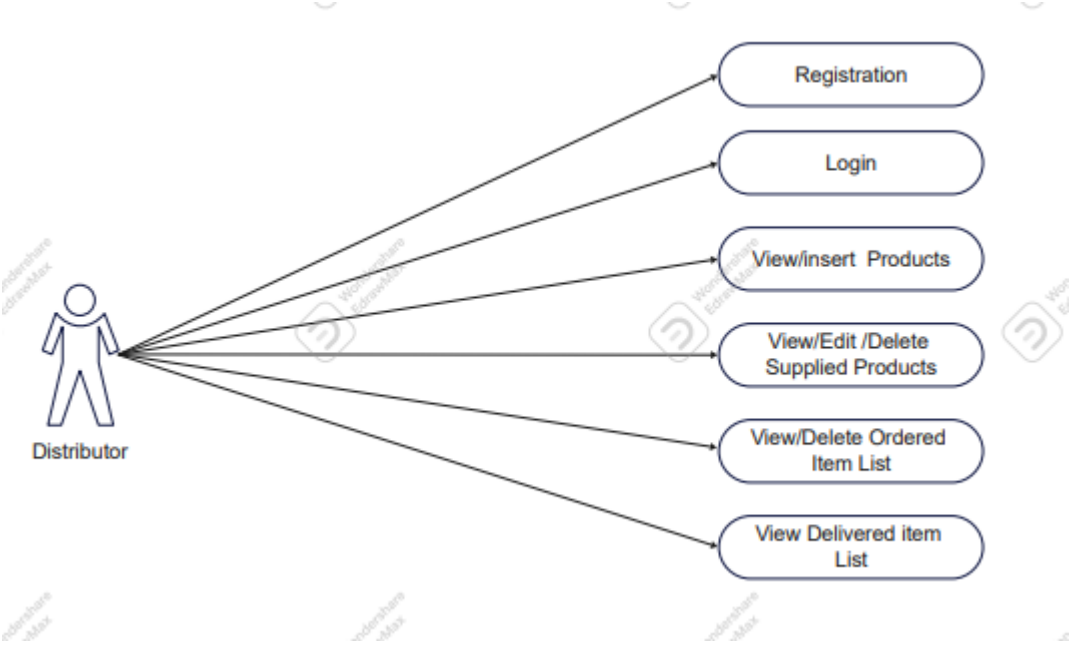


Figure 11 Supplier Use Case Diagram

4.Delivery Person:

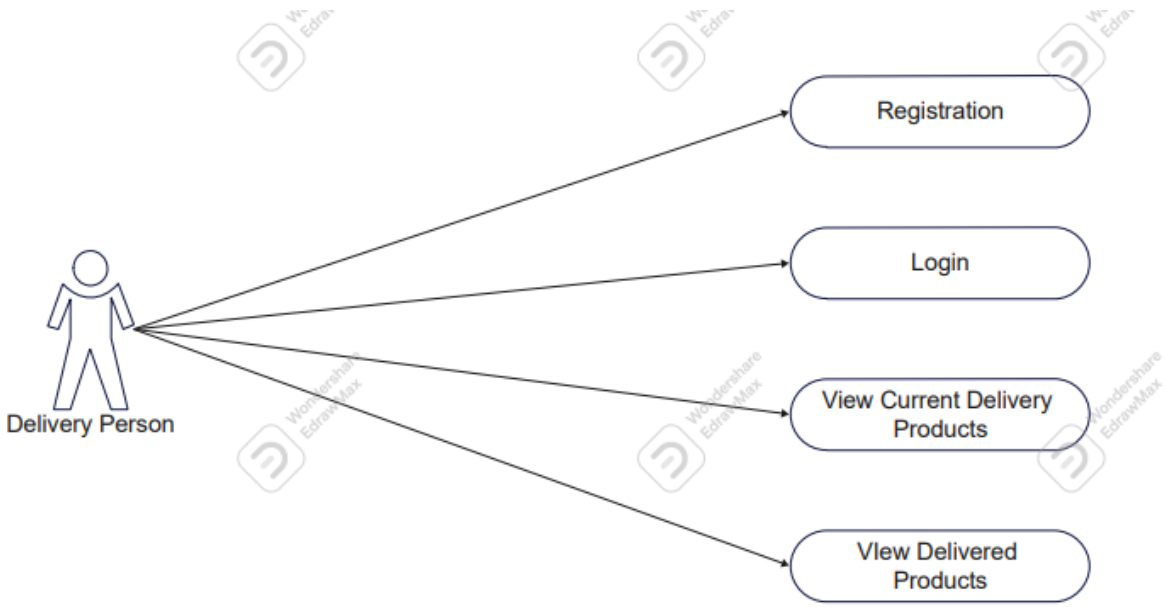


Figure 11 Delivery Person Use Case Diagram

E-R Diagram:

