RESTAURANT BILLING SOFTWARE

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ABSTRACT

A Restaurant Billing System (RBS) is a software application designed to automate and streamline the billing process in restaurants, ensuring accurate, efficient, and timely billing for customers. The system enables the seamless generation of itemized bills based on customer orders, including taxes, discounts, and service charges, while providing clear, concise, and error-free invoices.

It integrates with the restaurant's Point of Sale (POS) system to track orders, calculate totals, and process payments, whether in cash, card, or digital wallets. Additionally, the system allows for split billing, enabling customers to share a bill, and supports multiple payment methods, ensuring flexibility and convenience.

The Restaurant Billing System also provides reporting features, helping restaurant owners and managers track sales, monitor transaction histories, and identify trends in customer spending. By automating billing and payment processing, the system reduces human error, enhances customer satisfaction, and improves overall operational efficiency, contributing to a more streamlined and profitable restaurant operation.

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1. INTRODUCTION

In the modern restaurant industry, efficiency and accuracy in billing play a crucial role in ensuring customer satisfaction and smooth business operations. Traditional manual billing methods are prone to errors, delays, and inefficiencies, leading to dissatisfaction among customers and increased workload for restaurant staff. To address these challenges, a **Restaurant Billing System (RBS)** is developed as a software solution that automates the billing process, improves transaction accuracy, and enhances the overall customer experience.

The **Restaurant Billing System** integrates with the restaurant's **Point of Sale (POS)** system to generate detailed, error-free invoices, incorporating taxes, discounts, and service charges. It supports multiple payment methods, including cash, credit/debit cards, and digital wallets, ensuring flexibility for customers. Additionally, features such as **split billing** allow multiple customers to share a bill conveniently.

Beyond billing, the system offers **real-time reporting and analytics**, enabling restaurant owners and managers to track sales, monitor transactions, and identify spending trends. By reducing human errors, automating calculations, and streamlining payment processing, the Restaurant Billing System enhances operational efficiency, reduces waiting times, and contributes to a seamless dining experience.

This project aims to develop a user-friendly, efficient, and secure billing system that meets the demands of modern restaurants while improving financial management and customer service.

2. SOFTWARE REQUIREMENT ANALYSIS

2.1 HARDWARE SPECIFICATION

OS	Windows: 10 or newer MAC: OS X v10.7 or higher
Processor	2GHz or more
RAM	4.00 GB or above
Hard Disk	128 GB or more
Network	Ethernet connection (LAN)OR a wireless adapter (Wi-Fi)

2.2 SOFTWARE SPECIFICATION

IDE	Visual Studio Code
Server-Side Scripting	PHP
Front End	HTML, CSS, Js & Bootstrap
Database	MYSQL
Browser	Chrome

2.3 ABOUT THE SOFTWARE AND ITS FEATURE

HTML:

HTML, short for Hypertext Markup Language, is a programming language used to create and structure content for the web. HTML is the standard language used to build web pages and is supported by all modern web browsers.

HTML uses a series of tags to structure content and provide meaning to web pages. These tags are enclosed in angle brackets and are used to identify different types of content, such as headings, paragraphs, links, and images.

For example, to create a heading in HTML, you would use the "h1" tag, like this:

```
<h1>This is a Heading</h1>
```

Similarly, to create a paragraph, you would use the "p" tag, like this:

```
<p>This is a paragraph of text.</p>
```

HTML also allows you to include other types of content in your web pages, such as images, videos, and audio files. These types of content are typically included using specific tags that define the type of content being included.

Overall, HTML is a foundational technology for the web and is essential for creating and structuring web pages.

CSS :

CSS, short for Cascading Style Sheets, is a programming language used to add style, layout, and formatting to web pages. CSS works in conjunction with HTML and provides a way to control the visual appearance of web pages.

CSS allows you to control the layout of web pages, including the placement of content, the size and spacing of elements, and the overall look and feel of the page. CSS can also be used to create animations and other interactive effects on web pages.

CSS works by applying styles to HTML elements using selectors. Selectors target specific HTML elements and allow you to define how those elements should be styled. For example, you could use a selector to target all the paragraph elements on a web page and define how they should be formatted:

```
p {
  font-size: 16px;
line-height:  1.5;
color: #333;
}
```

This CSS code would set the font size of all paragraph elements to 16 pixels, set the line height to 1.5 times the font size, and set the text color to a dark gray.

CSS also supports a wide range of other styling options, including font styles, backgrounds, borders, and more. By combining HTML and CSS, you can create visually appealing and highly functional web pages.

JavaScript:

JavaScript is a dynamic scripting language that enhances the functionality and interactivity of web applications. In a **Restaurant Billing System**, JavaScript plays a crucial role in managing calculations, form validations, and user interactions. It allows real-time bill generation by dynamically updating totals as customers select items.

Additionally, JavaScript enables **event handling**, such as button clicks for generating invoices and processing payments. **AJAX (Asynchronous JavaScript and XML)** helps retrieve data from the server without reloading the page, improving efficiency. JavaScript also integrates with third-party **payment gateways** to facilitate secure online transactions, making the billing process faster and more reliable.

Key Features of JavaScript in the Billing System:

- **Form Validation: Ensures correct input, such as valid item quantities and payment details.**
- **Dynamic UI Updates: Updates the bill total instantly when an item is added or removed.**
- **Event Handling: Listens to user actions like clicking a button to generate the final bill.**

Bootstarp:

Bootstrap is a front-end framework that ensures a **responsive and visually appealing** design for the Restaurant Billing System. It provides a structured grid system, pre-designed UI components like buttons, tables, forms, and modals, and ensures a mobile-friendly layout. Using Bootstrap, developers can create an intuitive interface that enhances user experience.

The **table and form components** allow easy item selection and billing, while the **alert and modal components** help display confirmation messages or payment details. Bootstrap's

styling ensures a **professional and consistent look** across different devices, improving usability and accessibility for both restaurant staff and customers.

Key Features of Bootstrap in the Billing System:

- **Responsive Design: Ensures the application works seamlessly on desktops, tablets, and mobile devices.**
- **Predefined Components: Provides ready-made buttons, modals, forms, and tables.**
- **Grid System: Helps structure the layout efficiently.**

MySQL

MySQL is a powerful relational database management system used to store and manage billing records, menu items, and transaction details in the Restaurant Billing System. It ensures data integrity and fast retrieval of billing information.

Key Features of MySQL in the Billing System:

- **Data Storage:** Stores menu items, orders, customer details, and transactions.
- **Fast Query Execution:** Retrieves bills and reports efficiently.
- **Security:** Ensures data safety with authentication and access control.
- **Scalability:** Handles a growing number of transactions smoothly.

3. SYSTEM ANALYSIS

3.1 EXISTING SYSTEM

In many restaurants, billing and order management are handled using **traditional or semi-automated methods**, which often result in inefficiencies and errors. The existing system primarily relies on **manual billing**, where restaurant staff record orders on paper or basic cash registers, leading to **delays, miscalculations, and human errors**. Some restaurants use basic **spreadsheet-based billing** or standalone **POS (Point of Sale) systems** with **limited functionality** and **lack of integration** with digital payment methods.

1. **Challenges in the Existing System:**
2. **Manual Errors:** Calculations, tax applications, and discounts are prone to mistakes, affecting billing accuracy.
3. **Time-Consuming Process:** Staff members manually compute totals, apply discounts, and process payments, leading to customer wait times.
4. **Limited Payment Flexibility:** Traditional systems often rely on cash transactions, with limited or no support for digital wallets, UPI, or card payments.
5. **Lack of Real-time Tracking:** Orders are not efficiently tracked, making it difficult to monitor transactions, sales trends, and inventory in real time.
6. **Difficulty in Generating Reports:** Managers must manually compile financial records, leading to inefficiencies in decision-making and business analytics.
7. **No Split Billing Support:** Customers dining together may find it inconvenient to split bills manually.
8. **Security Concerns:** Paper-based or standalone systems can be vulnerable to fraud, misplaced bills, or unauthorized access to financial data.

Due to these **limitations and inefficiencies**, an advanced **automated Restaurant Billing System** is necessary to improve **accuracy, efficiency, and customer experience** while **integrating modern payment solutions and real-time reporting**.

3.2 PROPOSED SYSTEM

The **Proposed Restaurant Billing System (RBS)** is an advanced and automated solution designed to eliminate the inefficiencies of traditional billing methods by streamlining the process with modern technologies. This system ensures **accuracy, speed, and flexibility** while improving customer satisfaction and overall operational efficiency.

One of the primary features of the proposed system is **automated billing**, which eliminates human errors in calculations, tax applications, and discount processing. Unlike manual methods, this system dynamically updates **itemized bills**, ensuring that taxes and service charges are applied correctly. It integrates seamlessly with the **Point of Sale (POS) system**, allowing restaurant staff to manage orders and payments efficiently. Additionally, the system supports **multiple payment methods**, including **cash, credit/debit cards, UPI, and digital wallets**, ensuring convenience for customers.

Another significant feature is **split billing**, which allows customers to share the bill based on their orders or equal division. This feature improves the dining experience for groups, making payments more flexible and hassle-free. Furthermore, the system provides **real-time sales tracking and reporting**, enabling restaurant owners and managers to monitor **transaction histories, revenue trends, and customer spending patterns**. This data-driven approach helps in making informed business decisions and improving financial management.

The system is designed with a **responsive and intuitive user interface using Bootstrap**, ensuring seamless access across **desktops, tablets, and mobile devices**. It offers a clean and modern layout, making it easy for restaurant staff to navigate and operate efficiently. The backend is powered by **MySQL**, which securely stores **customer orders, billing records, and payment details**, ensuring data integrity and protection from unauthorized access.

3.3 FEASIBILITY STUDY

A **feasibility study** is conducted to determine the practicality and viability of implementing the **Restaurant Billing System (RBS)**. This study evaluates various factors such as **technical, operational, economic, and legal feasibility** to ensure that the system can be successfully developed and deployed.

3.3.1 FEASIBILITY SYSTEM

The objective of feasibility study is not only to solve the problem but also to acquire a sense of its scope. During the study, the problem definition is crystallised and aspects of the problem to be included in the system are determined. Consequently, benefits are estimated with greater accuracy at this stage. The key considerations are:

- Technical Feasibility
- Operational Feasibility
- Economic Feasibility
- Legal Feasibility

3.3.2 Technical Feasibility

The proposed system is technically feasible as it uses well-established and widely adopted technologies such as **JavaScript, Bootstrap, and MySQL**. These technologies provide a stable and scalable solution for managing restaurant billing operations. The system requires basic hardware, such as a **computer, tablet, or mobile device**, with an internet connection for accessing cloud-based functionalities. Additionally, it can be integrated with **POS systems, barcode scanners, and digital payment gateways**, ensuring smooth and efficient operations.

3.3.3 Operational Feasibility

The system is designed to enhance the **efficiency and accuracy** of restaurant billing processes. It simplifies tasks such as **order management, bill calculation, split billing, and payment processing**, reducing the workload for restaurant staff. With a **user-friendly interface**, the system ensures that both customers and employees can operate it with minimal training. Furthermore, **real-time reporting and analytics** help restaurant owners monitor sales and make informed business decisions, improving overall operational effectiveness.

3.3.4 Economic Feasibility

The development and implementation of the Restaurant Billing System are **cost-effective** compared to the long-term benefits it offers. By automating billing processes, the system **reduces human errors, minimizes revenue loss**, and enhances customer satisfaction. The use of **open-source technologies** like MySQL and Bootstrap further lowers development costs. Additionally, the **return on investment (ROI)** is high, as the system improves efficiency, speeds up billing, and increases customer retention, ultimately boosting restaurant profitability.

3.3.5 Legal Feasibility

The system complies with **legal and regulatory standards** for financial transactions, including **tax calculations, digital payment security, and data privacy laws**. It ensures that all transactions are recorded properly for **auditing and taxation purposes**. Moreover, the system follows **payment security protocols** to protect customer information and prevent fraud.

