CS6106 – DATABASE MANAGEMENT SYSTEMS

PROJECT REPORT

Market Manager - Shop Management System

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I. ABSTRACT

The Shop Management System is a wholistic web-based application that simplifies the processes of management of product, customer and supplier data. HTML, CSS, JavaScript, PHP and MySQL have been used to create a user-friendly platform that can satisfy all management needs. This project aims to provide an intuitive experience that users can make use of without the need for professional assistance. Users can easily view and manipulate their supplier, customer, product data, view insights and generate bills for purchases.

PHP has been used in this project to handle backend operations, while MySQL is the environment we have used for creation and maintenance of the database and its relation. Foreign constraints have been used to maintain integrity of data. PHP enables to dynamically retrieve data and display, which ensures that users always get accurate and the most up to date information.

HTML has been used to create the structure of our webpages, while CSS and JavaScript have been employed to enhance the visual appeal and improve the ease of access of our webpages. Useful buttons have been added to make navigation through our webpages simple. Visual cues have been added to ensure users have a hassle-free experience.

The Shop Management System helps users to access and manipulate all their data. It offers great flexibility and enables users to make inferences and conclusions. Additionally, users can also store information about their business, enabling personalization.

Overall, our Shop Management System project aims to offer an intuitive, user-friendly means of managing shop data. By making use of MySQL, PHP, HTML, CSS and JavaScript, our project offers users a clean experience with great accessibility and flexibility. With our well-defined database and its meaningful relations, our project aims to satisfy all the management needs of business owners to the fullest.

II. OBJECTIVES

The primary objective of our Shop Management System is eliminating the use of manual processes and inefficient systems for managing retail information in businesses. The system incorporates MySQL to store and manage business related information such as products, available stocks, supplier and customer information.

We aim to provide a user-friendly interface that does not need professional assistance. Our intuitive design allows users to understand and effectively use our software after familiarising with it for a short period of time. Add, delete, update and list operations have been implemented effectively with an easy-to-use interface.

Secondly, our database architecture has well defined relations with foreign key constraints. This ensures that the integrity of our data is upheld. The foreign key constraints also ensure that no meaningless relations and data are inserted. We have also defined meaningful attributes to all our entities so that appropriate, relevant and useful data can be stored.

Another aspect we have focussed on is billing for both wholesale and retail purchases. A bill is generated during purchase with all the relevant information such as product name, quantity, price, tax to ensure customers have complete clarity and transparency in their purchases. Functionality to print the bill generated has also been added.

Features:

1) User login/dashboard
2) Navigation bar for all pages
3) Add products, suppliers and customers
4) View products, suppliers and customers
5) Generate bills for purchases

III. ENVIRONMENTAL SUPPORT

1. **HTML:**

   HTML has been used to create the structure of our webpages. HTML forms have been used to get inputs and tables have been used extensively to display information.

2. **CSS:**

   CSS has been employed to increase the visual appeal of our web pages. Hover effects and colour schemes have been added for visual feedback.

3. **JavaScript:**

   JavaScript has been employed for email and password validation, alerts and animations.

4. **PHP:**

   PHP has been used to create our relations. It serves as a link between frontend and backend. It has also been employed to dynamically construct SQL queries for retrieval and display of data.

5. **MySQL:**

   MySQL has been used for creation and storage of our database. Foreign key constraints have been implemented for relations between tables.

IV. IMPLEMENTATION

a. Sign-Up:

New user details are stored in database for future reference and logins. Data is stored in the "signup" table