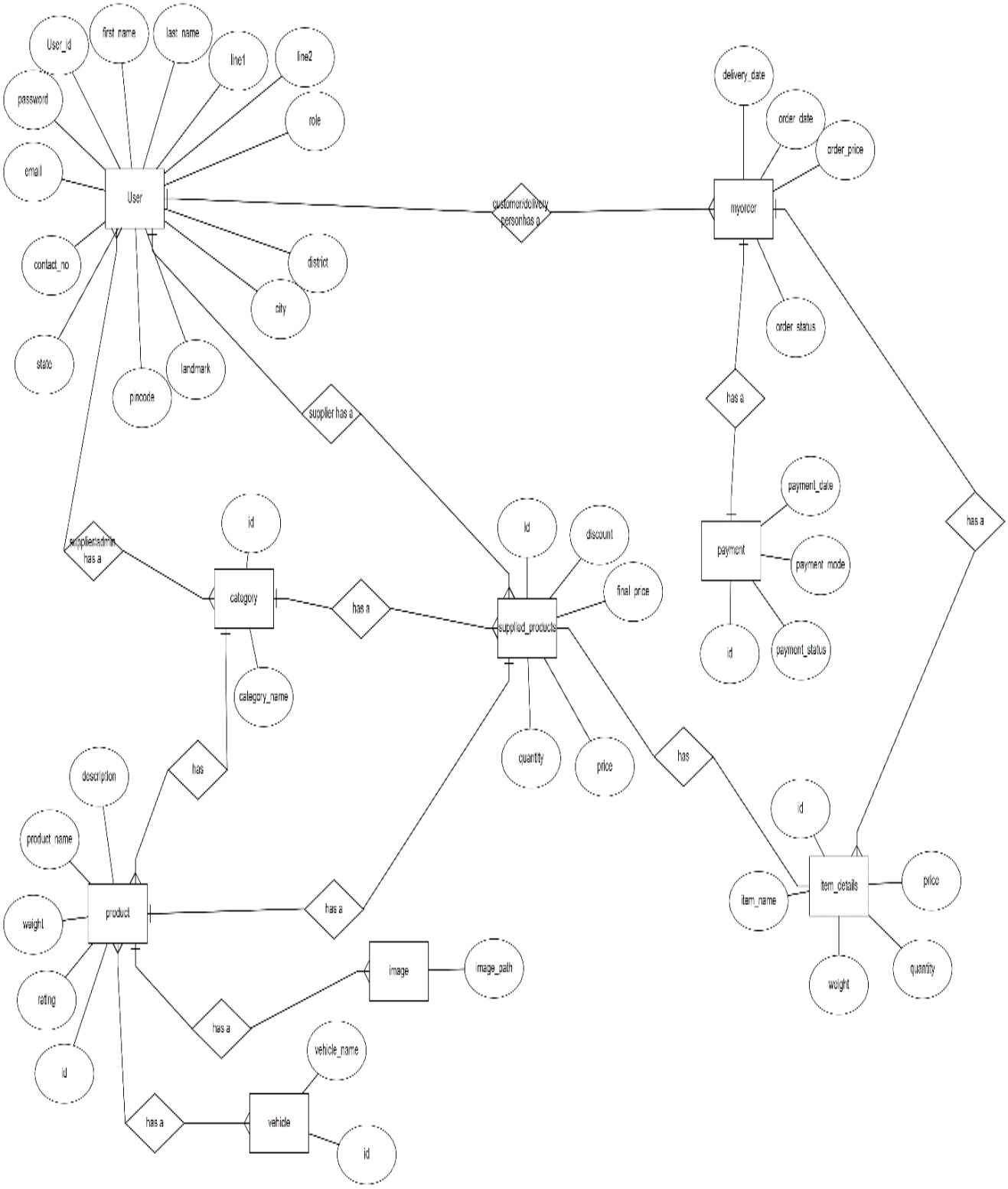


Figure12 ER Diagram

E-R Diagram:

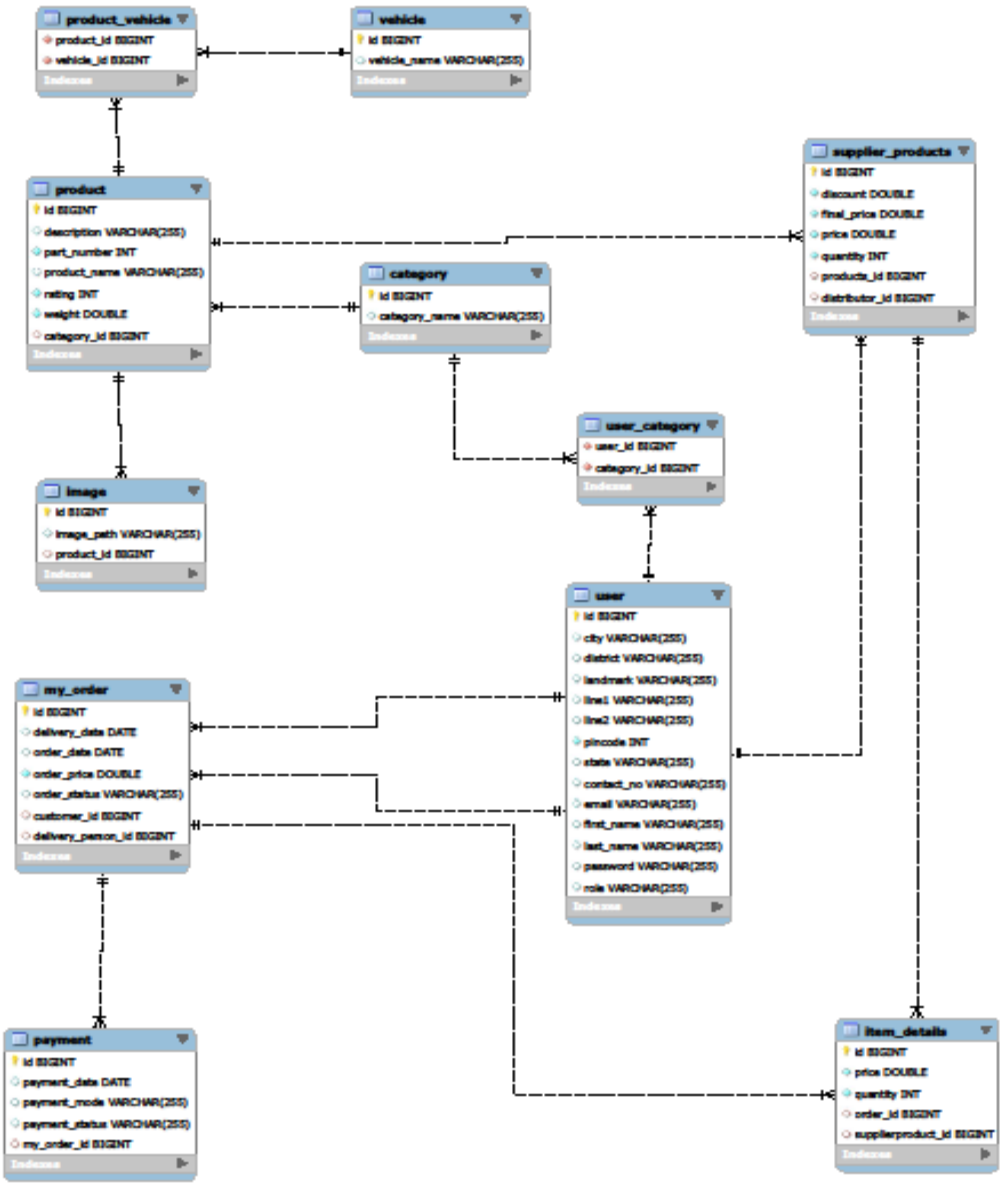
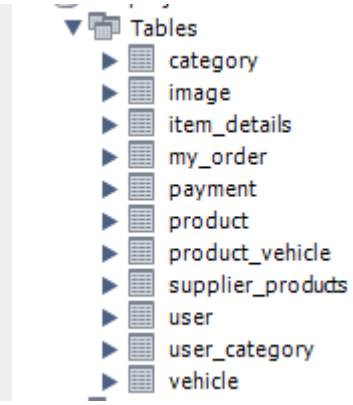