4. SYSTEM DESIGN

4.1 DATA FLOW DIAGARAM

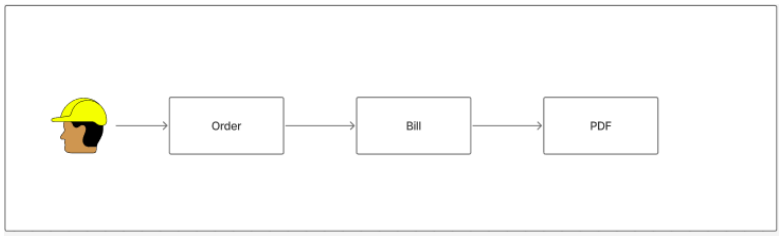


Figure 4.1.1 Level 1 DFD

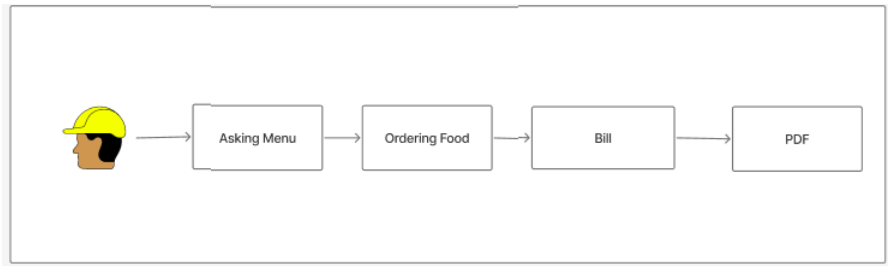


Figure 4.1.2 Order Level 1 DFD

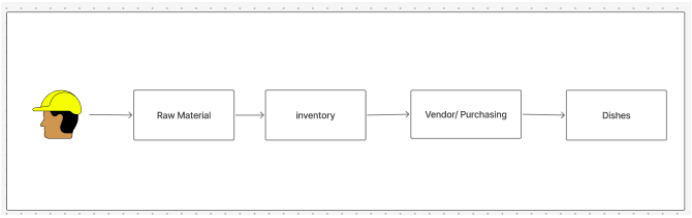


Figure 4.1.3 Level 2 DFD

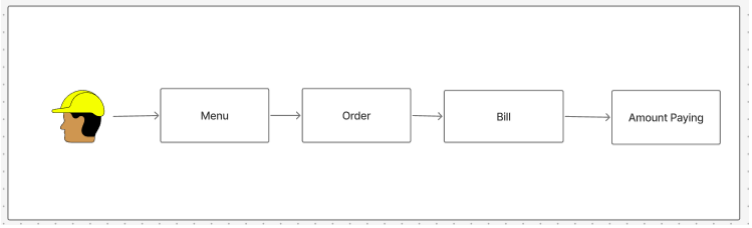


Figure 4.1.4 Order Level 2 DFD

4.2 UML DIAGRAMS

4.2.1 USE CASE DIAGRAM

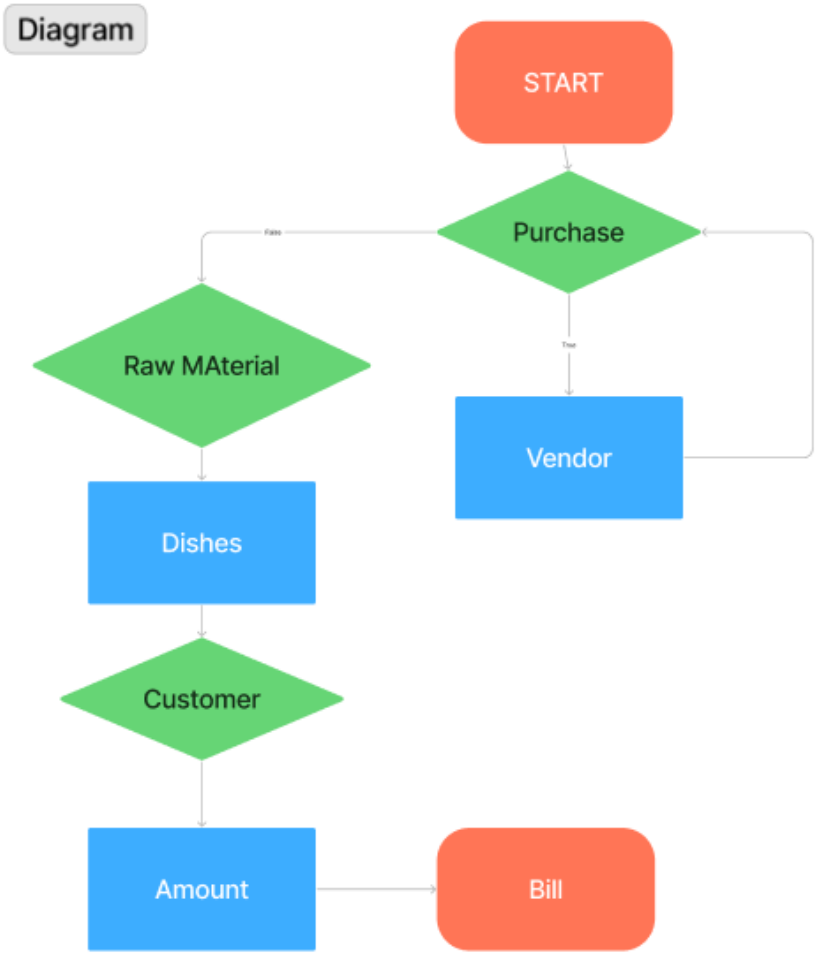


Figure 4.2.1.1 Use Case Diagram

4.2.2 ACIVITY DIAGRAM

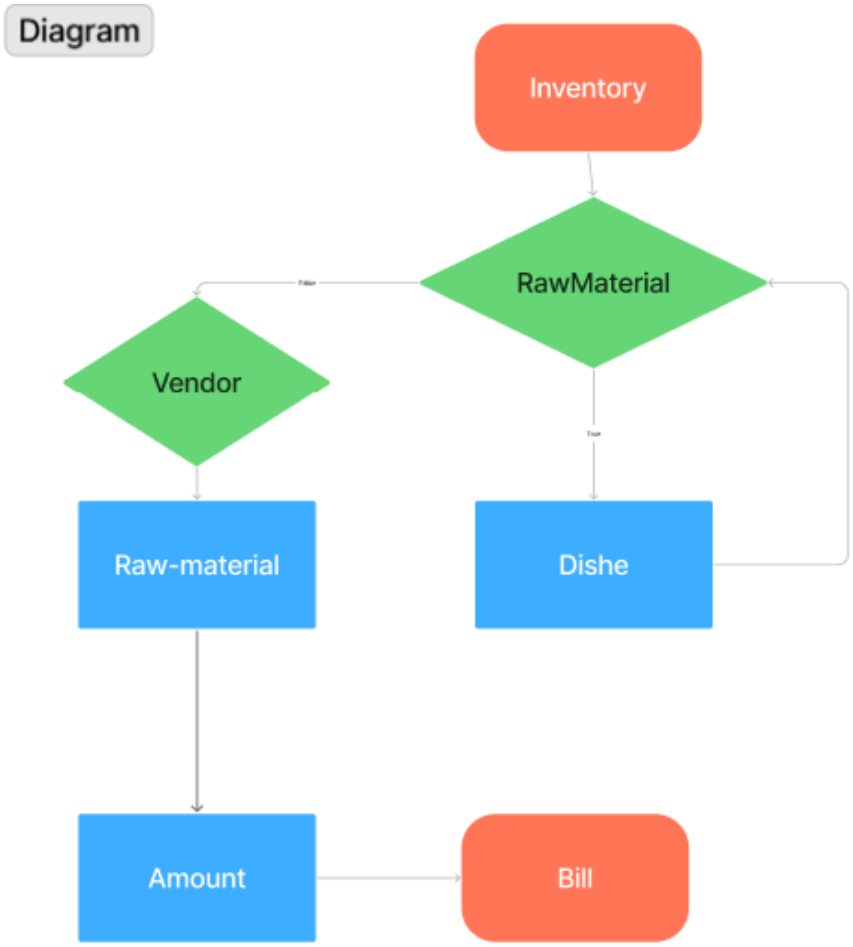


Figure 4.2.2.2 Activity Diagram

4.2.3 SEQUENCE DIAGRAM

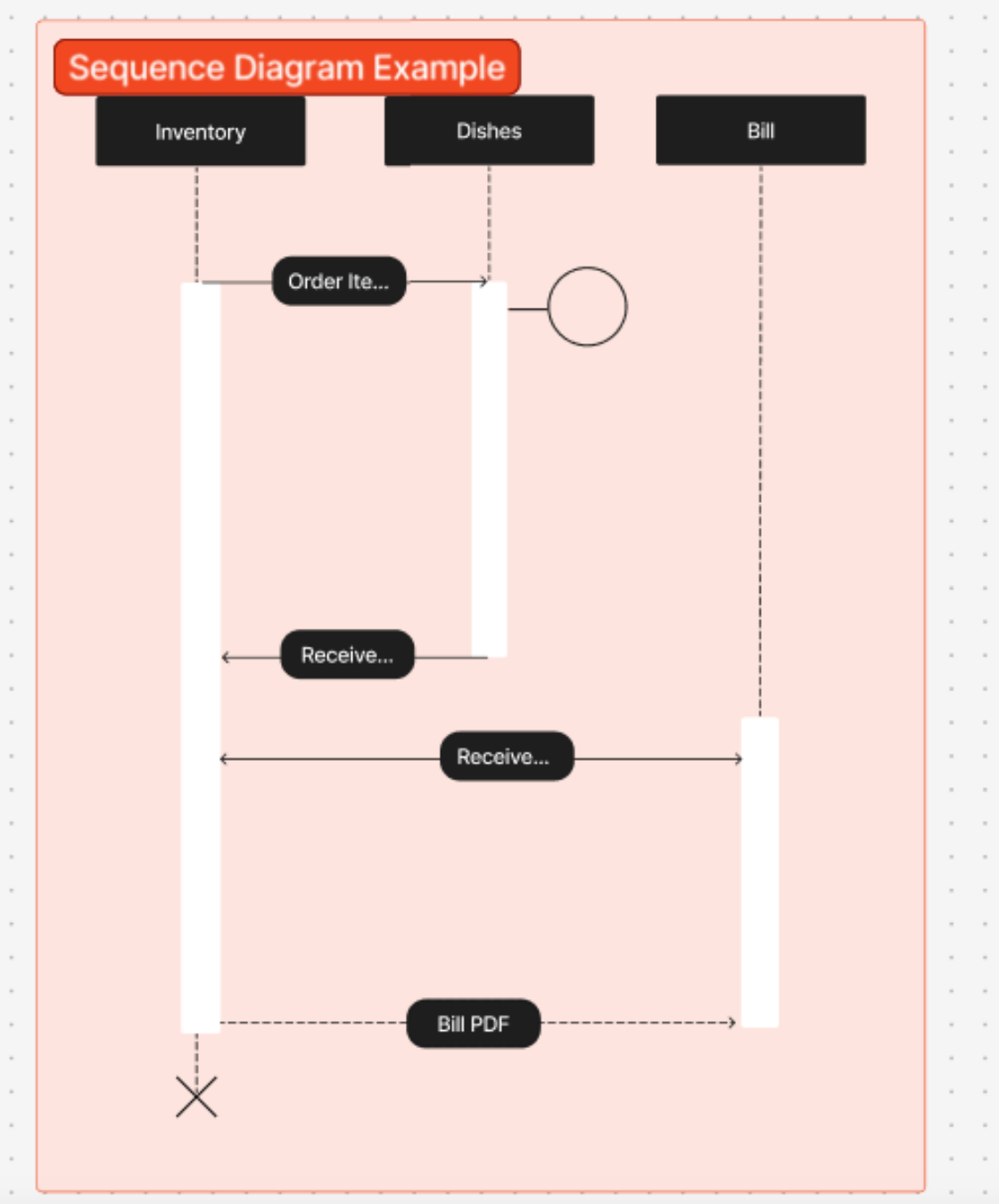


Figure 4.22.3.3 Sequence Diagram

4.3 DATABASE DESIGN

4.3.1 ER DIAGRAM

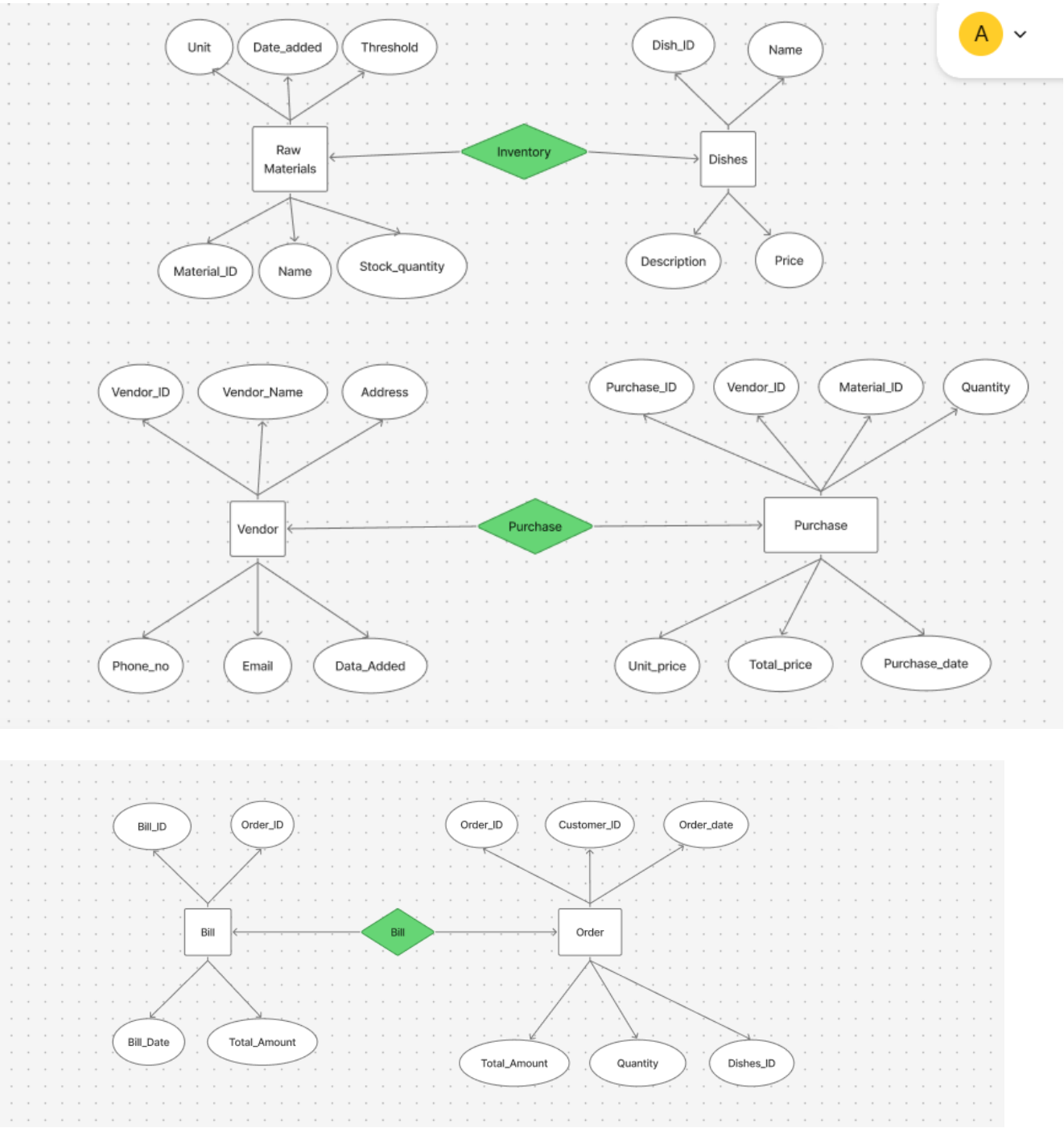


Figure 4.33.1.1 ER Diagram

5. CODE TEMPLATES

5.1 MODULE DESCRIPTION

A Restaurant Billing System (RBS) is an advanced software application designed to automate and streamline the billing process in restaurants, ensuring accuracy, efficiency, and convenience for both customers and staff. The system eliminates manual errors by automatically generating itemized bills based on customer orders, including applicable taxes, discounts, and service charges. By integrating seamlessly with the restaurant's Point of Sale (POS) system, the RBS ensures smooth order tracking, precise bill calculations, and multiple payment options, significantly reducing waiting time and enhancing customer satisfaction.