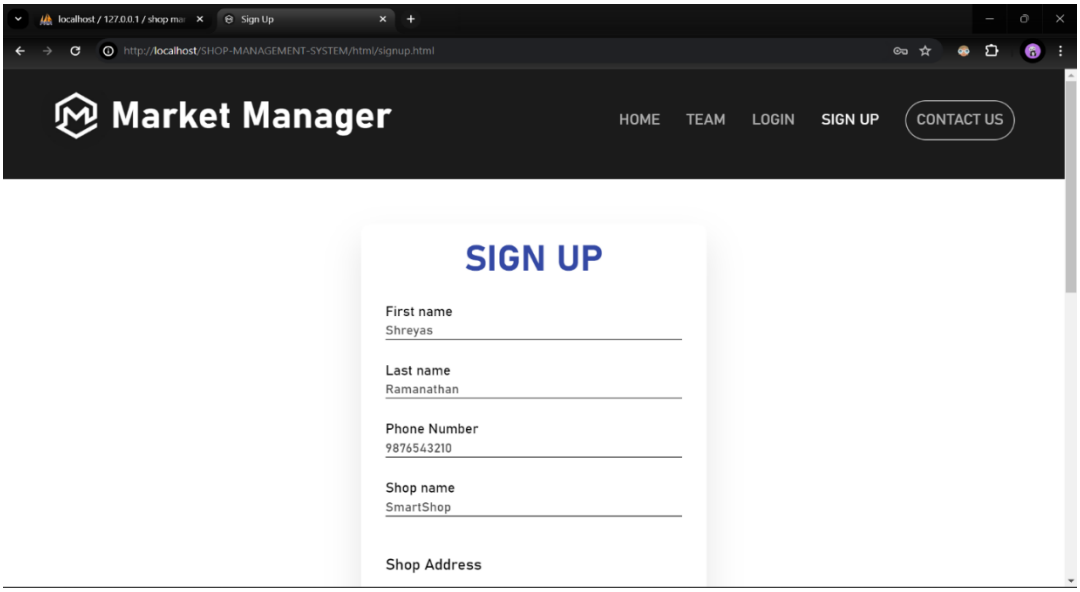


Figure 1.1: Sign up page with form validation using JavaScript

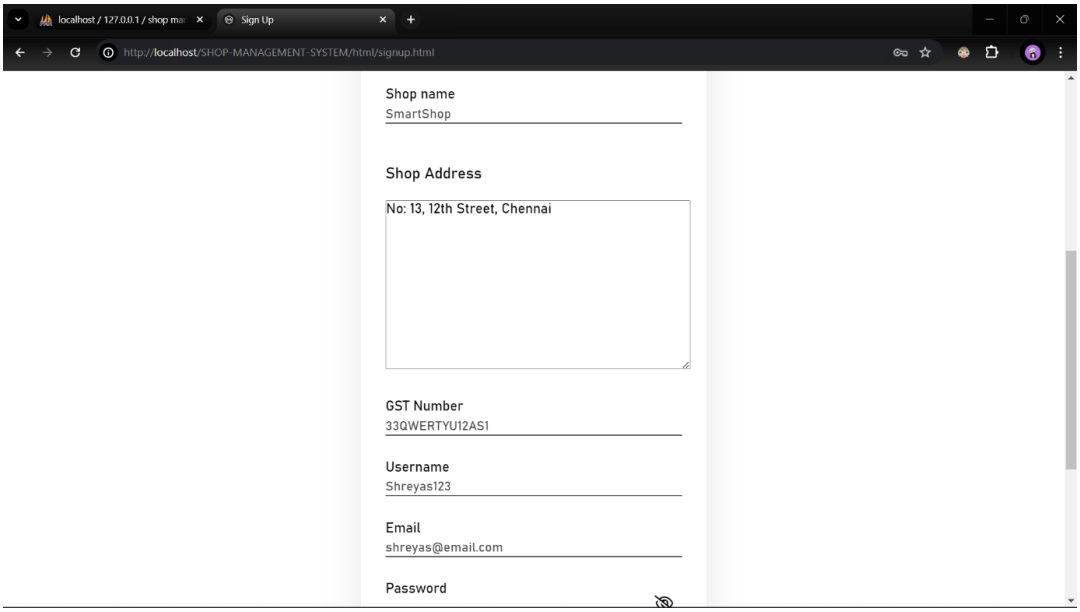


Figure 1.2: Sign up page with form validation using JavaScript

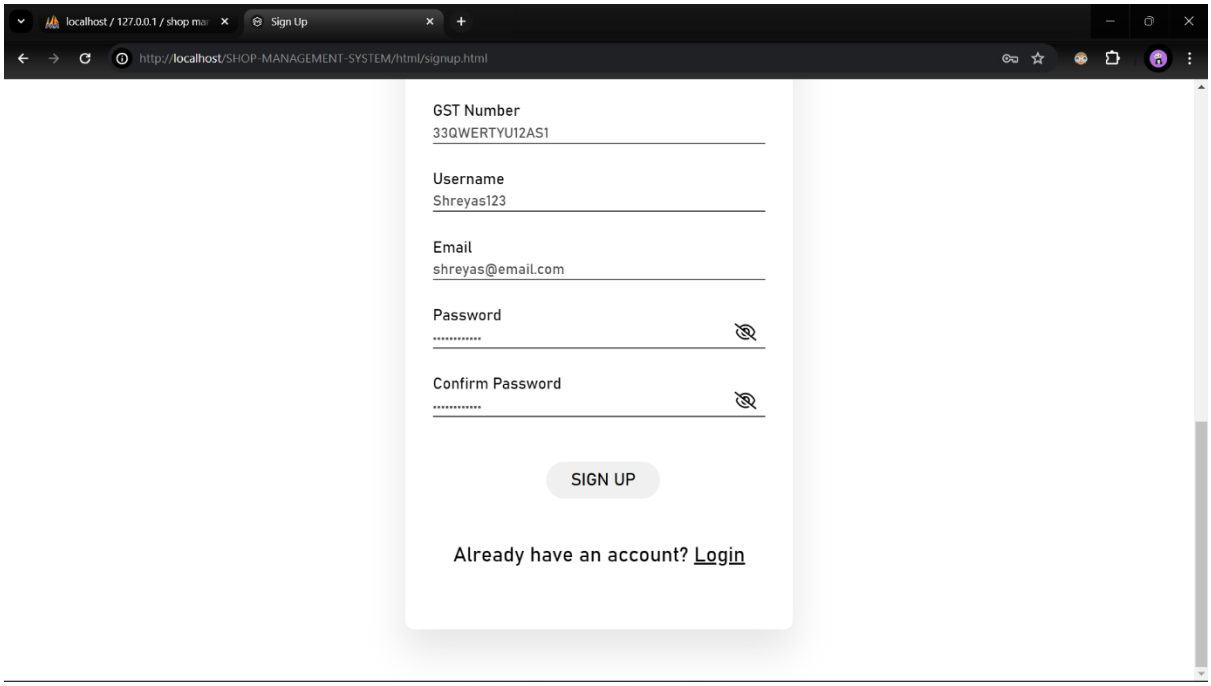


Figure 1.3: Sign up page with form validation using JavaScript

b. Login:

This consists of the login page, which serves as a gateway to enter the shop's website. Users can either log in or sign up if they don't have an account.

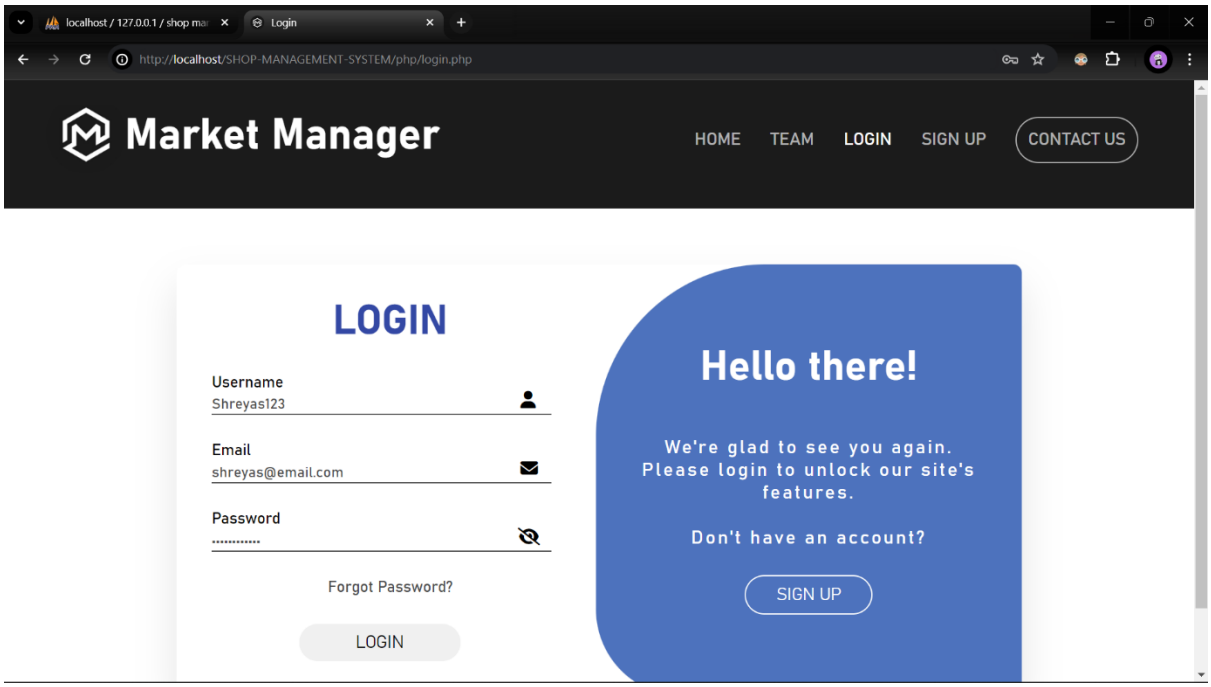


Figure 2: Login page; all the input fields are validated using PHP

c. Dashboard:

After logging in, it shows the list of links to different pages for performing a variety of operations.

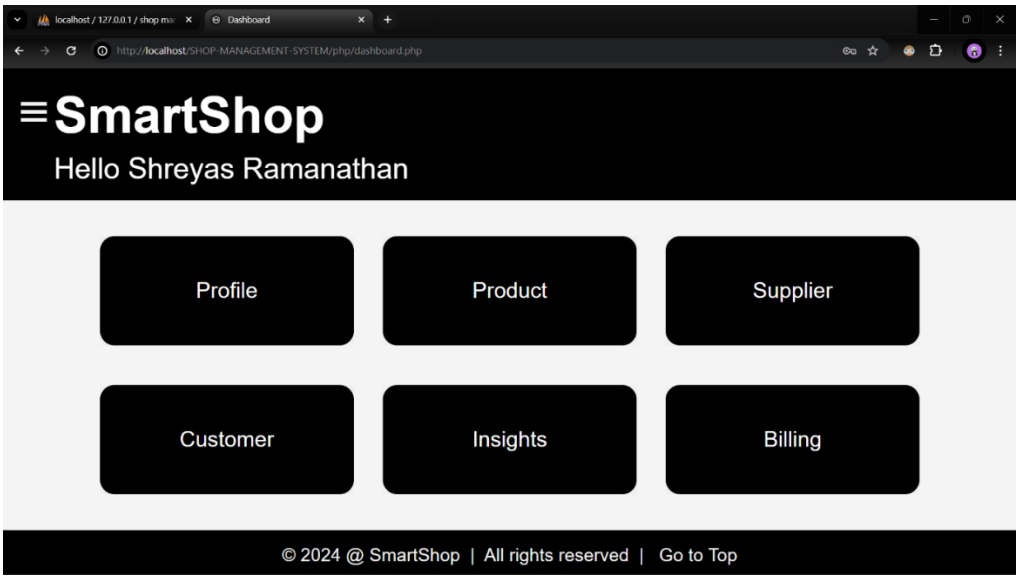


Figure 3: Dashboard with links to pages for different functions

d. Profile:

The profile page allows users to view and edit their personal information, such as their name, email id, address, phone number and etc…

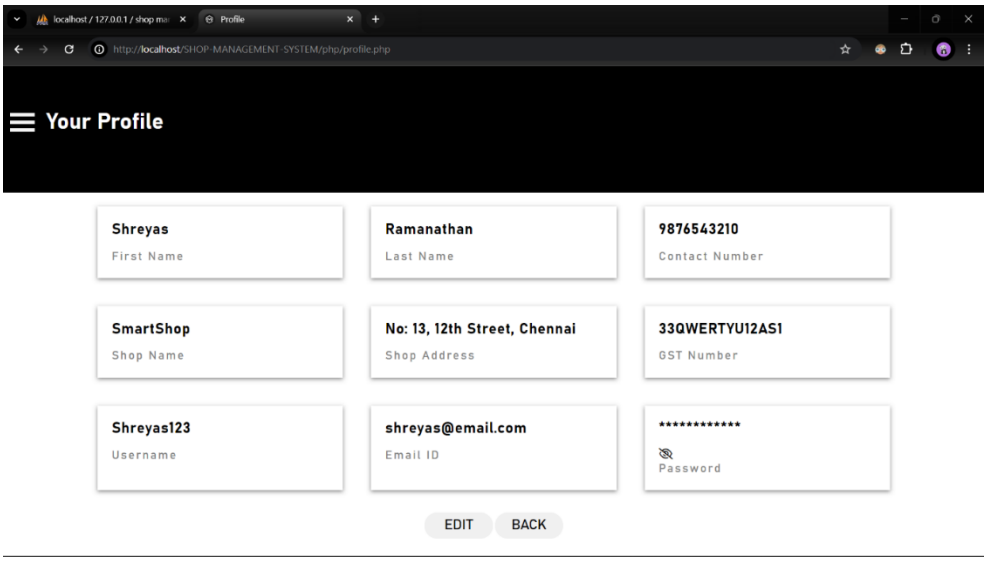


Figure 4: User Profile Page

e. Product:

The product management page provides an interface for managing the products. Users can perform a variety of operations on the products information.

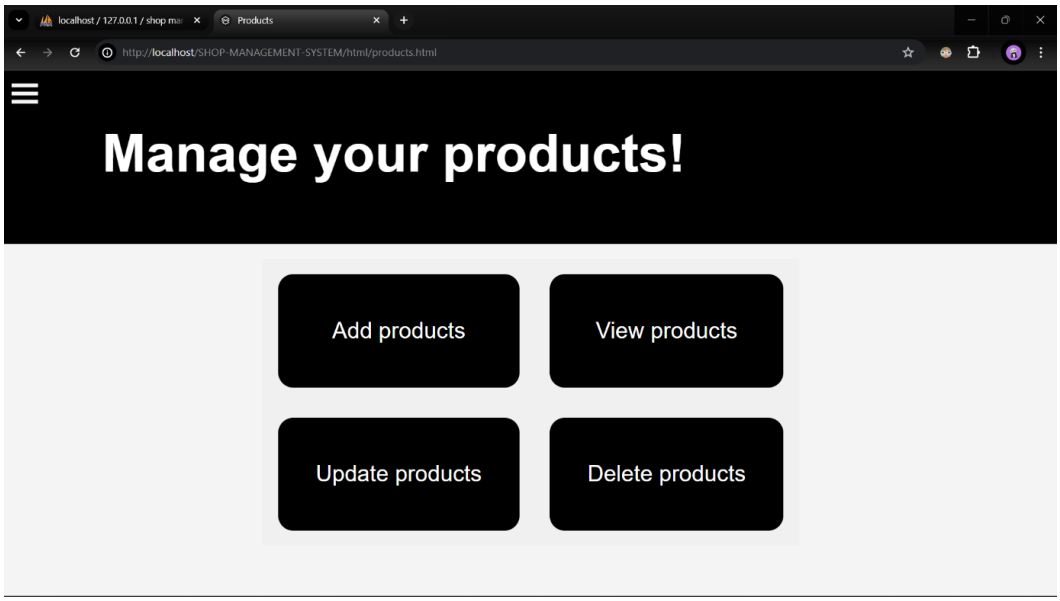


Figure 5: Product Management Page

f. Supplier:

The supplier management page provides an interface for managing the suppliers. Users can perform a variety of operations on the supplier's information**.**

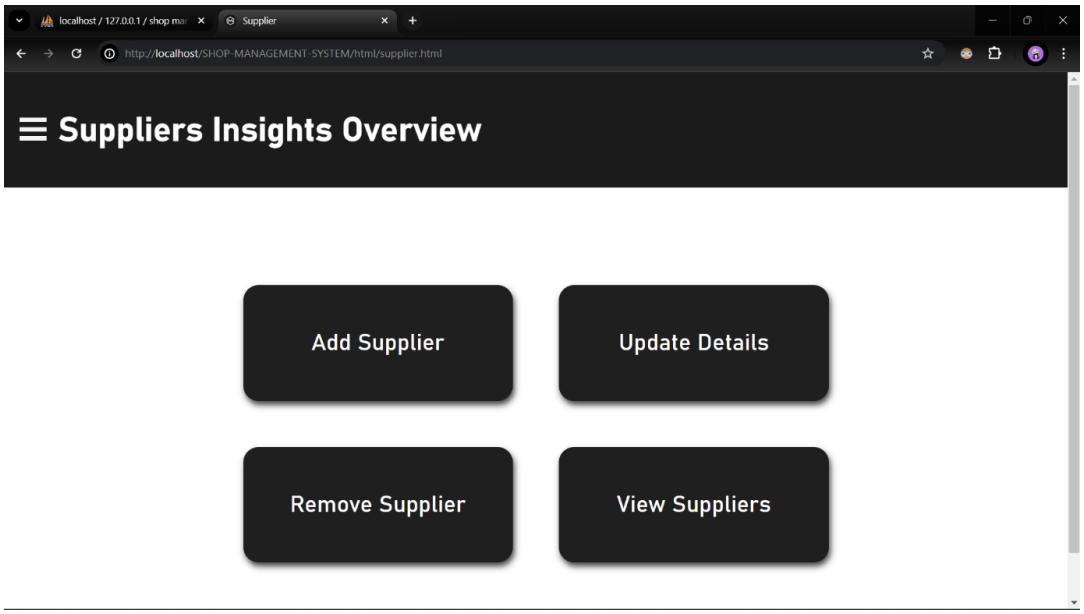


Figure 6: Supplier Management Page

g. Customer:

The customer management page provides an interface for managing the customers. Users can perform a variety of operations on the customer's information**.**

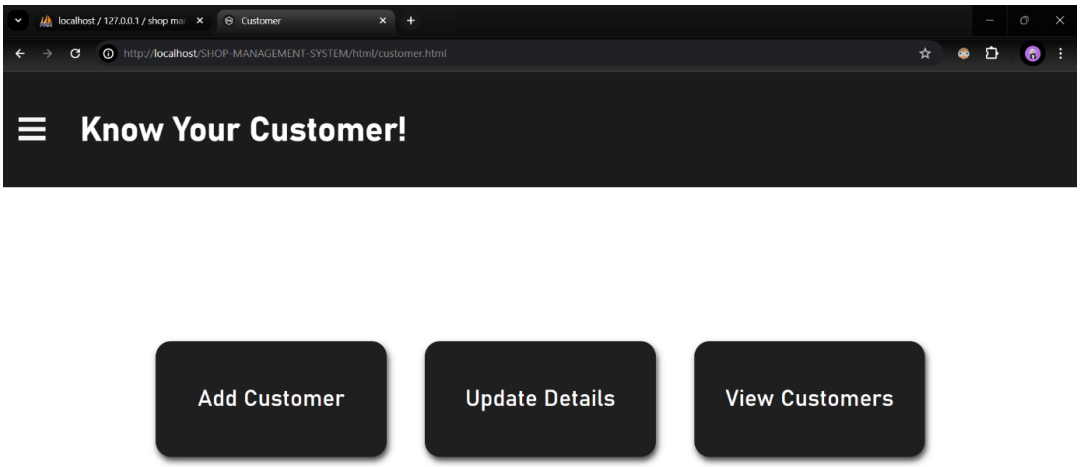


Figure 7: Customer Management Page

h. Add (Insert):

The add supplier page allows users to enter and save new supplier details into the system. Users can input information such as the supplier's name, phone number and address.