Figure 13 ER Diagram(MY Sql Genrated)

TABLE STRUCTURE:

Tables:



Category:

Field	Type	Null	Key	Default	Extra
id	bigint	NO	PRI	NULL	auto_increment
category_name	varchar(255)	YES		NULL	

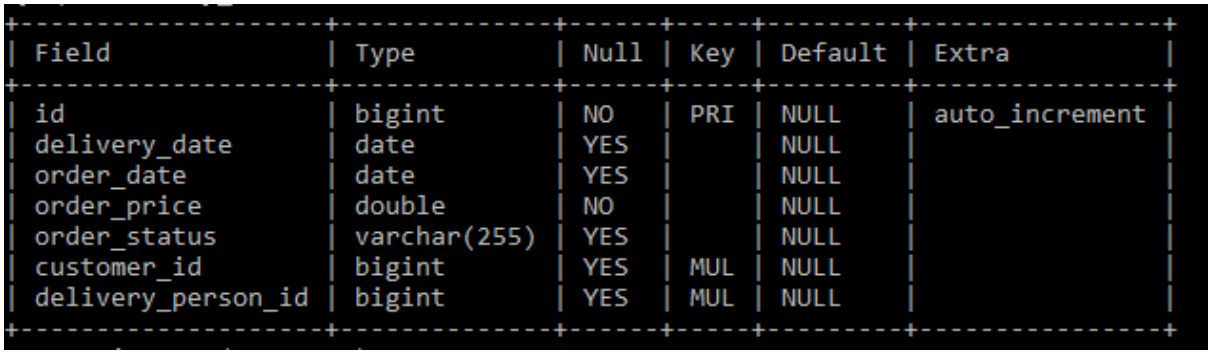
Image:

Field	Type	Null	Key	Default	Extra
id	bigint	NO	PRI	NULL	auto_increment
image_path	varchar(255)	YES		NULL	
product_id	bigint	YES	MUL	NULL	

Item details:

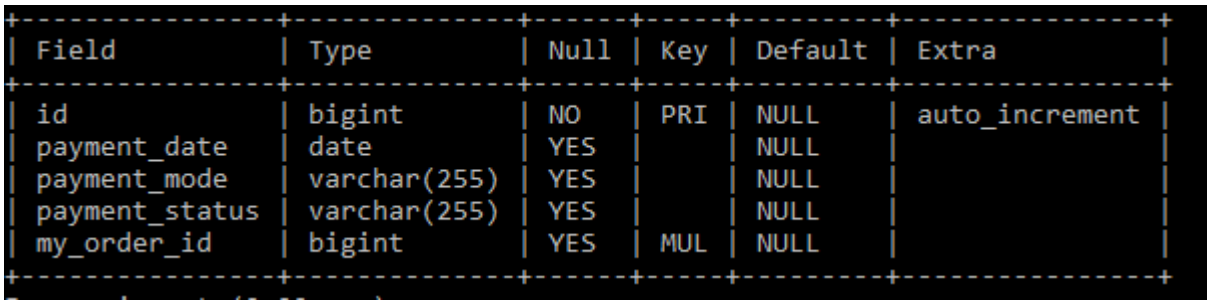
Field	Type	Null	Key	Default	Extra
id	bigint	NO	PRI	NULL	auto_increment
price	double	NO		NULL	
quantity	int	NO		NULL	
order_id	bigint	YES	MUL	NULL	
supplierproduct_id	bigint	YES	MUL	NULL	