One of the key features of the Restaurant Billing System is its ability to handle multiple payment methods, including cash, credit/debit cards, UPI, and digital wallets, providing greater flexibility for customers. The system also supports split billing, enabling customers to divide payments among individuals or pay through multiple modes. This feature is particularly beneficial for group dining, where each person prefers to pay separately or in a specific proportion.

Furthermore, the system offers real-time reporting and analytics, allowing restaurant owners and managers to track sales, monitor transaction history, and analyze customer spending trends. These insights help businesses make data-driven decisions to optimize pricing strategies, improve service quality, and enhance overall profitability. The system also ensures data security by storing customer orders, transactions, and billing records in a secure MySQL database, preventing unauthorized access and ensuring data integrity.

The Restaurant Billing System is built using a combination of modern web technologies such as JavaScript, Bootstrap, and MySQL. JavaScript ensures dynamic interactions and real-time bill calculations, Bootstrap provides a responsive and user-friendly interface, while MySQL efficiently manages and stores data. The system is designed to be scalable, making it suitable for small, medium, and large-scale restaurants.

By automating billing and payment processing, the Restaurant Billing System not only reduces human errors and operational inefficiencies but also enhances the overall dining experience for customers.

5.2 TABLES

bill_id	(primary key, int)
Bill_number	(varchar)
date	Date
time	Time
subtotal	Decimal(10,2)
tax	Decimal(10,2)
total	Decimal(10,2)

Table 5.2.1 Bill

Item_id	(primary key, int)
Bill_id	Int
Item_name	(varchar)
Quanity	int
Price	Decimal(10,2)
Date	date

Table 5.2.2 bill_items

Dish_id	(primary key, int)
Name	(Varchar)
Price	Decimal(10,2)
Description	Text
Image	(varchar)

Table 5.2.3 dishes

Purchase_id	(primary key, int)
Vendor_id	(foreign key, int)
Material_id	Int
Purchase_date	Timestamp
Quantity	Int
Unit_price	Decimal(10,2)
Total_amount	Decimal(10,2)

Table 5.2.3 Purchase

Material_id	(primary key, int)
Name	(Varchar)
Stock_quantity	Int
Threshlod	Int
Unit	(Varchar)
Date_added	Date

Table 5.2.4 Raw_materials

Vendor_id	(primary key, int)
Name	(Varchar)
Contact_person	(Varchar)
Contact_number	(Varchar)
Email	(Varchar)
Address	Text
Date_added	Timetamp

Table 5.2.5 Vendor

6. TESTING

6.1 TESTING METHODOLOGIES

Testing is a crucial phase in the development of the Restaurant Billing System (RBS) to ensure its functionality, reliability, and security. Various testing methodologies are applied to identify and eliminate errors, optimize performance, and enhance user experience. The following testing techniques are used:

1. Unit Testing

- Focuses on testing individual components or modules, such as order management, billing calculation, and payment processing.
- Ensures that each module functions as expected before integration.
- Conducted using test cases to validate inputs, outputs, and expected results.

2. Integration Testing

- Verifies that different modules, such as menu management, order processing, and billing, work together seamlessly.
- Ensures proper data flow and communication between the POS system, database, and user interface.
- Detects issues related to data inconsistency or incorrect API responses.

3. Functional Testing

- Examines whether the system meets the required business logic and functional requirements.
- Includes test cases for:
    - Order placement and modification.
    - Correct bill generation with tax, discounts, and service charges.
    - Successful split billing and multi-payment options.

4. Usability Testing

- Ensures the system is user-friendly, intuitive, and easy to navigate for both restaurant staff and customers.
- Focuses on UI/UX design, accessibility, and responsiveness across different devices.
- Feedback is collected from users to improve the overall experience.

5. Performance Testing

- Evaluates the system's speed, responsiveness, and stability under different conditions.
- Simulates multiple users placing orders simultaneously to check for scalability and load handling.
- Identifies potential bottlenecks and optimization areas to enhance system performance.

6. Security Testing

- Ensures that customer payment details and transaction records are securely stored in the MySQL database.
- Validates user authentication and authorization to prevent unauthorized access.
- Tests for vulnerabilities such as SQL injection, cross-site scripting (XSS), and data breaches.

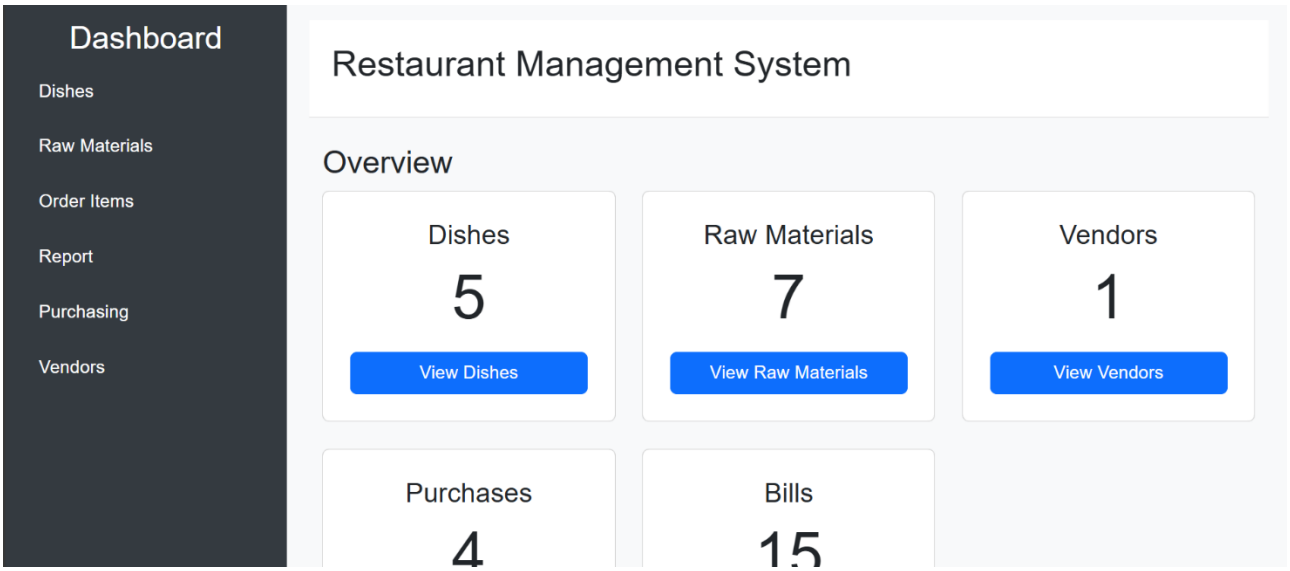
7. System Testing

- Conducted after integration to test the entire system under real-world conditions.
- Ensures compatibility across different devices and operating systems.
- Validates whether all functional, non-functional, and business requirements are met.

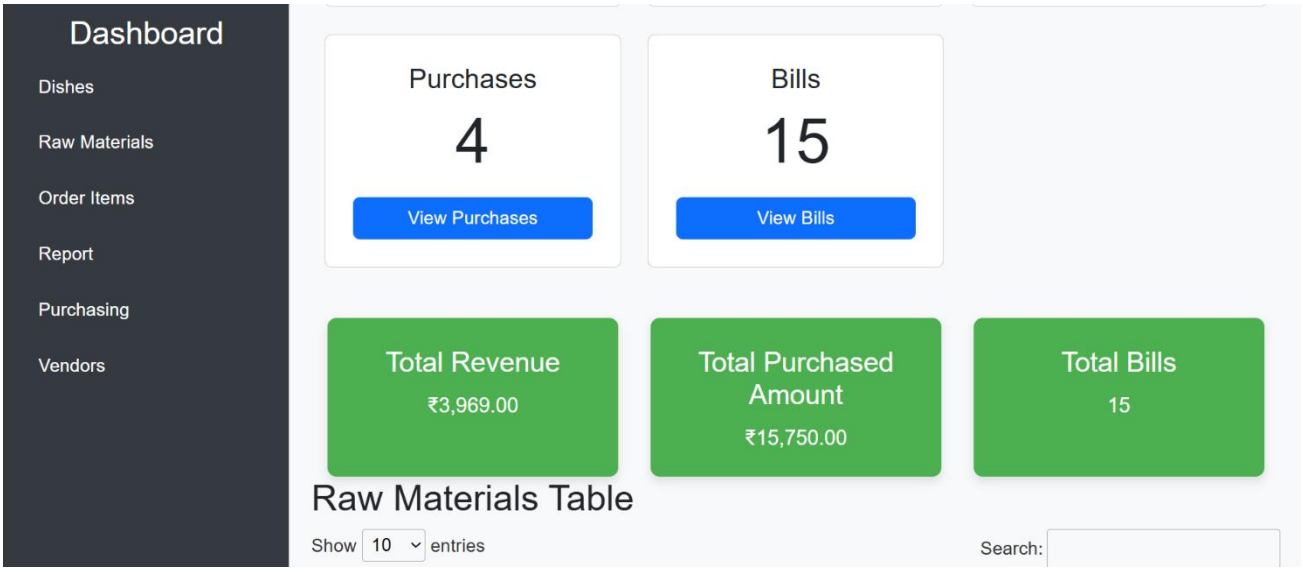
8. Acceptance Testing

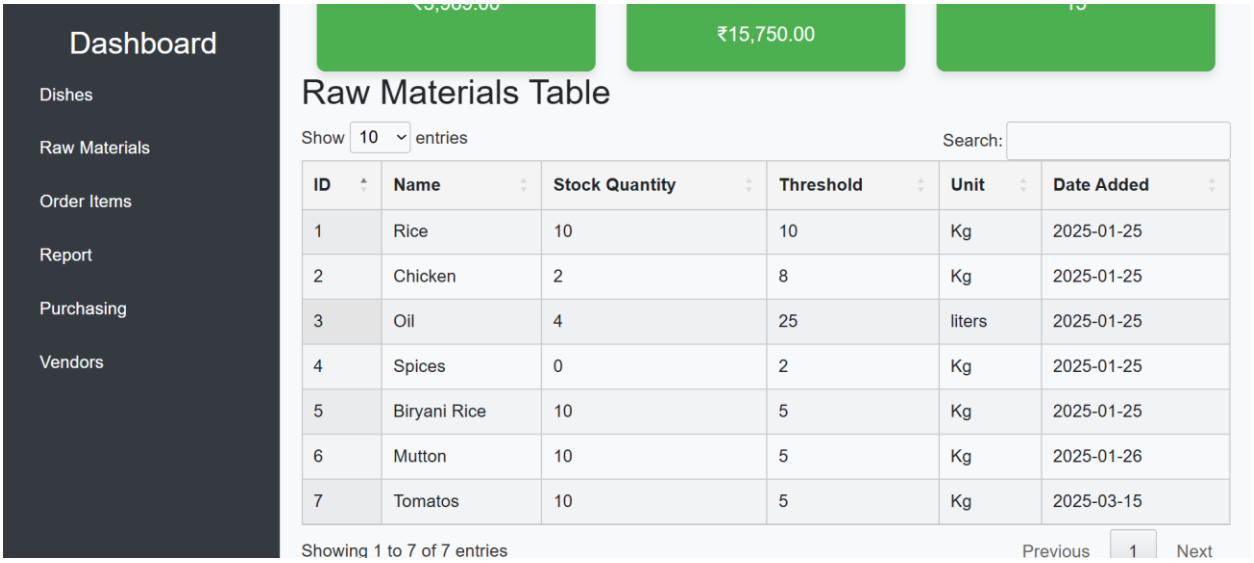
- Performed by restaurant owners, managers, and staff to ensure the system meets their expectations.
- Confirms that all required features, such as order tracking, billing, payment, and reporting, function correctly.
- Any remaining bugs or usability issues are addressed before final deployment.