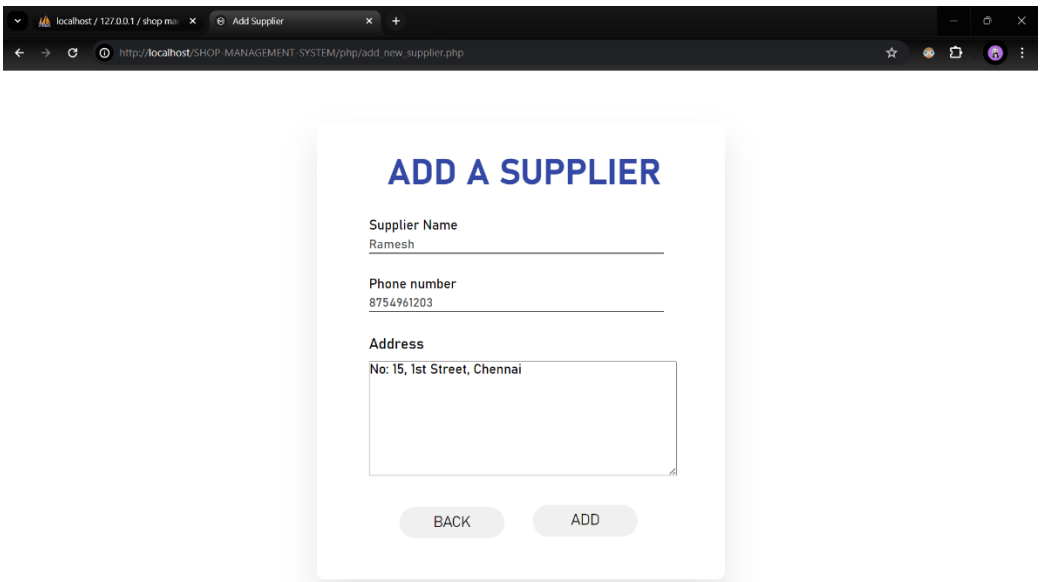


Figure 8: Add Supplier Page

i. View (Select):

The view suppliers page displays a list of all registered suppliers along with their details. Users can easily browse through the suppliers, view their contact information, and access additional data.

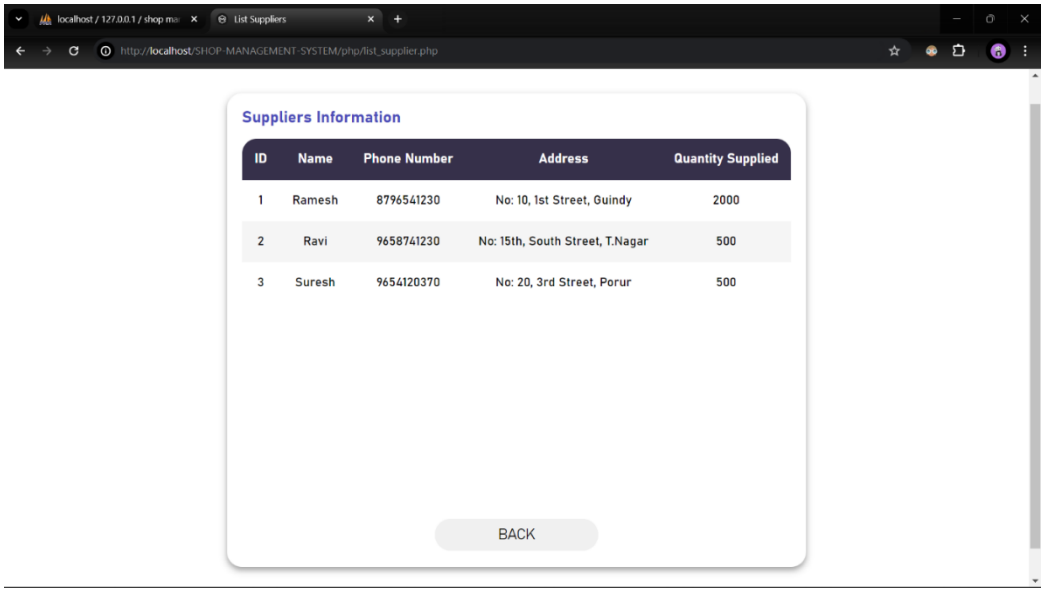


Figure 8: View Supplier Page

j. Update:

The update supplier page enables users to modify the details of existing suppliers. Users can type the id of a specific supplier, edit their information, and save the changes.

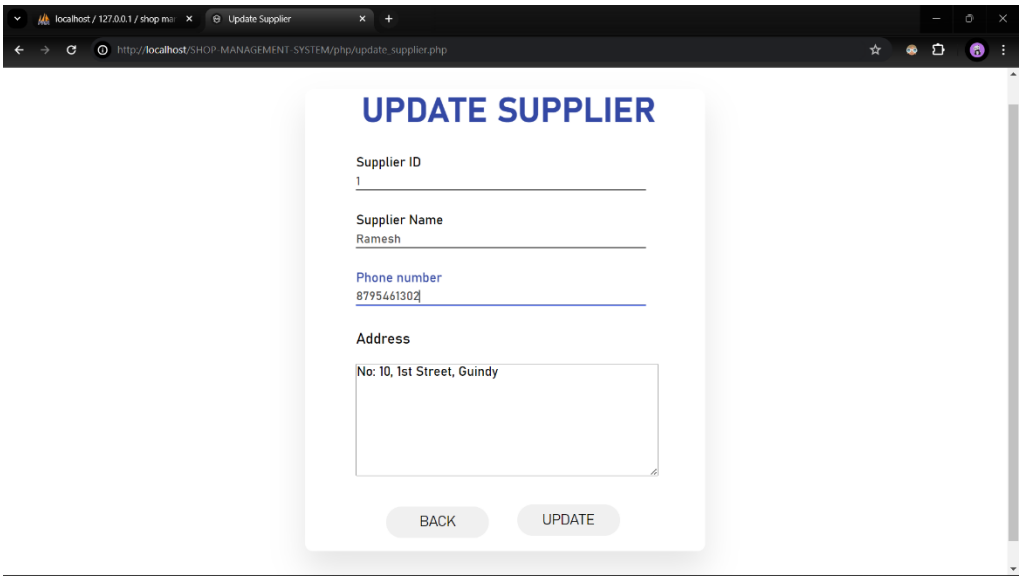


Figure 9: Update Supplier Page

k. Delete:

The remove supplier page allows users to delete supplier records from the system. Users can either type the id or name of a specific supplier and permanently remove their details from the database**.**