My Order:



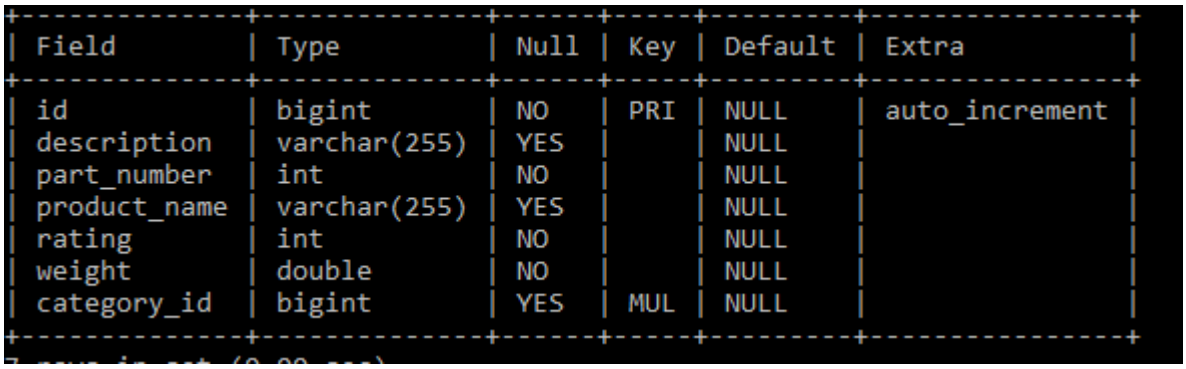
Field	Type	Null	Key	Default	Extra
id	bigint	NO	PRI	NULL	auto_increment
delivery_date	date	YES		NULL	
order_date	date	YES		NULL	
order_price	double	NO		NULL	
order_status	varchar(255)	YES		NULL	
customer_id	bigint	YES	MUL	NULL	
delivery_person_id	bigint	YES	MUL	NULL	

Payment:



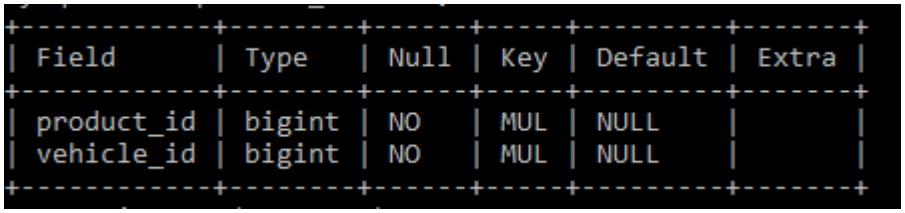
Field	Type	Null	Key	Default	Extra
id	bigint	NO	PRI	NULL	auto_increment
payment_date	date	YES		NULL	
payment_mode	varchar(255)	YES		NULL	
payment_status	varchar(255)	YES		NULL	
my_order_id	bigint	YES	MUL	NULL	

Product:



Field	Type	Null	Key	Default	Extra
id	bigint	NO	PRI	NULL	auto_increment
description	varchar(255)	YES		NULL	
part_number	int	NO		NULL	
product_name	varchar(255)	YES		NULL	
rating	int	NO		NULL	
weight	double	NO		NULL	
category_id	bigint	YES	MUL	NULL	

Product Vehicle:



Field	Type	Null	Key	Default	Extra
product_id	bigint	NO	MUL	NULL	
vehicle_id	bigint	NO	MUL	NULL	

Supplier Products:

Field	Type	Null	Key	Default	Extra
id	bigint	NO	PRI	NULL	auto_increment
discount	double	NO		NULL	
final_price	double	NO		NULL	
price	double	NO		NULL	
quantity	int	NO		NULL	
distributor_id	bigint	YES	MUL	NULL	
products_id	bigint	YES	MUL	NULL	

User:

Field	Type	Null	Key	Default	Extra
id	bigint	NO	PRI	NULL	auto_increment
city	varchar(255)	YES		NULL	
district	varchar(255)	YES		NULL	
landmark	varchar(255)	YES		NULL	
line1	varchar(255)	YES		NULL	
line2	varchar(255)	YES		NULL	
pincode	int	NO		NULL	
state	varchar(255)	YES		NULL	
contact_no	varchar(255)	YES		NULL	
email	varchar(255)	YES		NULL	
first_name	varchar(255)	YES		NULL	
last_name	varchar(255)	YES		NULL	
password	varchar(255)	YES		NULL	
role	varchar(255)	YES		NULL	

User Category:

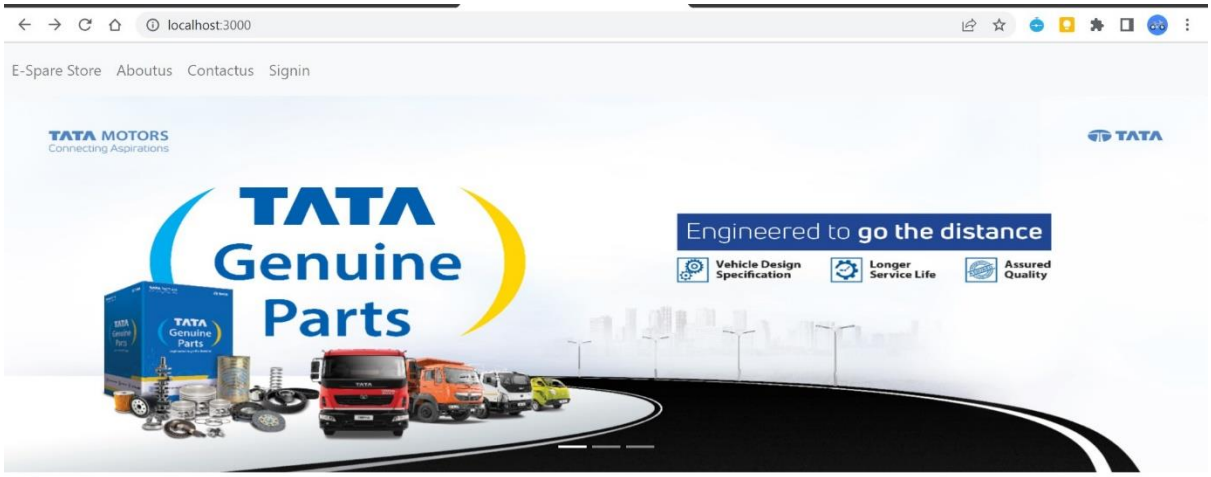
Field	Type	Null	Key	Default	Extra
user_id	bigint	NO	MUL	NULL	
category_id	bigint	NO	MUL	NULL	

Vehicle:

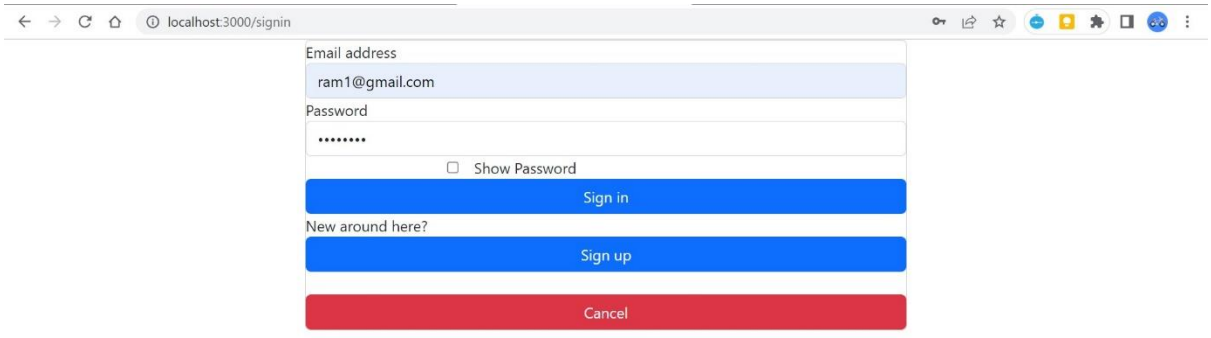
Field	Type	Null	Key	Default	Extra
id	bigint	NO	PRI	NULL	auto_increment
vehicle_name	varchar(255)	YES		NULL	

Screenshots:

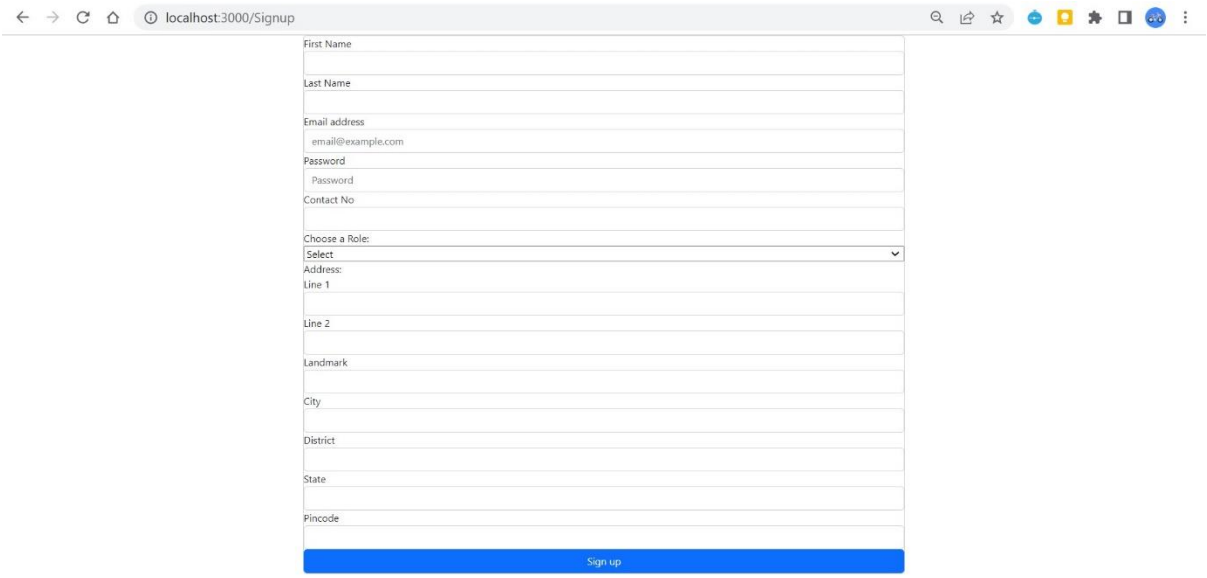
Homepage



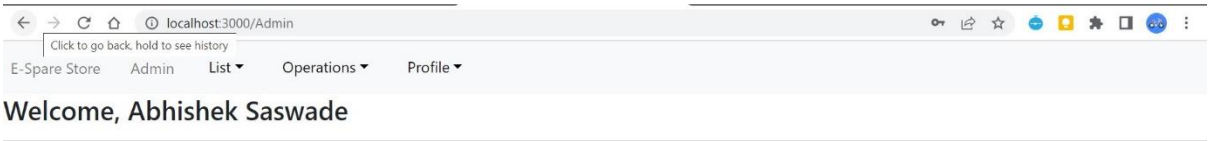
Sign In



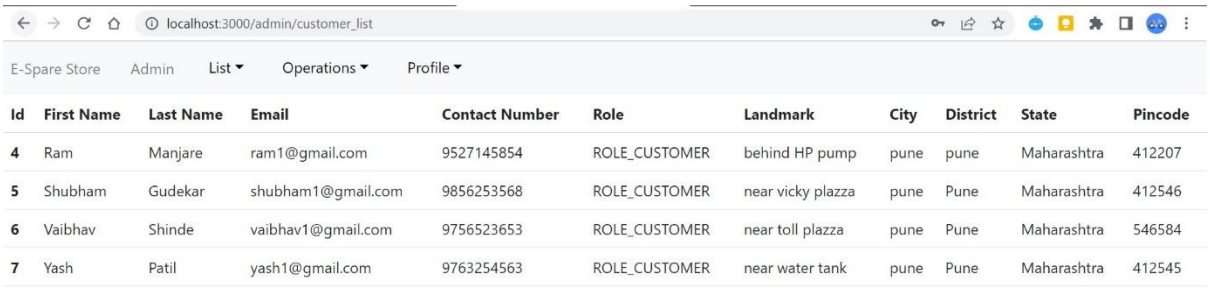
Sign up



Admin Homepage



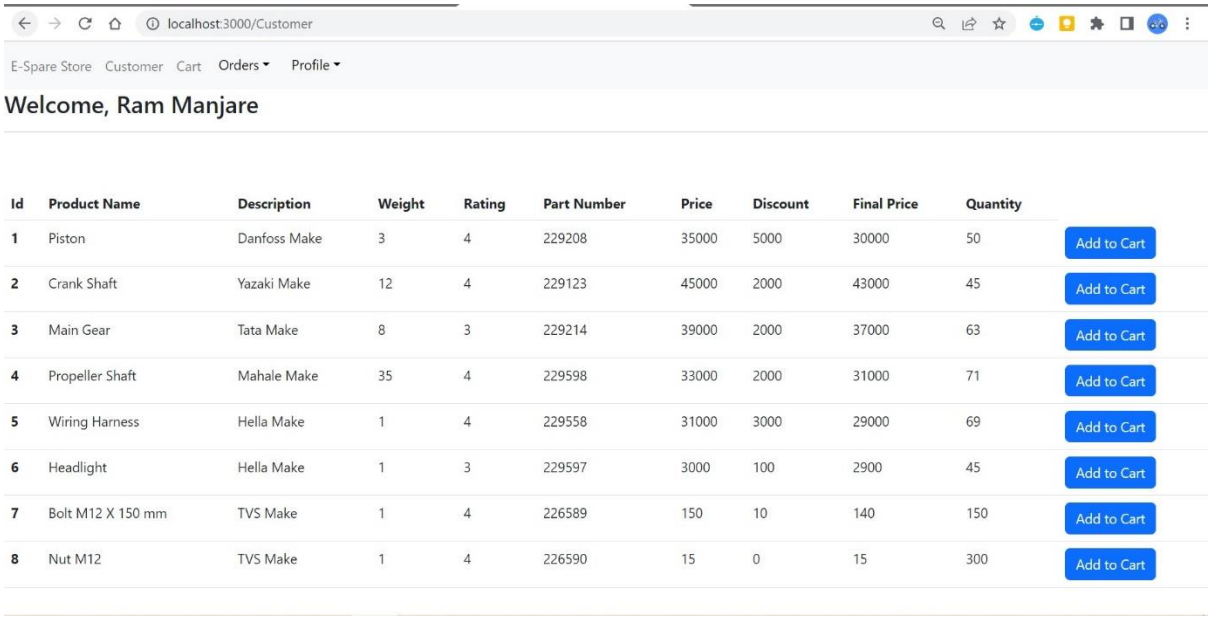
Admin list display



Id	First Name	Last Name	Email	Contact Number	Role	Landmark	City	District	State	Pincode
4	Ram	Manjare	ram1@gmail.com	9527145854	ROLE_CUSTOMER	behind HP pump	pune	pune	Maharashtra	412207
5	Shubham	Gudekar	shubham1@gmail.com	9856253568	ROLE_CUSTOMER	near vicky plazza	pune	Pune	Maharashtra	412546
6	Vaibhav	Shinde	vaibhav1@gmail.com	9756523653	ROLE_CUSTOMER	near toll plazza	pune	Pune	Maharashtra	546584
7	Yash	Patil	yash1@gmail.com	9763254563	ROLE_CUSTOMER	near water tank	pune	Pune	Maharashtra	412545