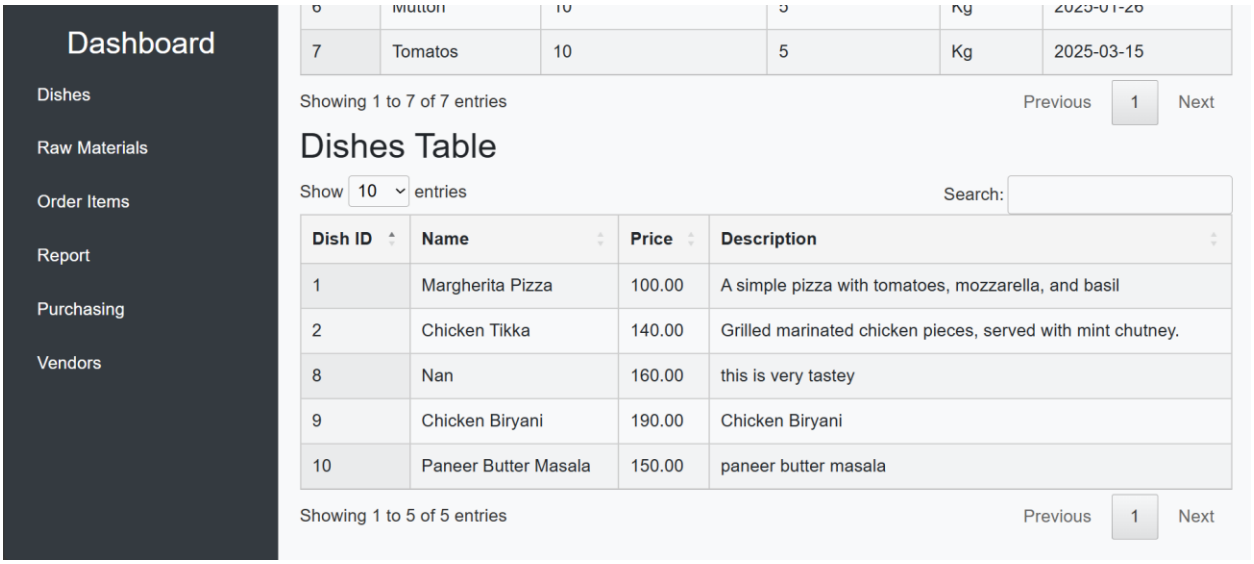
7. OUTPUT SCREENS



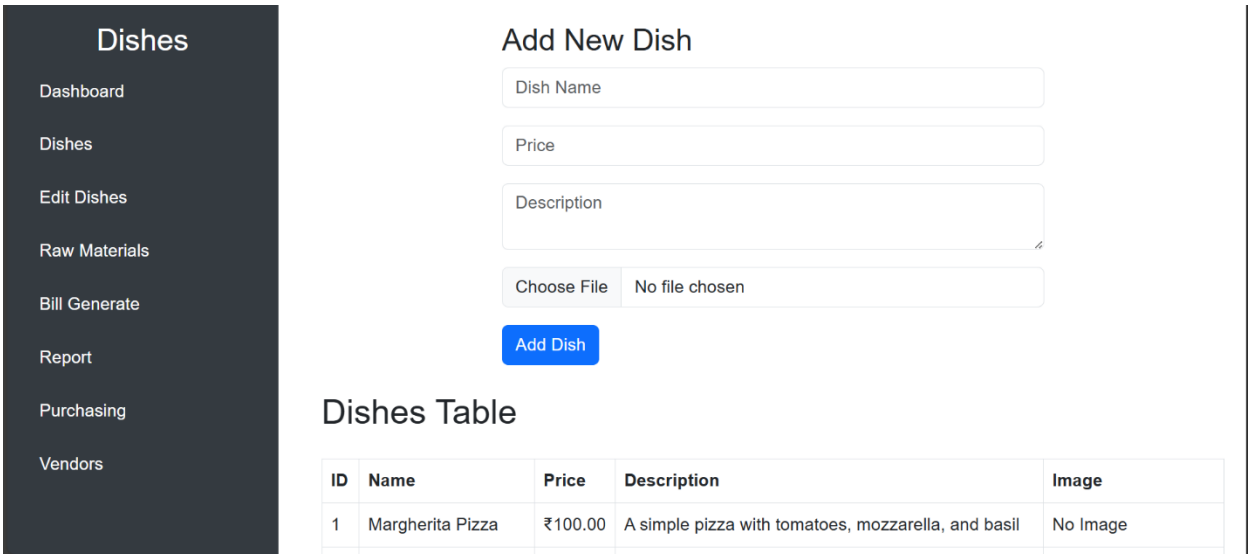
7.1 Home page

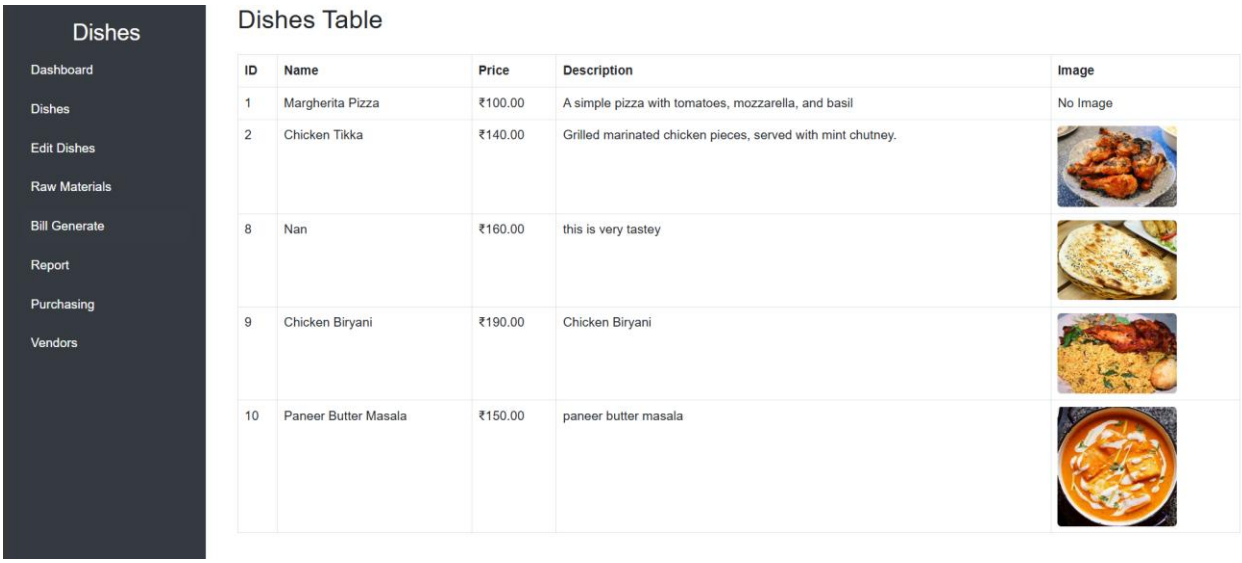



Dashboard
Dishes
Raw Materials
Order Items
Report
Purchasing
Vendors
₹15,750.00
Raw Materials Table
Show 10 entries
Search:
ID
Name
Stock Quantity
Threshold
Unit
Date Added
1 Rice 10 10 Kg 2025-01-25
2 Chicken 2 8 Kg 2025-01-25
3 Oil 4 25 liters 2025-01-25
4 Spices 0 2 Kg 2025-01-25
5 Biryani Rice 10 5 Kg 2025-01-25
6 Mutton 10 5 Kg 2025-01-26
7 Tomatos 10 5 Kg 2025-03-15
Showing 1 to 7 of 7 entries
Previous
1
Next


Dashboard
Dishes
Raw Materials
Order Items
Report
Purchasing
Vendors
7 Tomatos 10 5 Kg 2025-03-15
Showing 1 to 7 of 7 entries
Previous
1
Next
Dishes Table
Show 10 entries
Search:
Dish ID
Name
Price
Description
1 Margherita Pizza 100.00 A simple pizza with tomatoes, mozzarella, and basil
2 Chicken Tikka 140.00 Grilled marinated chicken pieces, served with mint chutney.
8 Nan 160.00 this is very tastey
9 Chicken Biryani 190.00 Chicken Biryani
10 Paneer Butter Masala 150.00 paneer butter masala
Showing 1 to 5 of 5 entries
Previous
1
Next

7.2 Dishes


Dishes
Dashboard
Dishes
Edit Dishes
Raw Materials
Bill Generate
Report
Purchasing
Vendors
Add New Dish
Dish Name
Price
Description
Choose File
No file chosen
Add Dish
Dishes Table
ID
Name
Price
Description
Image
1
Margherita Pizza
₹100.00
A simple pizza with tomatoes, mozzarella, and basil
No Image


Dishes
Dashboard
Dishes
Edit Dishes
Raw Materials
Bill Generate
Report
Purchasing
Vendors
Dishes Table
ID
Name
Price
Description
Image
1
Margherita Pizza
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A simple pizza with tomatoes, mozzarella, and basil
No Image
2
Chicken Tikka
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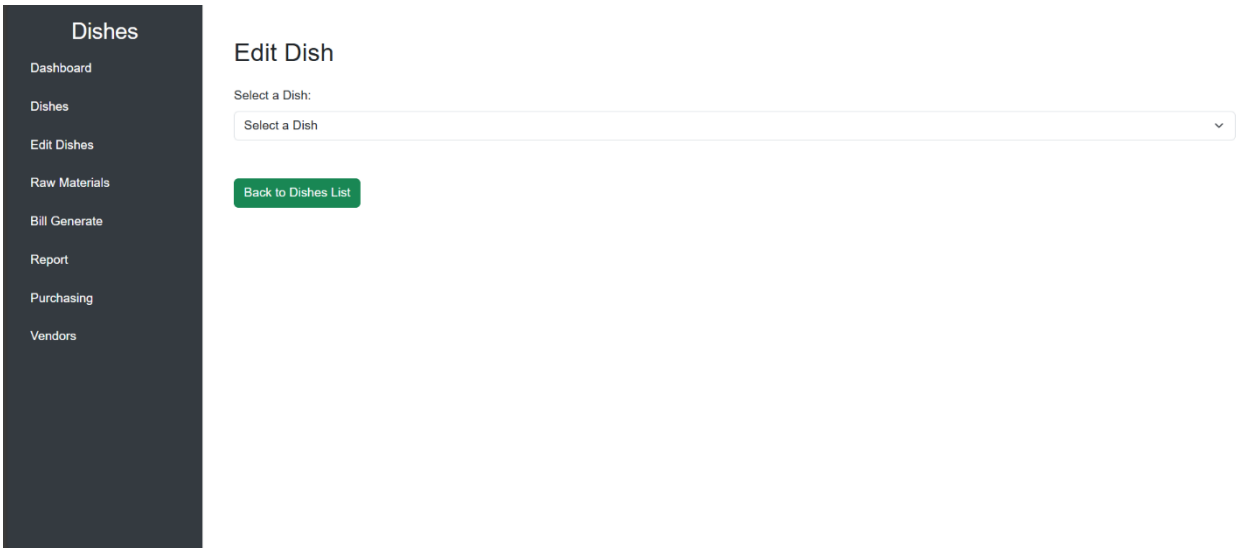
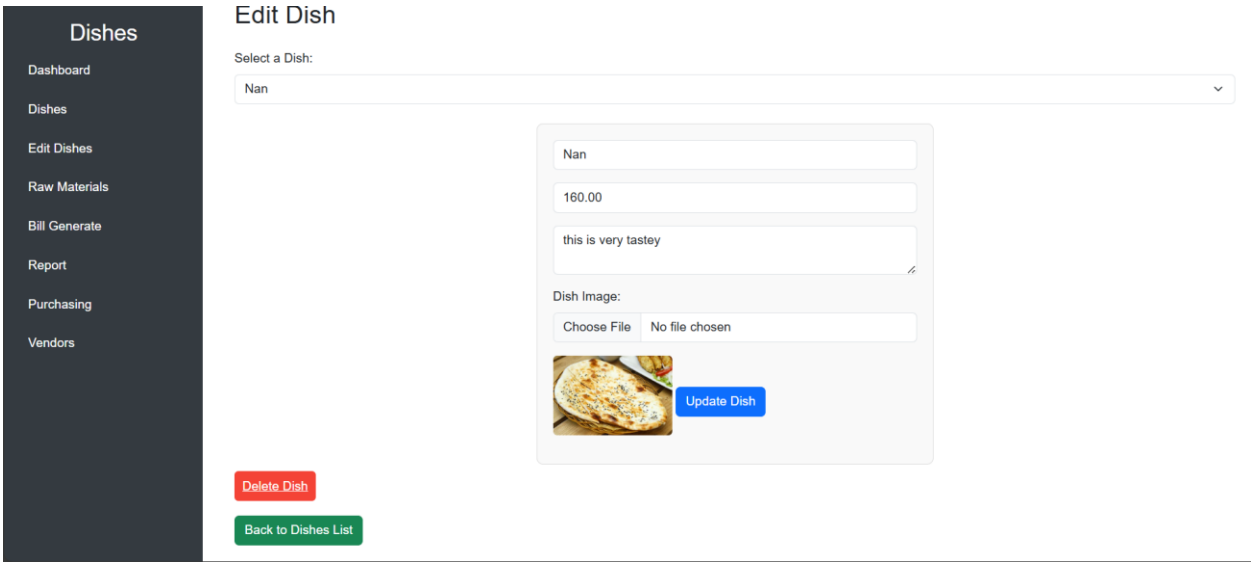
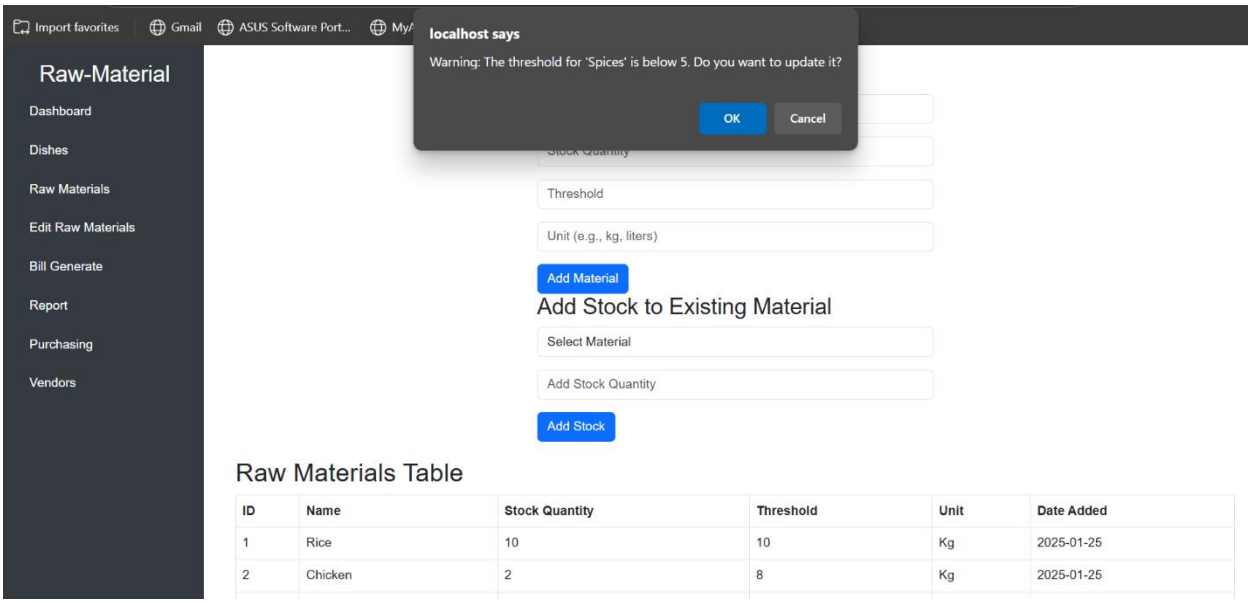
Grilled marinated chicken pieces, served with mint chutney.
8
Nan
₹160.00
this is very tastey
9
Chicken Biryani
₹190.00
Chicken Biryani
10
Paneer Butter Masala
₹150.00
paneer butter masala