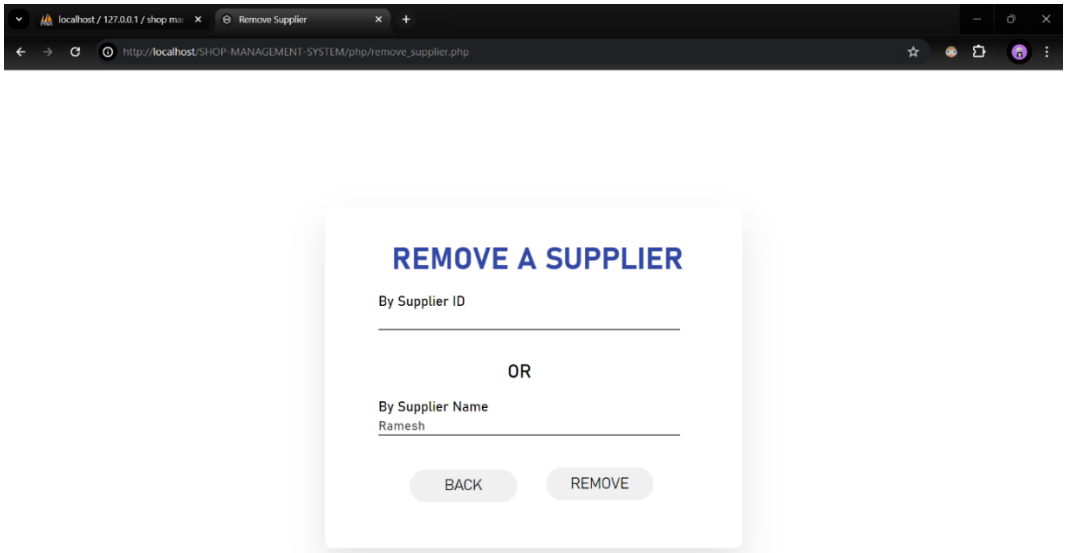


Figure 10: Remove Supplier Page

l. Billing:

The billing page provides an interface for adding and deleting products from the order of a particular customer. It also displays the customer's name and order information in real-time.

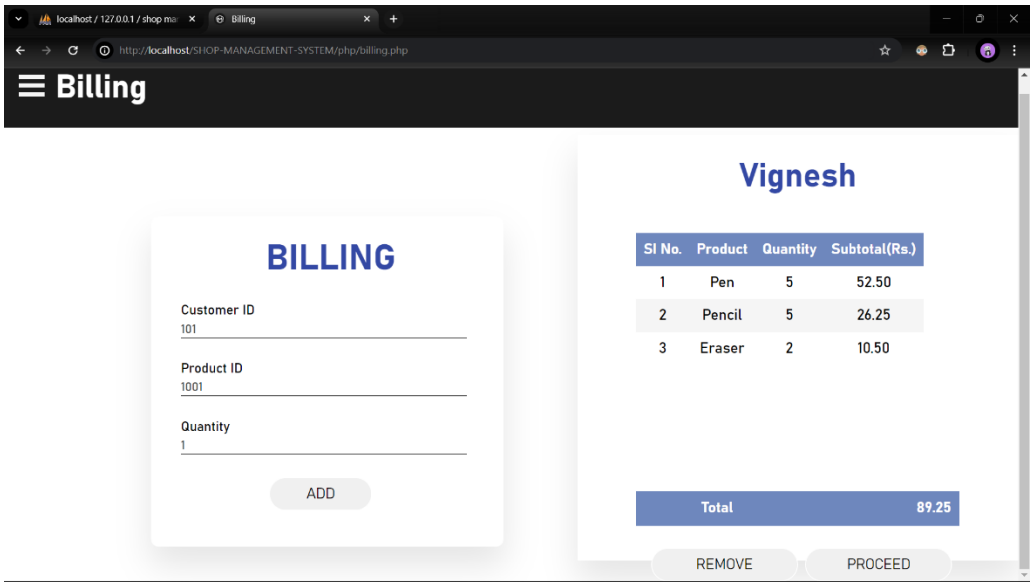


Figure 11: Billing Page

m. Invoice:

The invoice page displays detailed billing information. Users can view and print invoices that include itemized lists of purchased products, quantities, prices, taxes, and the total amount.

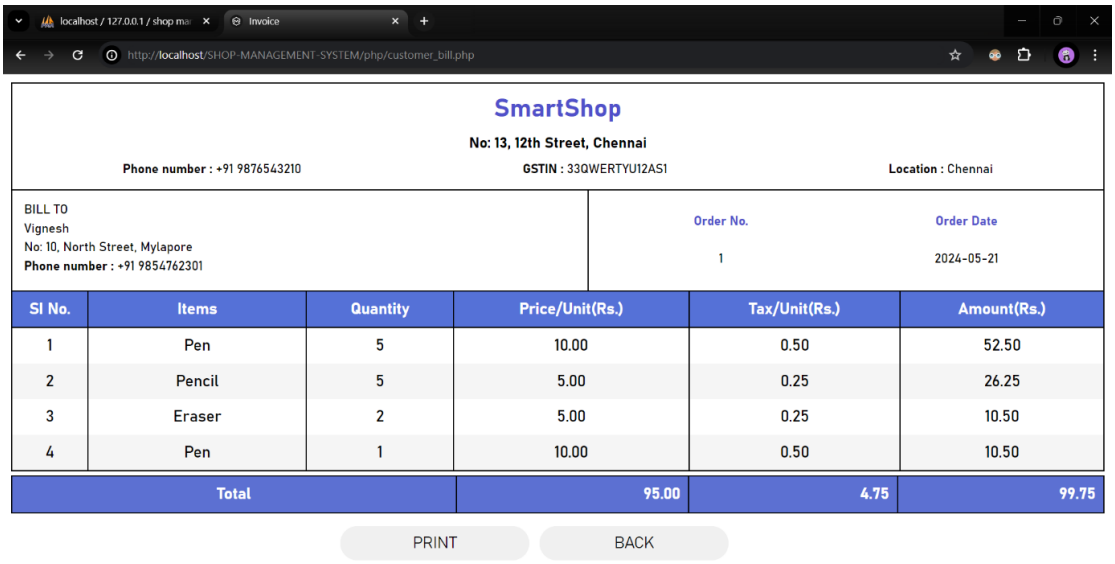


Figure 12: Invoice Page

n. Insights:

The insights page displays various information which assists in making quick inferences and conclusions.

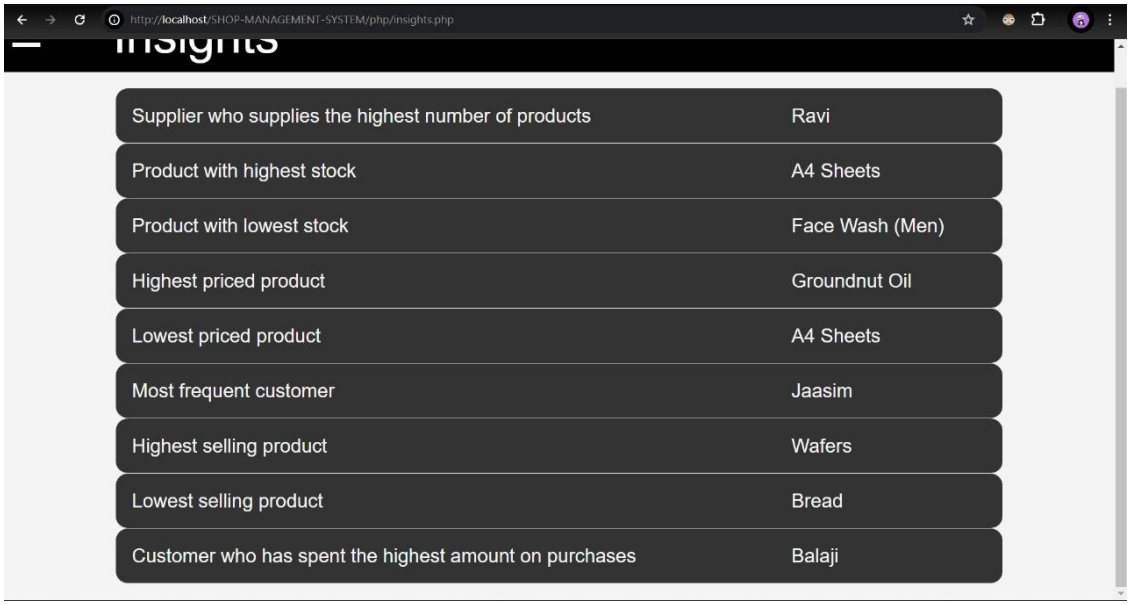


Figure 13: Insights Page with various insights on entered data

V. Screenshots of relevant Databases

The MySQL and PHP are incorporated to store the user entered data for future reference and validation during sign-in. The sign-up page creates a table with user-info. When the user wishes to sign-in, the row of the provided roll-no is selected using mySQL query in PHP. Once authentication is successfully completed the user is taken to the homepage