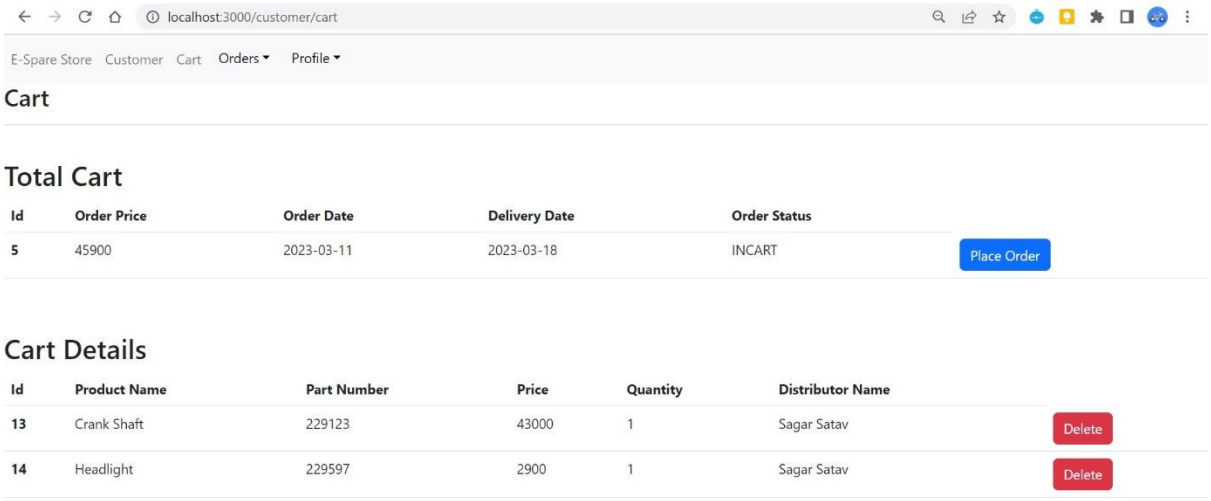
Sign Out

Customer Homepage



Id	Product Name	Description	Weight	Rating	Part Number	Price	Discount	Final Price	Quantity	
1	Piston	Danfoss Make	3	4	229208	35000	5000	30000	50	Add to Cart
2	Crank Shaft	Yazaki Make	12	4	229123	45000	2000	43000	45	Add to Cart
3	Main Gear	Tata Make	8	3	229214	39000	2000	37000	63	Add to Cart
4	Propeller Shaft	Mahale Make	35	4	229598	33000	2000	31000	71	Add to Cart
5	Wiring Harness	Hella Make	1	4	229558	31000	3000	29000	69	Add to Cart
6	Headlight	Hella Make	1	3	229597	3000	100	2900	45	Add to Cart
7	Bolt M12 X 150 mm	TVS Make	1	4	226589	150	10	140	150	Add to Cart
8	Nut M12	TVS Make	1	4	226590	15	0	15	300	Add to Cart

Customer Cart

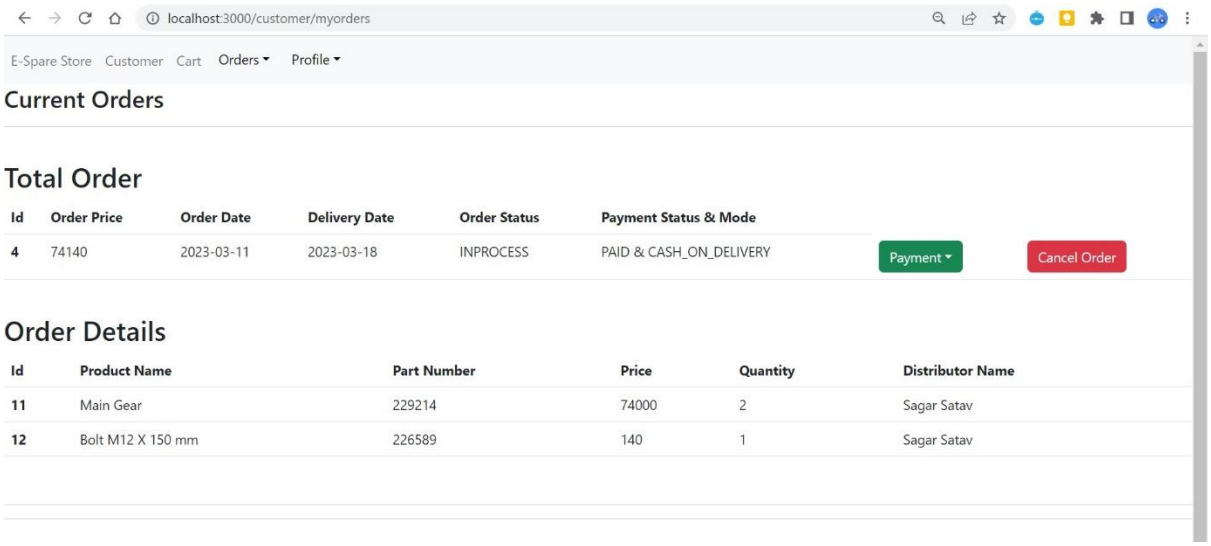


Id	Order Price	Order Date	Delivery Date	Order Status	
5	45900	2023-03-11	2023-03-18	INCART	Place Order