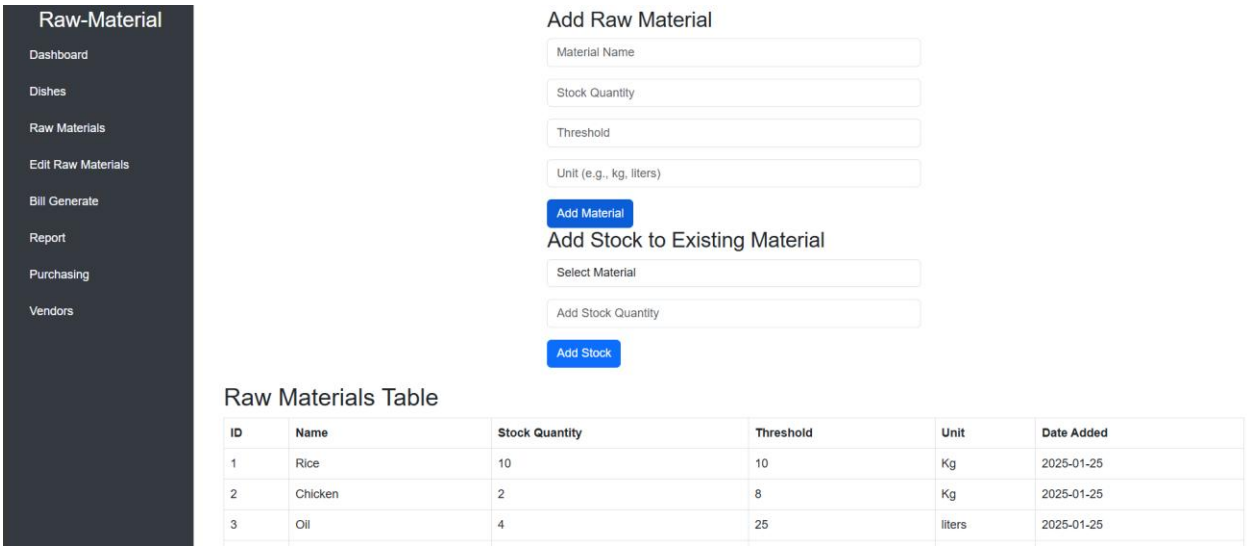
7.3 Edit Dishes



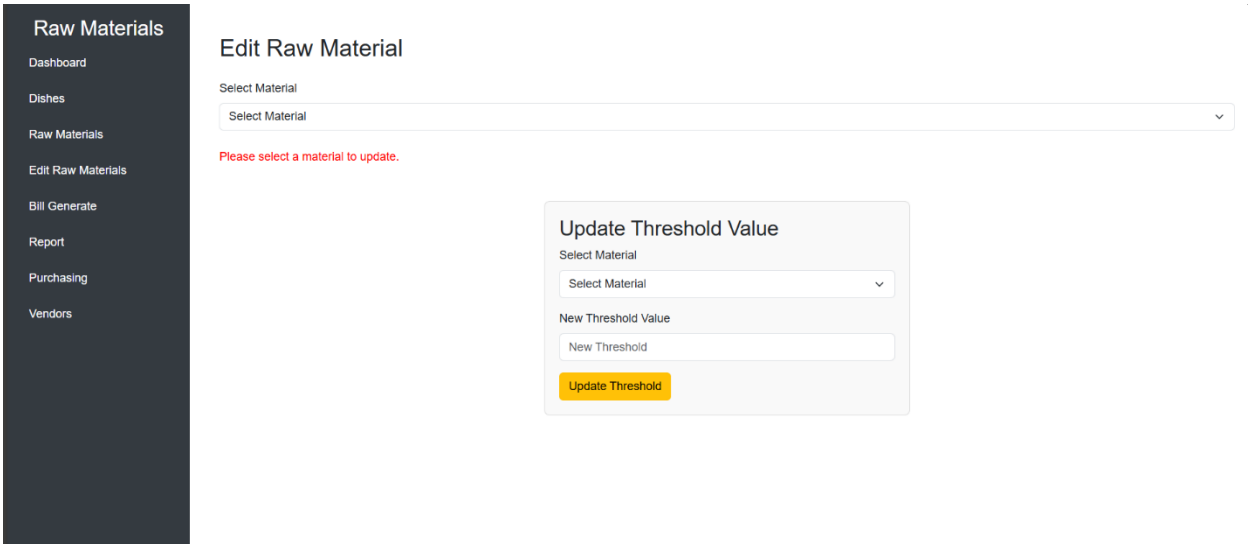


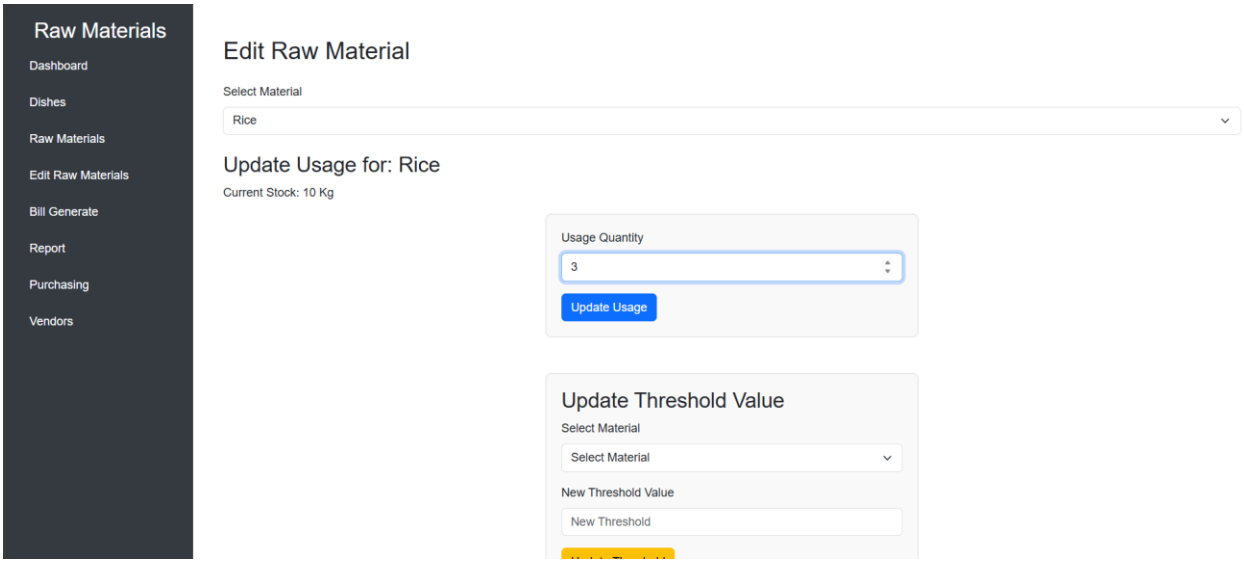
7.4 Raw Materials



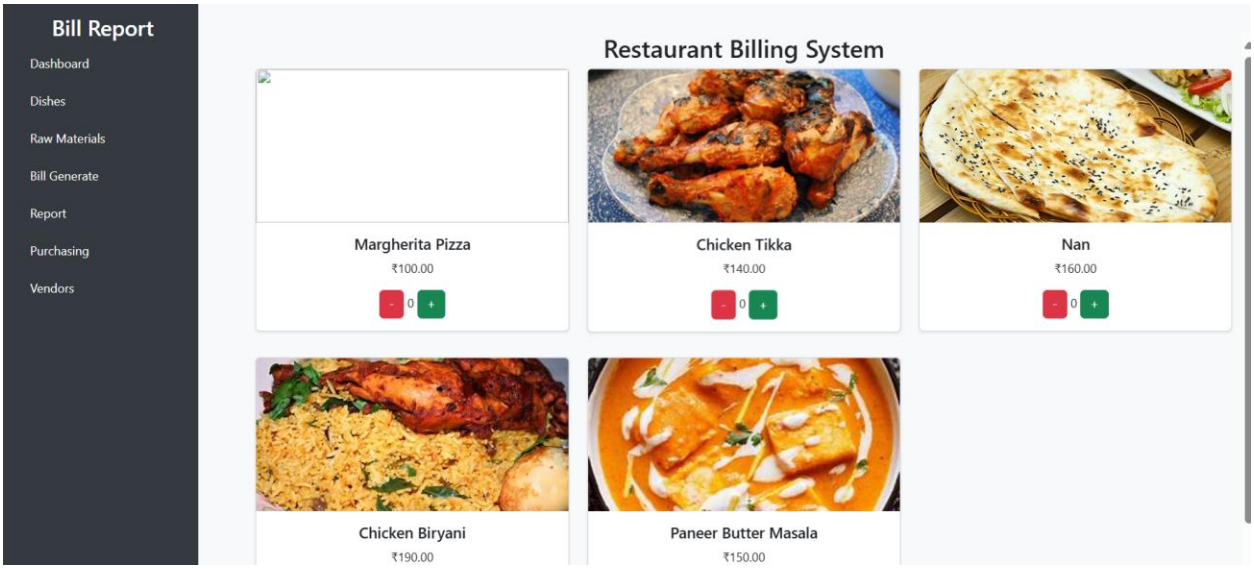


7.5 Edit Raw Materials

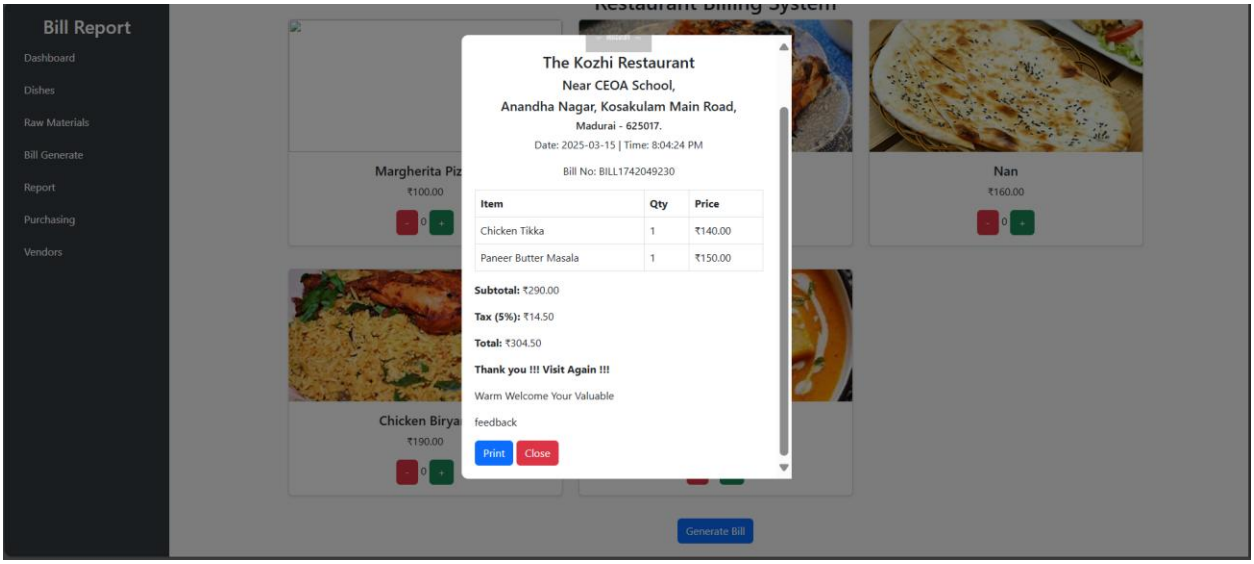




7.6 Bill Generate



7.7 Bill



7.8 Bill PDF

The Kozhi Restaurant

Near CEOA School,

Anandha Nagar, Kosakulam Main Road,

Madurai - 625017.