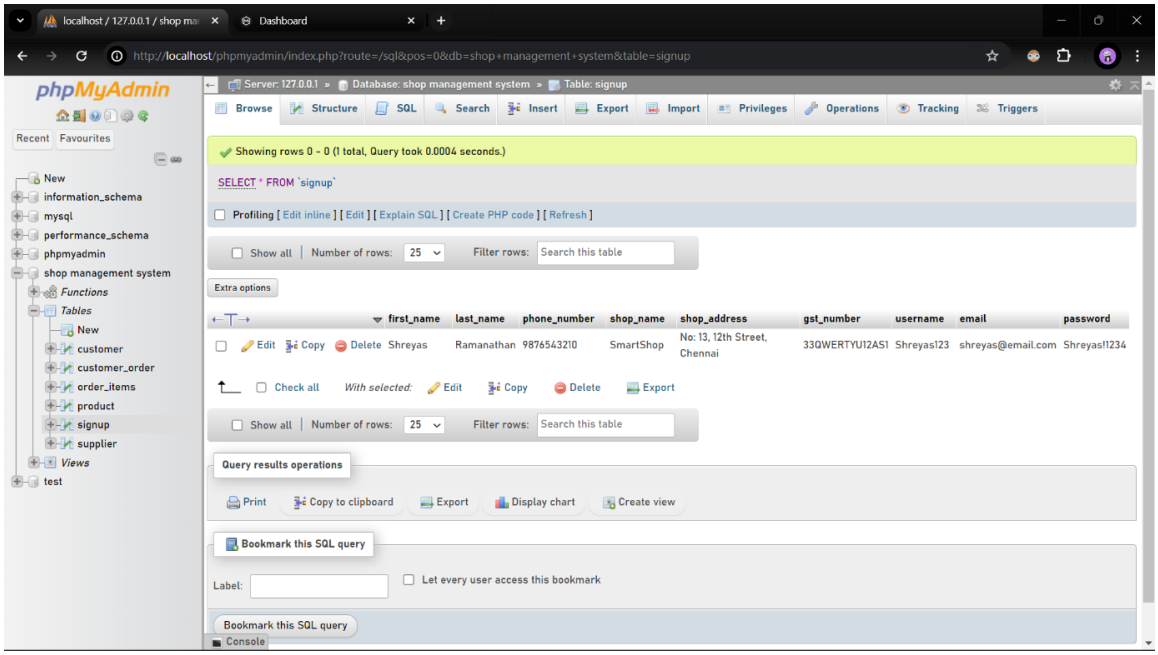


Figure 14: The signup table is displayed

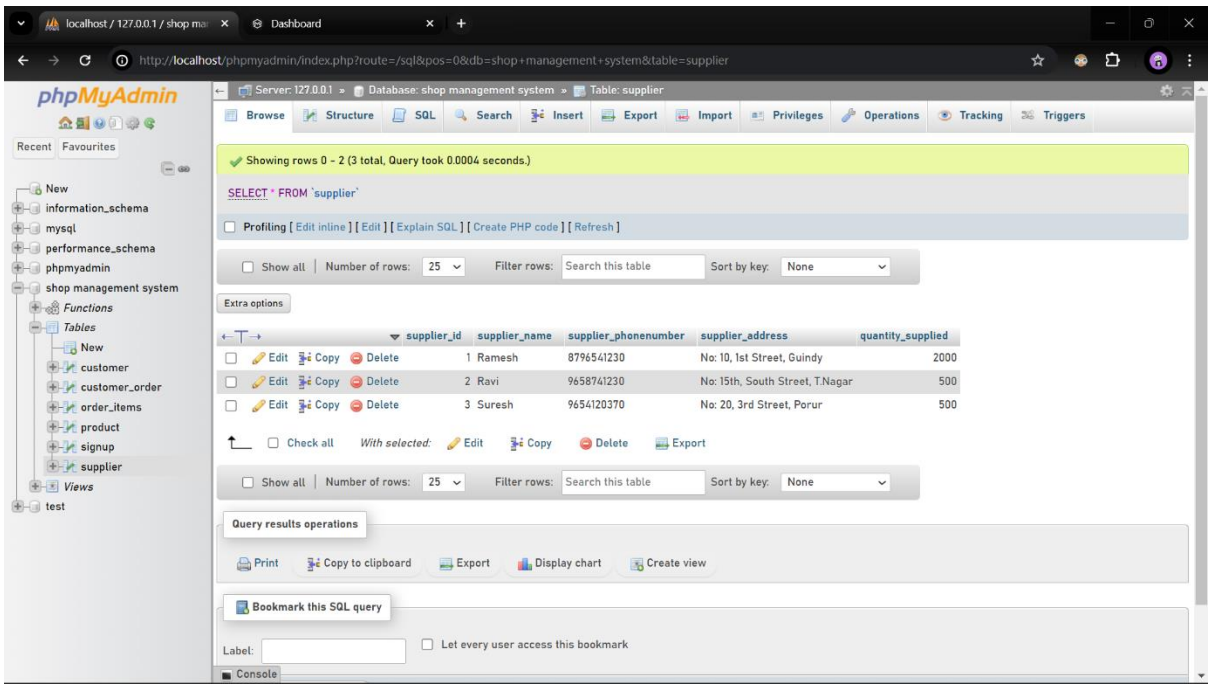


Figure 15: The supplier's information along with the quantity of products supplied is displayed