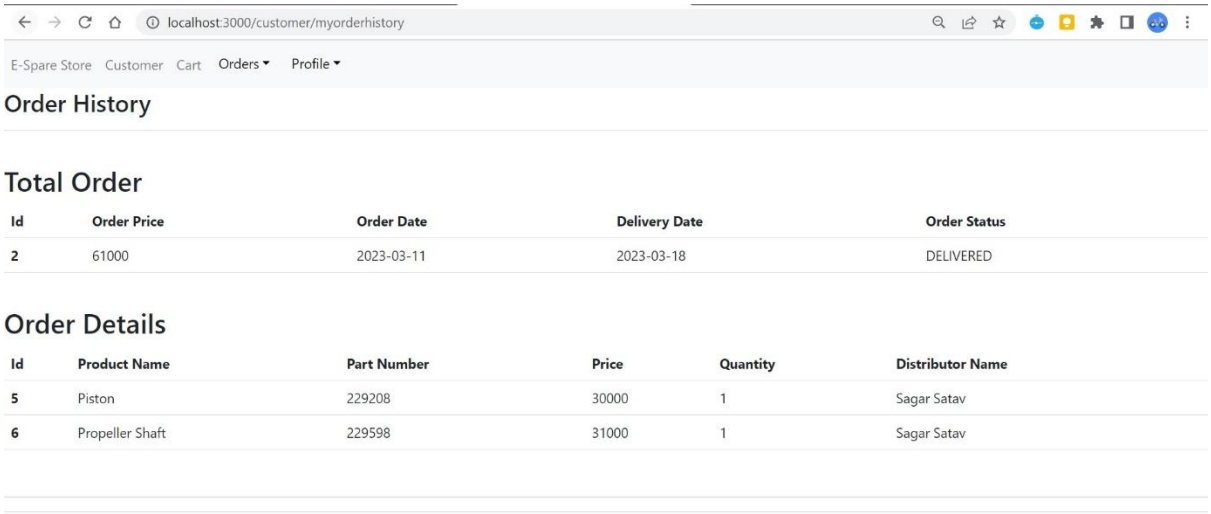
Cart Details

Id	Product Name	Part Number	Price	Quantity	Distributor Name	
13	Crank Shaft	229123	43000	1	Sagar Satav	Delete
14	Headlight	229597	2900	1	Sagar Satav	Delete

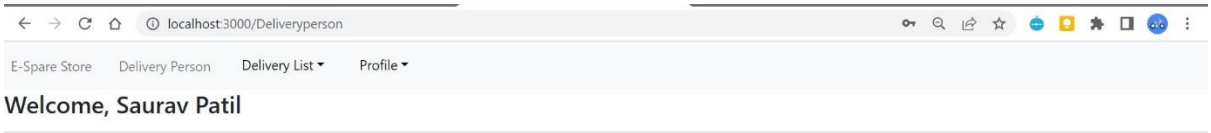
Current orders



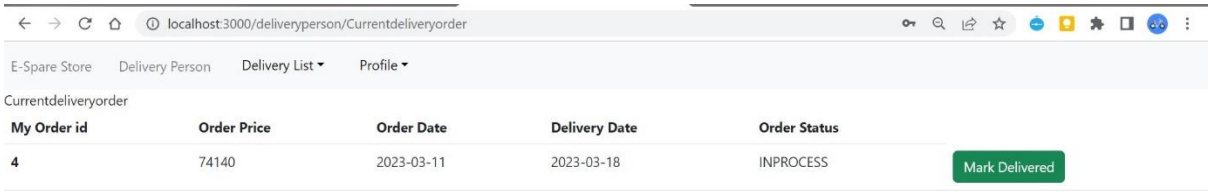
Order History



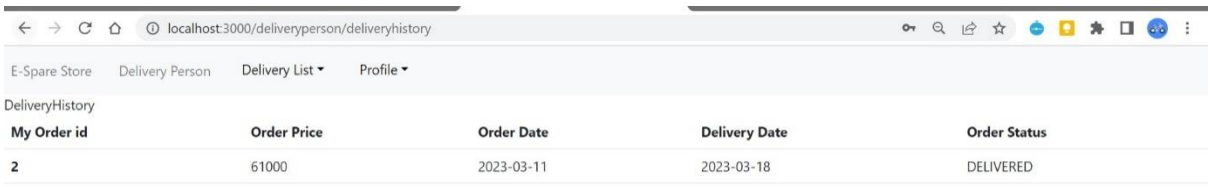
Delivery Person Homepage



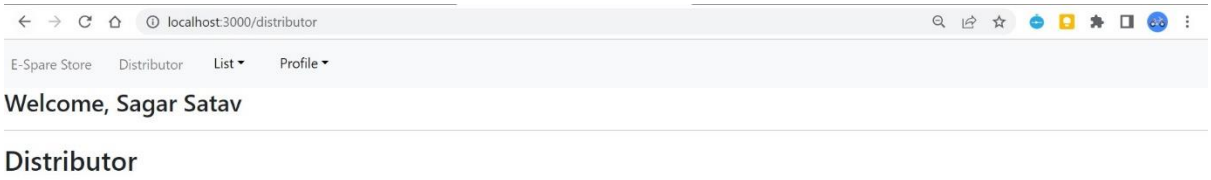
Current orders waiting for delivery



Order Delivered



Distributor Homepage



Future Scope:

- Association with Google maps
- Discount /offer management
- Billing

Conclusion:

The project titled **e-Spare part shop** was completed successfully.
The system has been developed with much care and free of errors and at the same time it is efficient and less time consuming. The purpose of this project was to develop a web application.
This project helped us in gaining valuable information and practical knowledge on several topics like designing web pages using React.js, usage of responsive templates and management of database using MySQL. The entire system is secured.

Also, the project helped us understanding about the development phases of a project and software development life cycle. We learned how to test different features of a project.
This project has given us great satisfaction in having designed an application which can be implemented to any nearby shops or branded shops selling various kinds of products by simple modifications.
There is a scope for further development in our project to a great extent. A number of features can be added to this system in future like providing admins more control over products so that each admin can maintain their own products. System may keep track of history of purchases of each customer and provide suggestions based on their history.
These features could have implemented unless the time did not limit us.

References:

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- **https://react-bootstrap.github.io/components/carousel/**
- **https://www.geeksforgeeks.org/reactjs-tutorials/**
- **https://javaee.github.io/javaee-spec/javadocs/**
- **https://reactjs.org/docs/getting-started.html**