Date: 3/15/2025 | Time: 11:07:25 AM

Bill No: BILL1742017042

Item	Qty	Price
Margherita Pizza	1	₹100.00
Chicken Biryani	1	₹190.00

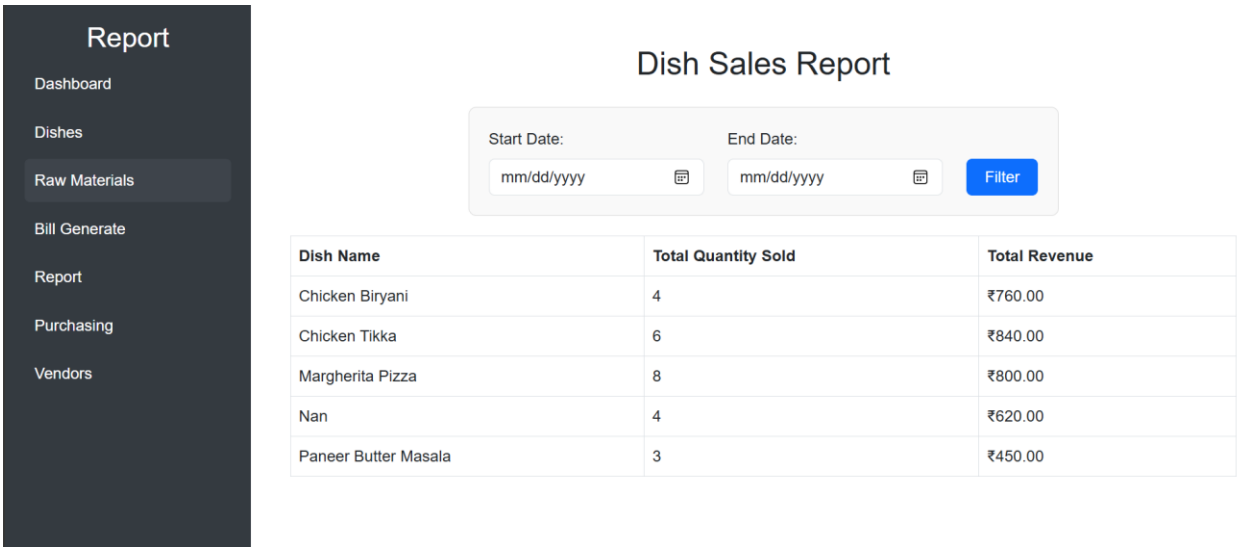
Subtotal: ₹290.00

Tax (5%): ₹14.50

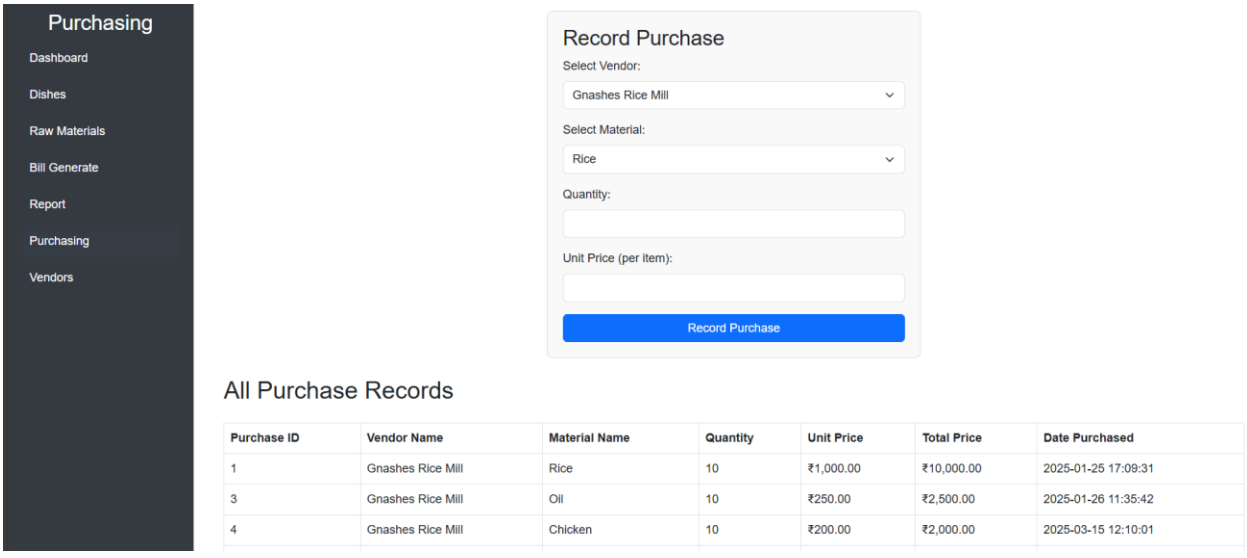
Total: ₹304.50

Print Close

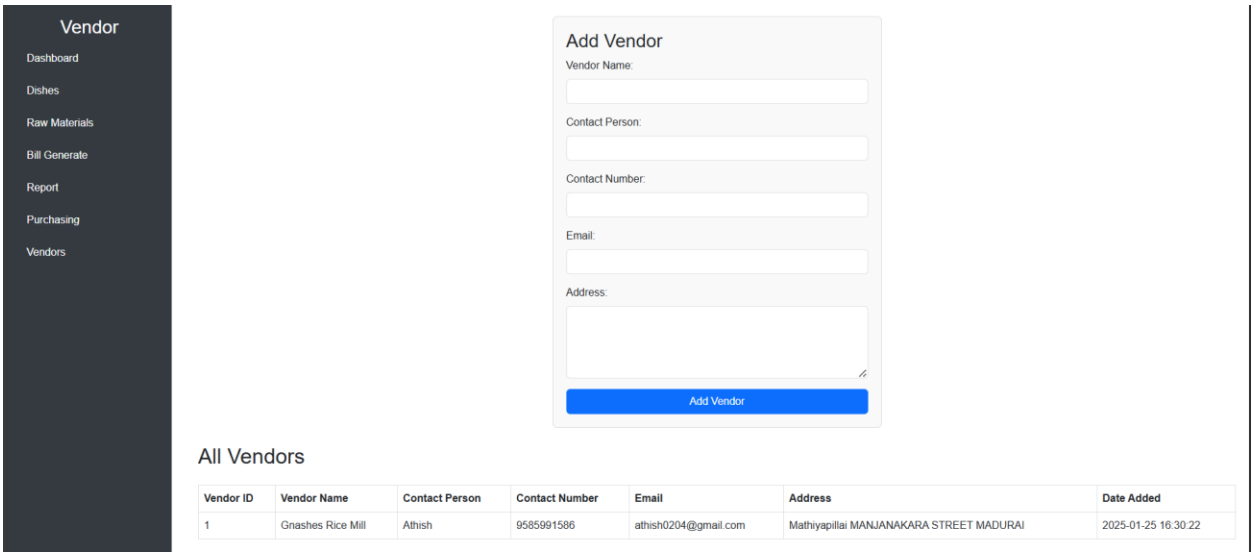
7.9 Report



7.10 Purchasing



7.11 Vendor


Vendor
Dashboard
Dishes
Raw Materials
Bill Generate
Report
Purchasing
Vendors
Add Vendor
Vendor Name:
Contact Person:
Contact Number:
Email:
Address:
Add Vendor
All Vendors
Vendor ID
Vendor Name
Contact Person
Contact Number
Email
Address
Date Added
1
Gnashes Rice Mill
Athish
9585991586
athish0204@gmail.com
Mathiyapillai MANJANAKARA STREET MADURAI
2025-01-25 16:30:22

8. CONCLUSION

The **Restaurant Billing System (RBS)** is a highly efficient and automated solution designed to streamline the **billing, payment, and order management** processes in restaurants. By integrating modern technologies such as **JavaScript, Bootstrap, and MySQL**, the system enhances **accuracy, speed, and customer convenience**, reducing the inefficiencies of traditional billing methods. It ensures **error-free calculations**, seamless **order tracking**, and supports multiple payment options, including **cash, credit/debit cards, UPI, and digital wallets**.

The system's **user-friendly interface** simplifies operations for restaurant staff, while its **real-time reporting and analytics** provide valuable insights for business owners to track sales, monitor transactions, and improve financial planning. Additionally, features like **split billing, tax management, and security measures** ensure a **hassle-free experience** for both customers and restaurant management.

Through rigorous **testing methodologies**, the system has been validated for **functionality, performance, security, and usability**, ensuring reliability in real-world operations. By automating the billing process, the system significantly **reduces human errors, enhances customer satisfaction, and improves operational efficiency**, contributing to a more **profitable and modernized restaurant business**.

In conclusion, the **Restaurant Billing System** is a **scalable, secure, and innovative solution** that meets the evolving needs of the restaurant industry, making billing and payment management **simpler, faster, and more efficient**.

9. FURTHER ENHANCEMENTS

1. Cloud-Based Integration

Migrating the system to a cloud-based platform will allow restaurant owners to access sales data, reports, and billing operations from anywhere. It enables real-time synchronization across multiple branches, making it ideal for restaurant chains.

2. AI-Powered Sales Prediction & Analytics

Implementing Artificial Intelligence (AI) and Machine Learning (ML) can help predict customer preferences, sales trends, and peak business hours. Smart recommendations for menu items based on order history can improve customer engagement.

3. Mobile App Development

A dedicated mobile app for both restaurant staff and customers can enhance the ordering and payment process. Customers can view menus, place orders, and make payments online, reducing wait times.

4. QR Code-Based Ordering & Payment

Customers can scan a QR code at their table to place orders and make payments without waiting for staff. This will improve customer convenience and reduce the dependency on waiters.

5. Integration with Online Food Delivery Services

Linking the system with platforms like Zomato, Swiggy, and Uber Eats can expand business reach. Automated order processing for online and in-house dining can enhance efficiency.

6. Advanced Inventory Management

Real-time tracking of ingredient usage and stock levels can help restaurants avoid shortages. Automated low-stock alerts and supplier order suggestions can streamline inventory control.

7. Customer Loyalty Programs

Implementing a loyalty system with reward points, discount vouchers, and cashback offers can attract and retain customers. Personalized offers based on customer purchase history can enhance engagement.

8. Voice Command & Chatbot Assistance

A voice-enabled ordering system can allow customers to place orders using AI-powered voice recognition. A chatbot can assist in answering customer queries and providing menu recommendations.

9. Enhanced Security Features

Implementing two-factor authentication (2FA) for staff logins can prevent unauthorized access. End-to-end encryption for customer payment details will enhance data security.

10. REFERENCES

1. Brown, A., & Wilson, J. (2021). ***Optimizing Restaurant Billing Systems: Enhancing Efficiency through Automation.*** **Journal of Hospitality Technology,** 28(3), 56-78**.**

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4. Deloitte Insights. (2022). ***Digital Transformation in the Restaurant Industry: Leveraging Technology for Seamless Payment Processing.*** **Retrieved from** **https://www2.deloitte.com**

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6. National Restaurant Association (2021). ***Best Practices for Secure and Efficient Restaurant Billing Systems.*** **Restaurant Technology Guidelines, Version** 6.2**.**

7. jQuery - **https://www.tutorialspoint.com/jquery/index.htm**

8. Bootstrap - **https://getbootstrap.com/docs/4.5/getting-started/introduction/**

9. Ajax - **https://www.w3schools.com/jquery/ajax_ajax.asp**

10. Datatables - **https://datatables.net/manual/**

11. PHP - **https://www.w3schools.com/php/**

12. MySQL - **https://www.w3schools.com/mysql/**

11. APPENDICES

11.1 USER DOCUMENTATION

INSTALLSTION INSTRUCTIONS

Installation Steps for the Restaurant Billing System (PHP & MySQL)

1. Install XAMPP (or any local server) to run Apache and MySQL.
2. Download the project files and place them in the htdocs folder (inside the XAMPP installation directory).
3. Start Apache and MySQL from the XAMPP control panel.
4. Create a database in phpMyAdmin and import the provided .sql file.
5. Configure database credentials in the config.php file (update database name, username, and password).
6. Open a web browser and go to
7. Copy code
8. http://localhost/your_project_folder
9. Login using admin credentials (if provided) or create a new account.

11.2 README

11.2.1 Features

Key Features:

1. **User Account Management** – Users can create and manage their accounts for easy access to billing and transaction history.

2. **Order Processing & Billing** – Generates **itemized bills** with automatic tax and discount calculations.
3. **Mobile Responsive Design** – Ensures a smooth experience on **desktops, tablets, and mobile devices**.
4. **Bill Modification & Cancellation** – Allows users to **cancel or modify** bills before payment.
5. **Billing History & Reports** – Users can **view past transactions**, including confirmed and canceled bills.
6. **Downloadable PDF Bills** – Customers can download **bills and invoices in PDF format** for future reference.
7. **As-you-type Search** – Provides **real-time search functionality** to quickly find menu items or past transactions.

8. Technical Overview:

The system is structured into well-defined **files and directories** for better organization and maintainability:

- **Core System Directory** – Contains essential files for **configuration, routing, and system utilities**.
- **Billing Application Directory** – Manages all **static files (CSS, JavaScript, images), templates, and database models**.
- **Templates & Pages** – Includes key templates such as:
    - index.html – Homepage for the system.
    - billing.html – Bill generation and order processing page.
    - transactions.html – Displays billing history for users.
    - payment.html – Secure payment processing page.
    - receipt.html – Printable and downloadable bill format.
- **Database Models** – Stores **menu items, orders, transaction details, and user data** securely.
- **AJAX & JavaScript Functionality** – Enhances user interactivity, including real-time **bill updates and search**.
- **HTML-to-PDF Conversion** – Generates **printable PDF bills** for easy documentation.

11.3 SAMPLE SOURCE PROGRAM

```
<?php

// Database connection

$servername = "localhost";

$username = "root";

$password = "";

$dbname = "restaurant_db";


$conn = new mysqli($servername, $username, $password, $dbname);


if ($conn->connect_error) {

    die("Connection failed: " . $conn->connect_error);

}


// Fetch counts for dashboard cards

$dishesCount = $conn->query("SELECT COUNT(*) AS count FROM dishes")->fetch_assoc()['count'];

$rawMaterialsCount = $conn->query("SELECT COUNT(*) AS count FROM raw_materials")->fetch_assoc()['count'];

$vendorsCount = $conn->query("SELECT COUNT(*) AS count FROM vendors")->fetch_assoc()['count'];
```

```
$purchasesCount = $conn->query("SELECT COUNT(*) AS count FROM purchases")->fetch_assoc()['count'];

$billsCount = $conn->query("SELECT COUNT(*) AS count FROM bills")->fetch_assoc()['count'];


// Fetch raw materials and dishes data

$materialsQuery = "SELECT * FROM raw_materials";

$materialsResult = $conn->query($materialsQuery);


$dishesQuery = "SELECT * FROM dishes";

$dishesResult = $conn->query($dishesQuery);


$totalRevenueQuery = "SELECT SUM(total) AS total_revenue FROM bills";

$totalRevenueResult = $conn->query($totalRevenueQuery);

$totalRevenue = $totalRevenueResult->fetch_assoc()['total_revenue'];


$totalPurchasedAmountQuery = "SELECT SUM(total_amount) AS total_purchased_amount FROM purchases";

$totalPurchasedAmountResult = $conn->query($totalPurchasedAmountQuery);

$totalPurchasedAmount = $totalPurchasedAmountResult->fetch_assoc()['total_purchased_amount'];


$conn->close();

?>
```

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Restaurant Management Dashboard</title>
    <link href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.0/dist/css/bootstrap.min.css" rel="stylesheet">
    <link href="https://cdn.datatables.net/1.12.1/css/jquery.dataTables.min.css" rel="stylesheet">
    <style>
        body {
            font-family: Arial, sans-serif;
            background-color: #f8f9fa;
            margin: 0;
            padding: 0;
            display: flex;
            min-height: 100vh;
        }
        .sidebar {
            width: 250px;
            background-color: #343a40;
            color: white;
```

```
    padding: 20px;
    position: fixed;
    height: 100vh; /* Full height */
    overflow-y: auto; /* Scrollable if content exceeds height */
}
.sidebar a {
    color: white;
    text-decoration: none;
    display: block;
    padding: 10px;
    margin: 5px 0;
    border-radius: 5px;
    transition: background-color 0.3s;
}
.sidebar a:hover {
    background-color: #495057;
}
.main-content {
    margin-left: 250px; /* Same as sidebar width */
    flex: 1;
    padding: 20px;
}
.dashboard-header {
```