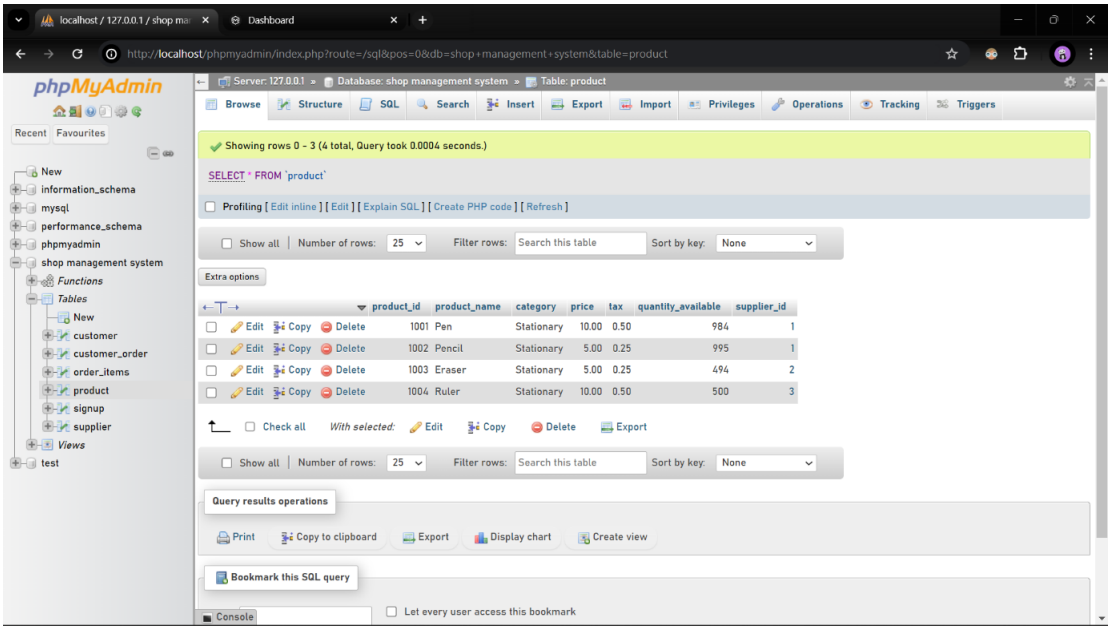


Figure 16: The products information along with the supplier id is displayed

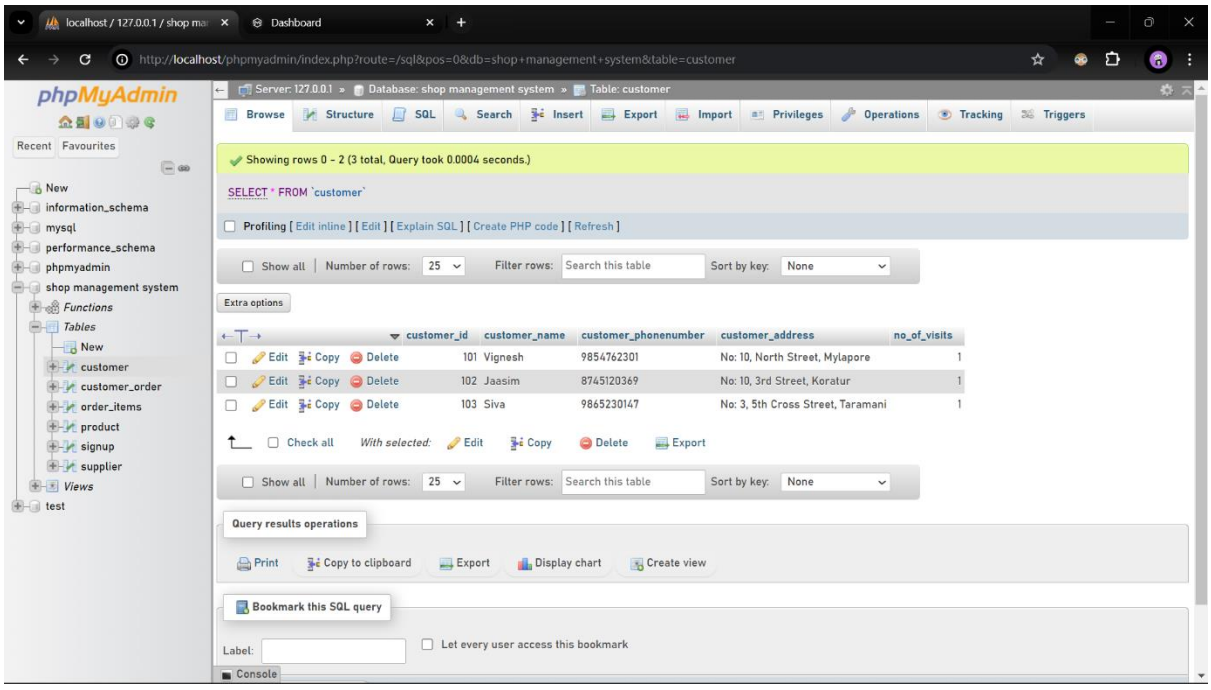


Figure 17: The customers information with number of visits to the store is displayed