```
    background-color: #ffffff;
    padding: 20px;
    border-bottom: 1px solid #ddd;
}
.card {
    transition: transform 0.3s;
}
.card:hover {
    transform: scale(1.05);
}
.highlight-section {
    display: flex;
    justify-content: space-around;
    margin-top: 20px;
}
.highlight-box {
    background-color: #4CAF50;
    color: white;
    padding: 15px;
    border-radius: 8px;
    width: 30%;
    text-align: center;
    box-shadow: 0 4px 8px rgba(0, 0, 0, 0.1);
```

```
}
.highlight-box h3 {
    margin: 10px 0;
    font-size: 24px;
}
.highlight-box p {
    font-size: 18px;
    margin: 5px 0;
}
table {
    width: 100%;
    border-collapse: collapse;
    margin-top: 20px;
}
table, th, td {
    border: 1px solid #ccc;
}
th, td {
    text-align: left;
    padding: 8px;
}
th {
    background-color: #f4f4f4;
```

```
        }
    </style>
</head>
<body>
    <!-- Sidebar -->
    <div class="sidebar">
        <h3 class="text-center">Dashboard</h3>
        <a href="dish.php">Dishes</a>
        <a href="rawmaterial.php">Raw Materials</a>
        <a href="orderitem.php">Order Items</a>
        <a href="report.php">Report</a>
        <a href="purchasing.php">Purchasing</a>
        <a href="vendor.php">Vendors</a>
    </div>

    <!-- Main Content -->
    <div class="main-content">
        <div class="dashboard-header">
            <h2>Restaurant Management System</h2>
        </div>
        <div class="container mt-4">
            <h3>Overview</h3>
            <div class="row">
```

```
<!-- Dishes Card -->
<div class="col-md-4 mb-4">
    <div class="card text-center p-4">
        <h4>Dishes</h4>
        <p class="display-4"><?php echo $dishesCount; ?></p>
        <a href="dish.php" class="btn btn-primary">View Dishes</a>
    </div>
</div>

<!-- Raw Materials Card -->
<div class="col-md-4 mb-4">
    <div class="card text-center p-4">
        <h4>Raw Materials</h4>
        <p class="display-4"><?php echo $rawMaterialsCount; ?></p>
        <a href="rawmaterial.php" class="btn btn-primary">View Raw Materials</a>
    </div>
</div>

<!-- Vendors Card -->
<div class="col-md-4 mb-4">
    <div class="card text-center p-4">
        <h4>Vendors</h4>
        <p class="display-4"><?php echo $vendorsCount; ?></p>
```

```
            <a href="vendor.php" class="btn btn-primary">View Vendors</a>
        </div>
    </div>

    <!-- Purchases Card -->
    <div class="col-md-4 mb-4">
        <div class="card text-center p-4">
            <h4>Purchases</h4>
            <p class="display-4"><?php echo $purchasesCount; ?></p>
            <a href="purchasing.php" class="btn btn-primary">View Purchases</a>
        </div>
    </div>

    <!-- Bills Card -->
    <div class="col-md-4 mb-4">
        <div class="card text-center p-4">
            <h4>Bills</h4>
            <p class="display-4"><?php echo $billsCount; ?></p>
            <a href="report.php" class="btn btn-primary">View Bills</a>
        </div>
    </div>
  </div>
</div>
```

```
<!-- Highlight Section -->
<div class="highlight-section">
    <div class="highlight-box">
        <h3>Total Revenue</h3>
        <p>₹<?php echo number_format($totalRevenue, 2); ?></p>
    </div>
    <div class="highlight-box">
         <h3>Total Purchased Amount</h3>
         <p>₹<?php echo number_format($totalPurchasedAmount, 2); ?></p>
    </div>
    <div class="highlight-box">
        <h3>Total Bills</h3>
        <p><?php echo $billsCount; ?></p>
    </div>
</div>

<!-- Raw Materials Table -->
<h2>Raw Materials Table</h2>
<?php if ($materialsResult->num_rows > 0): ?>
    <table id="materialsTable" class="display">
        <thead>
            <tr>
```

```
                <th>ID</th>
                <th>Name</th>
                <th>Stock Quantity</th>
                <th>Threshold</th>
                <th>Unit</th>
                <th>Date Added</th>
            </tr>
        </thead>
        <tbody>
            <?php while($material = $materialsResult->fetch_assoc()): ?>
                <tr>
                    <td><?php echo $material["material_id"]; ?></td>
                    <td><?php echo $material["name"]; ?></td>
                    <td><?php echo $material["stock_quantity"]; ?></td>
                    <td><?php echo $material["threshold"]; ?></td>
                    <td><?php echo $material["unit"]; ?></td>
                    <td><?php echo $material["date_added"]; ?></td>
                </tr>
            <?php endwhile; ?>
        </tbody>
    </table>
<?php else: ?>
    <p>No materials found in the database.</p>
```

```
<?php endif; ?>


<!-- Dishes Table -->
<h2>Dishes Table</h2>
<?php if ($dishesResult->num_rows > 0): ?>
    <table id="dishesTable" class="display">
        <thead>
            <tr>
                <th>Dish ID</th>
                <th>Name</th>
                <th>Price</th>
                <th>Description</th>
            </tr>
        </thead>
        <tbody>
            <?php while($dish = $dishesResult->fetch_assoc()): ?>
                <tr>
                    <td><?php echo $dish["dish_id"]; ?></td>
                    <td><?php echo $dish["name"]; ?></td>
                    <td><?php echo $dish["price"]; ?></td>
                    <td><?php echo $dish["description"]; ?></td>
                </tr>
            <?php endwhile; ?>
```

```
            </tbody>
        </table>
    <?php else: ?>
        <p>No dishes found in the database.</p>
    <?php endif; ?>
</div>

<script src="https://code.jquery.com/jquery-3.6.0.min.js"></script>
<script src="https://cdn.datatables.net/1.12.1/js/jquery.dataTables.min.js"></script>
<script>
    $(document).ready(function() {
        $('#materialsTable').DataTable();
        $('#dishesTable').DataTable();
    });
</script>
<script
src="https://cdn.jsdelivr.net/npm/bootstrap@5.3.0/dist/js/bootstrap.bundle.min.js"></script>
</body>
</html>
```

Rawmaterial.php

```
<?php
```

```
// Database connection details
$servername = "localhost";
$username = "root";
$password = "";
$dbname = "restaurant_db";

// Create connection
$conn = new mysqli($servername, $username, $password, $dbname);

// Check connection
if ($conn->connect_error) {
    die("Connection failed: " . $conn->connect_error);
}

// Initialize message variable
$message = "";

// Handle form submission for adding new material
if ($_SERVER["REQUEST_METHOD"] == "POST" && isset($_POST["add_material"])) {
    $name = $conn->real_escape_string($_POST["material_name"]);
    $stockQuantity = (int) $_POST["stock_quantity"];
    $threshold = (int) $_POST["threshold"];
    $unit = $conn->real_escape_string($_POST["unit"]);
```

```
$dateAdded = date("Y-m-d"); // Current date

// Check if material already exists
$checkSql = $conn->prepare("SELECT * FROM raw_materials WHERE name = ?");
$checkSql->bind_param("s", $name);
$checkSql->execute();
$result = $checkSql->get_result();

if ($result->num_rows > 0) {
    $message = "<div class='alert alert-warning'>Material already exists. Please update the stock instead.</div>";
} else {
    // Insert new material
    $insertSql = $conn->prepare("INSERT INTO raw_materials (name, stock_quantity, threshold, unit, date_added) VALUES (?, ?, ?, ?, ?)");
    $insertSql->bind_param("siiss", $name, $stockQuantity, $threshold, $unit, $dateAdded);
    if ($insertSql->execute()) {
        $message = "<div class='alert alert-success'>Material added successfully!</div>";
    } else {
        $message = "<div class='alert alert-danger'>Error: " . $conn->error . "</div>";
    }
    $insertSql->close();
}
```

```
    $checkSql->close();
}

// Handle form submission for adding stock to existing material
if ($_SERVER["REQUEST_METHOD"] == "POST" && isset($_POST["add_stock"])) {
    $materialId = (int) $_POST["material_id"];
    $additionalStock = (int) $_POST["additional_stock"];

    // Update stock quantity
    $updateSql = $conn->prepare("UPDATE raw_materials SET stock_quantity = stock_quantity
+ ? WHERE material_id = ?");
    $updateSql->bind_param("ii", $additionalStock, $materialId);
    if ($updateSql->execute()) {
        $message = "<div class='alert alert-success'>Stock added successfully!</div>";
    } else {
        $message = "<div class='alert alert-danger'>Error: " . $conn->error . "</div>";
    }
    $updateSql->close();
}

// Fetch all raw materials
$materials = [];
$sql = "SELECT * FROM raw_materials";
```

```
$result = $conn->query($sql);
if ($result->num_rows > 0) {
    while ($row = $result->fetch_assoc()) {
        $materials[] = $row;
    }
}

$conn->close();
?>
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Raw Materials Management</title>
    <link href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.0/dist/css/bootstrap.min.css" rel="stylesheet">
    <style>
        body { font-family: Arial, sans-serif; }
        .form-container { max-width: 500px; margin: 0 auto; }
        .table-container { margin-top: 20px; }
        .sidebar {
            width: 250px;
```

```
    background-color: #343a40;
    color: white;
    padding: 20px;
    position: fixed;
    height: 100vh; /* Full height */
    overflow-y: auto; /* Scrollable if content exceeds height */
}
.sidebar a {
    color: white;
    text-decoration: none;
    display: block;
    padding: 10px;
    margin: 5px 0;
    border-radius: 5px;
    transition: background-color 0.3s;
}
.sidebar a:hover {
    background-color: #495057;
}
.main-content {
    margin-left: 270px; /* Adjust for sidebar width */
    padding: 20px;
}
```

```
    </style>
</head>
<body>
    <!-- Sidebar -->
    <div class="sidebar">
        <h3 class="text-center">Raw-Material</h3>
        <a href="index.php">Dashboard</a>
        <a href="dish.php">Dishes</a>
        <a href="rawmaterial.php">Raw Materials</a>
        <a href="editrawmaterial.php">Edit Raw Materials</a>
        <a href="orderitem.php">Bill Generate</a>
        <a href="report.php">Report</a>
        <a href="purchasing.php">Purchasing</a>
        <a href="vendor.php">Vendors</a>
    </div>

    <!-- Main Content -->
    <div class="main-content">
        <!-- Display feedback message -->
        <?php if (!empty($message)) echo $message; ?>

        <!-- Form to add new material -->
        <div class="form-container">
```

```
        <h3>Add Raw Material</h3>
        <form method="POST" action="">
            <div class="mb-3">
                <input type="text" class="form-control" name="material_name" placeholder="Material Name" required>
            </div>
            <div class="mb-3">
                <input type="number" class="form-control" name="stock_quantity" placeholder="Stock Quantity" required>
            </div>
            <div class="mb-3">
                <input type="number" class="form-control" name="threshold" placeholder="Threshold" required>
            </div>
            <div class="mb-3">
                <input type="text" class="form-control" name="unit" placeholder="Unit (e.g., kg, liters)" required>
            </div>
            <button type="submit" name="add_material" class="btn btn-primary">Add Material</button>
        </form>
    </div>

    <!-- Form to add stock to existing material -->
```

```
<div class="form-container">
    <h3>Add Stock to Existing Material</h3>
    <form method="POST" action="">
        <div class="mb-3">
            <select class="form-control" name="material_id" required>
                <option value="">Select Material</option>
                <?php foreach ($materials as $material): ?>
                    <option value="<?php echo $material['material_id']; ?>"><?php echo $material['name']; ?></option>
                <?php endforeach; ?>
            </select>
        </div>
        <div class="mb-3">
            <input type="number" class="form-control" name="additional_stock" placeholder="Add Stock Quantity" required>
        </div>
        <button type="submit" name="add_stock" class="btn btn-primary">Add Stock</button>
    </form>
</div>

<!-- Display the raw materials table -->
<div class="table-container">
```

```
<h2>Raw Materials Table</h2>

<?php if (count($materials) > 0): ?>

    <table class="table table-bordered">

        <thead>

            <tr>

                <th>ID</th>

                <th>Name</th>

                <th>Stock Quantity</th>

                <th>Threshold</th>

                <th>Unit</th>

                <th>Date Added</th>

            </tr>

        </thead>

        <tbody>

            <?php foreach ($materials as $material): ?>

                <tr>

                    <td><?php echo $material["material_id"]; ?></td>

                    <td><?php echo $material["name"]; ?></td>

                    <td><?php echo $material["stock_quantity"]; ?></td>

                    <td><?php echo $material["threshold"]; ?></td>

                    <td><?php echo $material["unit"]; ?></td>

                    <td><?php echo $material["date_added"]; ?></td>

                </tr>
```

```
                <?php endforeach; ?>
            </tbody>
        </table>
    <?php else: ?>
        <p class="text-center">No materials found in the database.</p>
    <?php endif; ?>
  </div>
</div>

<script src="https://cdn.jsdelivr.net/npm/bootstrap@5.3.0/dist/js/bootstrap.bundle.min.js"></script>
<script>
  function checkThreshold(name, threshold) {
    if (threshold < 5) {
      setTimeout(function() {
        var confirmUpdate = confirm("Warning: The threshold for '" + name + "' is below 5. Do you want to update it?");
        if (confirmUpdate) {
          window.location.href = "editrawmaterial.php";
        }
      }, 500);
    }
  }
```

```
        <?php foreach ($materials as $material): ?>
            checkThreshold("<?php echo $material['name']; ?>", <?php echo $material['threshold']; ?>);
        <?php endforeach; ?>
    </script>
</body>
</html>
```

Dish.php

```
<?php
// Database connection details
$servername = "localhost";
$username = "root";
$password = "";
$dbname = "restaurant_db";

// Create connection
$conn = new mysqli($servername, $username, $password, $dbname);

// Check connection
if ($conn->connect_error) {
    die("Connection failed: " . $conn->connect_error);
```

```
}

// Handle form submission
$message = ""; // Variable to store feedback messages
if ($_SERVER["REQUEST_METHOD"] == "POST" && isset($_POST["add_dish"])) {
    // Get form data
    $name = $conn->real_escape_string($_POST["dish_name"]);
    $price = (float) $_POST["price"];
    $description = $conn->real_escape_string($_POST["description"]);

    // Handle image upload
    if (isset($_FILES["dish_image"]) && $_FILES["dish_image"]["error"] == 0) {
        $targetDir = "uploads/"; // Directory to store uploaded images
        if (!is_dir($targetDir)) {
            mkdir($targetDir, 0755, true); // Create the directory if it doesn't exist
        }

        $fileName = basename($_FILES["dish_image"]["name"]);
        $targetFilePath = $targetDir . uniqid() . "_" . $fileName; // Unique filename to avoid conflicts
        $fileType = strtolower(pathinfo($targetFilePath, PATHINFO_EXTENSION));

        // Allow only certain file formats
        $allowedTypes = ["jpg", "jpeg", "png", "gif"];
```

```
    if (in_array($fileType, $allowedTypes)) {
        // Check file size (max 2MB)
        if ($_FILES["dish_image"]["size"] <= 2 * 1024 * 1024) {
            // Upload file to server
            if (move_uploaded_file($_FILES["dish_image"]["tmp_name"], $targetFilePath)) {
                // Insert new dish into the database with image path
                  $stmt = $conn->prepare("INSERT INTO dishes (name, price, description, image)
VALUES (?, ?, ?, ?)");
                $stmt->bind_param("sdss", $name, $price, $description, $targetFilePath);

                if ($stmt->execute()) {
                    $message = "<div class='alert alert-success'>Dish added successfully!</div>";
                } else {
                    $message = "<div class='alert alert-danger'>Error: " . $stmt->error . "</div>";
                }
                $stmt->close();
            } else {
                $message = "<div class='alert alert-danger'>Error uploading image.</div>";
            }
        } else {
            $message = "<div class='alert alert-danger'>Image size must be less than 2MB.</div>";
        }
    } else {
```

```
            $message = "<div class='alert alert-danger'>Only JPG, JPEG, PNG, and GIF files are allowed.</div>";
        }
    } else {
        $message = "<div class='alert alert-danger'>Please select an image for the dish.</div>";
    }
}

// Fetch all dishes
$dishes = [];
$sql = "SELECT * FROM dishes";
$result = $conn->query($sql);
if ($result->num_rows > 0) {
    while ($row = $result->fetch_assoc()) {
        $dishes[] = $row;
    }
}

// Close connection
$conn->close();
?>

<!DOCTYPE html>
```

```
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Dishes Management</title>
        <link href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.0/dist/css/bootstrap.min.css"
rel="stylesheet">
    <style>
        body { font-family: Arial, sans-serif; }
        .form-container { max-width: 500px; margin: 0 auto; }
        .table-container { margin-top: 20px; }
        .sidebar {
            width: 250px;
            background-color: #343a40;
            color: white;
            padding: 20px;
            position: fixed;
            height: 100vh; /* Full height */
            overflow-y: auto; /* Scrollable if content exceeds height */
        }
        .sidebar a {
            color: white;
            text-decoration: none;
```

```
            display: block;
            padding: 10px;
            margin: 5px 0;
            border-radius: 5px;
            transition: background-color 0.3s;
        }
        .sidebar a:hover {
            background-color: #495057;
        }
        .dish-image {
            width: 150px; /* Medium size */
            height: auto; /* Maintain aspect ratio */
            border-radius: 5px; /* Optional: Add rounded corners */
        }
        .main-content {
            margin-left: 270px; /* Adjust for sidebar width */
            padding: 20px;
        }
    </style>
</head>
<body>
    <!-- Sidebar -->
    <div class="sidebar">
```

```
        <h3 class="text-center">Dishes</h3>
        <a href="index.php">Dashboard</a>
        <a href="dish.php">Dishes</a>
        <a href="editdish.php">Edit Dishes</a>
        <a href="rawmaterial.php">Raw Materials</a>
        <a href="orderitem.php">Bill Generate</a>
        <a href="report.php">Report</a>
        <a href="purchasing.php">Purchasing</a>
        <a href="vendor.php">Vendors</a>
    </div>

    <!-- Main Content -->
    <div class="main-content">
        <!-- Display feedback message -->
        <?php if (!empty($message)) echo $message; ?>

        <!-- Form to add dishes -->
        <div class="form-container">
            <h3>Add New Dish</h3>
            <form method="POST" action="" enctype="multipart/form-data">
                <div class="mb-3">
                    <input type="text" class="form-control" name="dish_name" placeholder="Dish
Name" required>
```

```
            </div>
            <div class="mb-3">
                        <input type="number" class="form-control" name="price" step="0.01" placeholder="Price" required>
            </div>
            <div class="mb-3">
                    <textarea class="form-control" name="description" placeholder="Description" required></textarea>
            </div>
            <div class="mb-3">
                    <input type="file" class="form-control" name="dish_image" accept="image/*" required>
            </div>
            <button type="submit" name="add_dish" class="btn btn-primary">Add Dish</button>
        </form>
    </div>

    <!-- Display the dishes table -->
    <h2 class="my-4">Dishes Table</h2>
    <?php if (count($dishes) > 0): ?>
        <table class="table table-bordered">
            <thead>
                <tr>
```

```
                <th>ID</th>
                <th>Name</th>
                <th>Price</th>
                <th>Description</th>
                <th>Image</th>
            </tr>
        </thead>
        <tbody>
            <?php foreach ($dishes as $dish): ?>
                <tr>
                    <td><?php echo $dish["dish_id"]; ?></td>
                    <td><?php echo $dish["name"]; ?></td>
                    <td>₹<?php echo number_format($dish["price"], 2); ?></td>
                    <td><?php echo $dish["description"]; ?></td>
                    <td>
                        <?php if (!empty($dish["image"])): ?>
                            <img src="<?php echo $dish["image"]; ?>" alt="Dish Image" class="dish-
image">
                        <?php else: ?>
                            No Image
                        <?php endif; ?>
                    </td>
                </tr>
```

```
                <?php endforeach; ?>
            </tbody>
        </table>
    <?php else: ?>
        <p class="text-center">No dishes found in the database.</p>
    <?php endif; ?>
</div>

<script src="https://cdn.jsdelivr.net/npm/bootstrap@5.3.0/dist/js/bootstrap.bundle.min.js"></script>
</body>
</html>
```

Orderitem.php

```
<?php
session_start();

// Database Connection
$servername = "localhost";
$username = "root";
$password = "";
$dbname = "restaurant_db";

$conn = new mysqli($servername, $username, $password, $dbname);
if ($conn->connect_error) {
```

```
    die("Connection failed: " . $conn->connect_error);
}

// Generate a unique bill number
$billNumber = "BILL" . time();

// Fetch Dishes from Database
$query = "SELECT dish_id, image, name, price FROM dishes";
$result = $conn->query($query);
$dishes = [];
while ($row = $result->fetch_assoc()) {
    $dishes[] = $row;
}
$result->free();

$conn->close();
?>
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Restaurant Billing System</title>
    <link rel="stylesheet"
href="https://cdnjs.cloudflare.com/ajax/libs/bootstrap/5.3.0/css/bootstrap.min.css">
    <style>
        body { background-color: #f8f9fa; overflow-y: auto; }
        .dish-card { transition: transform 0.3s; margin-bottom: 10px; }
        .dish-card:hover { transform: scale(1.05); }
```

```
.bill-popup { display: none; position: fixed; top: 0; left: 0; width: 100%; height: 100%; background: rgba(0, 0, 0, 0.5); overflow-y: auto; }

.bill-content { background: white; padding: 20px; border-radius: 10px; max-width: 500px; margin: 50px auto; max-height: 80vh; overflow-y: auto; }

.logo { width: 100px; height: 100px; margin: 0 auto; display: block; }

.container { max-height: 100vh; overflow-y: auto; }

.sidebar {
    width: 250px;
    background-color: #343a40;
    color: white;
    padding: 20px;
    position: fixed;
    height: 100vh; /* Full height */
    overflow-y: auto; /* Scrollable if content exceeds height */
}
.sidebar a {
    color: white;
    text-decoration: none;
    display: block;
    padding: 10px;
    margin: 5px 0;
    border-radius: 5px;
    transition: background-color 0.3s;
}
.sidebar a:hover {
    background-color: #495057;
}
.main-content {
    margin-left: 270px; /* Adjust for sidebar width */
```

```
            padding: 20px;
        }
    </style>
    <!-- Include the JavaScript file for updating bill data format -->
    <script src="js/updateBillDataFormat.js"></script>
</head>
<body>
    <!-- Sidebar -->
    <div class="sidebar">
        <h3 class="text-center">Bill Report</h3>
        <a href="index.php">Dashboard</a>
        <a href="dish.php">Dishes</a>
        <a href="rawmaterial.php">Raw Materials</a>
        <a href="orderitem.php">Bill Generate</a>
        <a href="report.php">Report</a>
        <a href="purchasing.php">Purchasing</a>
        <a href="vendor.php">Vendors</a>
    </div>

    <!-- Main Content -->
    <div class="main-content">
        <div class="container mt-4">
            <h2 class="text-center">Restaurant Billing System</h2>
            <div class="row">
                <?php foreach ($dishes as $dish) { ?>
                    <div class="col-md-4 mb-4">
                        <div class="card dish-card shadow-sm">
                            <img src="<?= $dish['image'] ?>" class="card-img-top" style="height: 200px;
object-fit: cover;">
```

```
                    <div class="card-body text-center">
                        <h5 class="card-title"><?= $dish['name'] ?></h5>
                        <p class="card-text">₹<?= number_format($dish['price'], 2) ?></p>
                        <button class="btn btn-danger remove" data-id="<?= $dish['dish_id'] ?>">-
</button>
                        <span class="quantity" data-id="<?= $dish['dish_id'] ?>">0</span>
                        <button class="btn btn-success add" data-id="<?= $dish['dish_id'] ?>" data-
price="<?= $dish['price'] ?>">+</button>
                    </div>
                </div>
            </div>
            <?php } ?>
        </div>
        <div class="text-center">
            <button class="btn btn-primary" id="generateBill">Generate Bill</button>
        </div>
    </div>

    <!-- Bill Summary Popup -->
    <div class="bill-popup" id="billPopup">
        <div class="bill-content">
            <img src="restaurant_logo.png" alt="Restaurant Logo" class="logo">
            <h4 class="text-center">The Kozhi Restaurant</h4>
            <h5 class="text-center">Near CEOA School,</h5>
            <h5 class="text-center">Anandha Nagar, Kosakulam Main Road,</h5>
            <h6 class="text-center">Madurai - 625017.</h6>
            <p class="text-center">Date: <span id="billDate"></span> | Time: <span
id="billTime"></span></p>
            <p class="text-center">Bill No: <?= $billNumber ?></p>
```

```
            <table class="table table-bordered">
                <thead>
                    <tr><th>Item</th><th>Qty</th><th>Price</th></tr>
                </thead>
                <tbody id="billItems"></tbody>
            </table>
            <p><strong>Subtotal:</strong> ₹<span id="subtotal">0.00</span></p>
            <p><strong>Tax (5%):</strong> ₹<span id="tax">0.00</span></p>
            <p><strong>Total:</strong> ₹<span id="total">0.00</span></p>
            <p><b>Thank you !!! Visit Again !!! </b></p>
            <p>Warm Welcome Your Valuable </p>
            <p>feedback</p>
            <button class="btn btn-primary" id="printBill">Print</button>
            <button class="btn btn-danger" id="closePopup">Close</button>
        </div>
    </div>
</div>

<script src="https://cdnjs.cloudflare.com/ajax/libs/jquery/3.6.0/jquery.min.js"></script>
<script>
    let cart = {};

    // Increment quantity
    $('.add').click(function() {
        let id = $(this).data('id');
        let price = parseFloat($(this).data('price'));
        cart[id] = (cart[id] || { qty: 0, price: price, name: $(this).siblings('.card-title').text() });
        cart[id].qty++;
```

```
        updateCart();
        updateQuantityDisplay(id);
    });

    // Decrement quantity
    $('.remove').click(function() {
        let id = $(this).data('id');
        if (cart[id] && cart[id].qty > 0) {
            cart[id].qty--;
            if (cart[id].qty === 0) delete cart[id];
            updateCart();
            updateQuantityDisplay(id);
        }
    });

    // Update quantity display
    function updateQuantityDisplay(id) {
        $(`.quantity[data-id="${id}"]`).text(cart[id] ? cart[id].qty : 0);
    }

    // Update cart and bill summary
    function updateCart() {
        let subtotal = 0;
        $('#billItems').empty();
        for (let id in cart) {
            let item = cart[id];
            subtotal += item.qty * item.price;
            $('#billItems').append(`<tr><td>${item.name}</td><td>${item.qty}</td><td>₹${(ite
m.qty * item.price).toFixed(2)}</td></tr>`);
```

```
    }
    let tax = subtotal * 0.05;
    let total = subtotal + tax;
    $('#subtotal').text(subtotal.toFixed(2));
    $('#tax').text(tax.toFixed(2));
    $('#total').text(total.toFixed(2));
}

// Show bill popup
$('#generateBill').click(function() {
    let date = new Date();
    // Format date as YYYY-MM-DD
    let formattedDate = date.toISOString().split('T')[0];
    $('#billDate').text(formattedDate);
    $('#billTime').text(date.toLocaleTimeString());
    $('#billPopup').show();
});

// Print bill
$('#printBill').click(function() {
    window.print();

    // Save bill to database
    let billData = {
        billNumber: '<?= $billNumber ?>',
        date: $('#billDate').text(), // Already in YYYY-MM-DD format
        time: $('#billTime').text(),
        items: [],
```

```
            subtotal: $('#subtotal').text(),
            tax: $('#tax').text(),
            total: $('#total').text()
        };

        for (let id in cart) {
            billData.items.push({
                name: cart[id].name,
                qty: cart[id].qty,
                price: cart[id].price
            });
        }

        $.post('save_bill.php', { billData: JSON.stringify(billData) }, function(response) {
            alert('Bill saved successfully!');
            // Refresh the page after saving the bill
            location.reload();
        });
    });

    // Close popup and refresh the page
    $('#closePopup').click(function() {
        $('#billPopup').hide();
        location.reload(); // Refresh the page
    });
  </script>
</body>
</html>
```