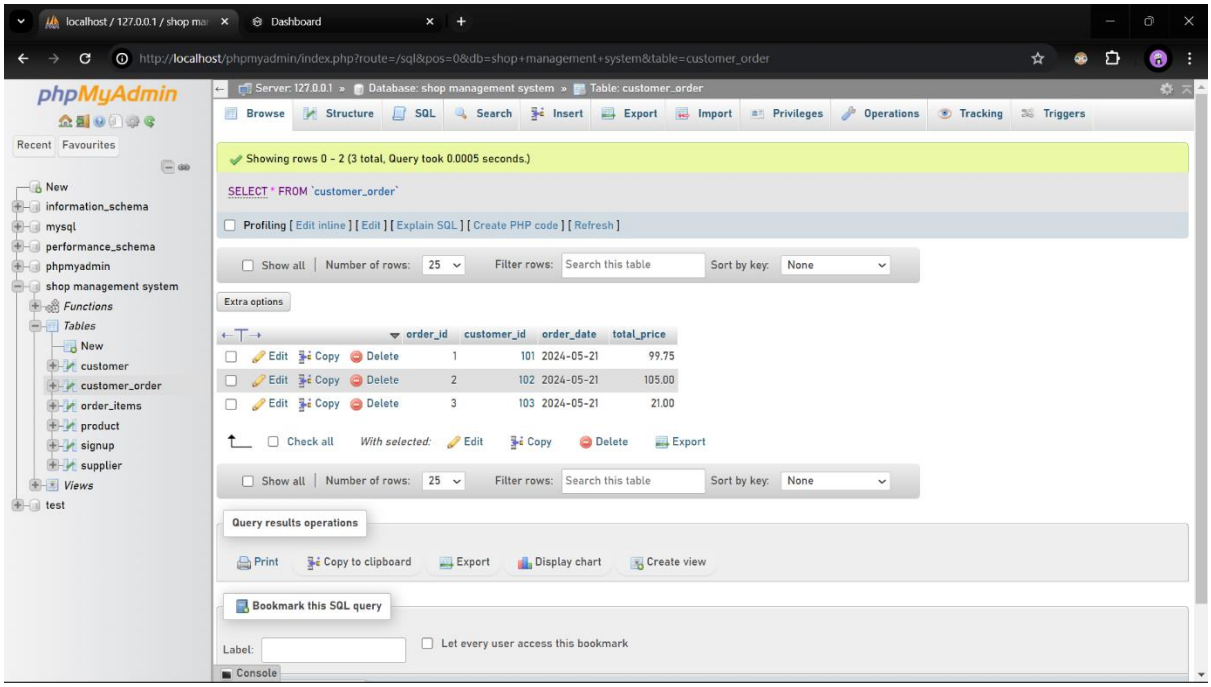


Figure 18: The order information of all customers is displayed

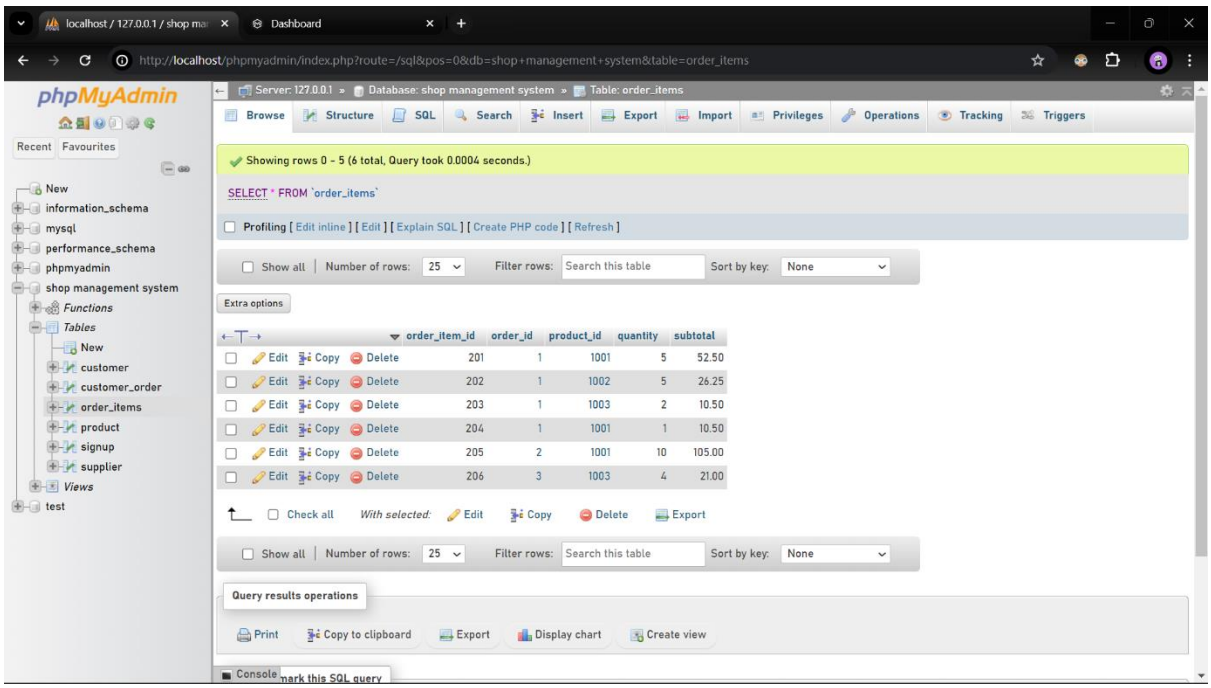


Figure 19: Displays the details of items ordered. It plays a major role in generating invoices.

DATASET

The tables used in this project are as follows:

1. Product Table

```
$sql_product = "CREATE TABLE product (
    product_id INT AUTO_INCREMENT PRIMARY KEY,
    product_name varchar(40),
    category varchar(40),
    price DECIMAL(10,2),
    tax DECIMAl(10,2) DEFAULT 0.00,
    quantity_available INT,
    supplier_id INT)";
mysqli_query($conn,$sql_product);

$sql_supplier="Alter table product AUTO_INCREMENT=1001";
mysqli_query($conn,$sql_supplier);
```

2. Supplier Table

```
$sql_supplier="CREATE TABLE supplier (
    supplier_id INT PRIMARY KEY AUTO_INCREMENT,
    supplier_name varchar(40),
    supplier_phonenumber varchar(60),
    supplier_address varchar(100),
    quantity_supplied INT DEFAULT 0 ) ";
 mysqli_query($conn,$sql_supplier);

 $sql_supplier="Alter table supplier AUTO_INCREMENT=1";
 mysqli_query($conn,$sql_supplier);
```

3. Customer Table

```
$sql_customer="CREATE TABLE customer(
    customer_id INT PRIMARY KEY AUTO_INCREMENT,
    customer_name varchar(15),
    customer_phonenumber varchar(40),
    customer_address varchar(100),
    no_of_visits INT DEFAULT 0)";
 mysqli_query($conn,$sql_customer);

 $sql_supplier="Alter table customer AUTO_INCREMENT=101";
 mysqli_query($conn,$sql_supplier);
```

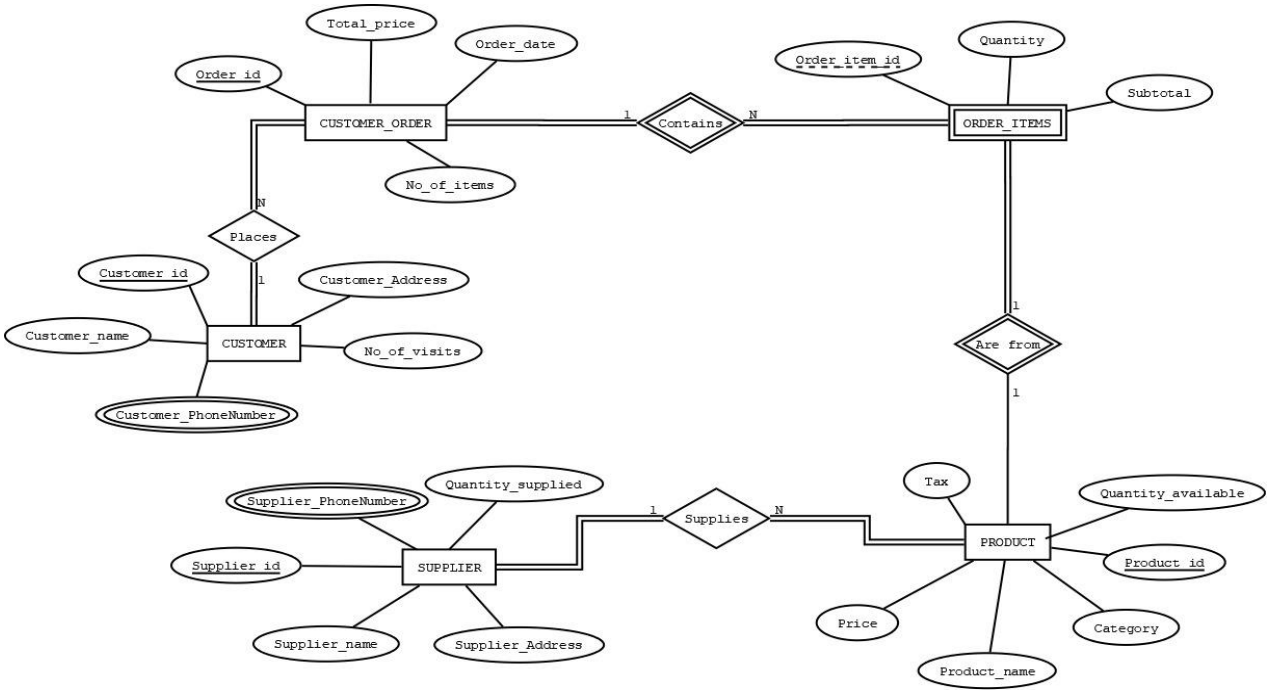
4. Customer Order Table

```
$sql_customer_order = "CREATE TABLE customer_order(
    order_id INT AUTO_INCREMENT PRIMARY KEY,
    customer_id INT,
    order_date DATE DEFAULT NULL,
    total_price DECIMAL(10,2) DEFAULT 0.00) ";
mysqli_query($conn,$sql_customer_order);

$sql_supplier="Alter table customer_order AUTO_INCREMENT=1";
mysqli_query($conn,$sql_supplier);
```

5. Order Items Table

```
$sql_order_items = "CREATE TABLE order_items(
    order_item_id INT AUTO_INCREMENT PRIMARY KEY,
    order_id INT,
    product_id INT,
    quantity INT,
    subtotal DECIMAL(10,2) DEFAULT 0)";
mysqli_query($conn,$sql_order_items);

$sql_supplier="Alter table order_items AUTO_INCREMENT=201";
mysqli_query($conn,$sql_supplier);
```

VI. ER DIAGRAM OF PROJECT:



VII. CONCLUSION:

The process of implementing our Shop Management System greatly improved our knowledge and skills in web development. The various difficulties, constraints and complexities involved became apparent to us.

We understood the importance of visual appeal while making our webpages. Maintaining a consistent visual theme contributes to a pleasant user experience.

Designing the database schema, establishing constraints, using queries helped us to develop a clearer understanding of the concepts of DBMS, which we have used effectively in our project.

Overall aspects of our project:

Frontend:

- Page layout
- Frontend Validation
- Forms
- Tables
- Buttons
- Animations

Backend:

- PHP validation (whether entered data is present)
- MySQL for database management
- Adding, retrieving and displaying and deleting data using forms.