RESTAURANT MANAGEMENT SYSTEM

A MINI PROJECT REPORT

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BONAFIDE CERTIFICATE

Certified that Mini project report titled **"RESTAURANT MANAGEMENT SYSTEM"** is the bonafide work of **ADITYA SHARMA AND GOTTUMUKKALA NAGA VENKATA MANIKANTASAI** who carried out the minor project under my supervision. Certified further, that to the best of my knowledge, the work reported herein does not form any other project report or dissertation based on which a degree or award was conferred on an earlier occasion on this or any other candidate.

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TABLE OF CONTENTS

ABSTRACT

LIST OF FIGURES

1 INTRODUCTION **7**

2 LITERATURE SURVEY **8**

3 SYSTEM ARCHITECTURE AND DESIGN **9**

3.1 Architecture diagram of Restaurant Management System 10

3.2 Description of Module and components

4 METHODOLOGY **14**

5 CODING AND TESTING **15**

6 SCREENSHOTS AND RESULTS

7 CONCLUSION AND FUTURE ENHANCEMENT **23**

REFERENCES **24**

ABSTRACT

The restaurant industry is highly competitive, and efficient management is crucial for success. A restaurant management system (RMS) is a software solution that helps streamline various operations, including ordering, inventory management, employee scheduling, and customer relations. The system aims to improve the overall efficiency of the restaurant, resulting in increased customer satisfaction and higher profitability. The RMS provides a user-friendly interface that allows restaurant owners and managers to monitor and control various aspects of the business in real-time. With the increasing demand for technology-driven solutions in the restaurant industry, the implementation of an RMS can offer several benefits, such as better resource allocation, increased productivity, and improved customer service.

In addition, a restaurant management system can provide valuable data insights that can help restaurant owners make informed decisions about their business. For example, the system can track inventory levels and sales trends, allowing owners to adjust their menu offerings and pricing strategies accordingly. The system can also provide detailed reports on employee performance, allowing managers to identify areas for improvement and optimize staffing schedules.

One of the main advantages of an RMS is its ability to improve the customer experience. By streamlining the ordering process, reducing wait times, and providing accurate information on menu items and pricing, the system can enhance customer satisfaction and encourage repeat business. The system can also help restaurants build customer loyalty by storing customer information and preferences, allowing staff to personalize their interactions with regular customers.

Overall, a restaurant management system can provide significant benefits for restaurant owners and managers, including increased efficiency, improved customer service, and better decision-making capabilities. With the continued growth of the restaurant industry and the increasing demand for technology-driven solutions, an RMS is becoming an essential tool for success in the modern restaurant business.

INTRODUCTION

- A restaurant management system is a software application that helps restaurant owners and managers streamline their operations and improve their efficiency. It typically includes modules for managing reservations, tracking inventory, handling orders, processing payments, and generating reports. With a restaurant management system, restaurant owners can automate many tasks, reduce errors, and optimize their business processes. This can help them save time, reduce costs, and enhance the overall customer experience. Additionally, the system can provide valuable insights into customer behavior, sales trends, and employee performance, enabling restaurant owners to make data-driven decisions and improve their operations. Overall, a restaurant management system is an essential tool for any restaurant looking to improve its efficiency and profitability.

- In addition to the core functionalities mentioned above, some restaurant management systems may also offer additional features such as customer relationship management (CRM) tools, loyalty program management, and online ordering integration. These features can help restaurants build stronger relationships with their customers and boost their online presence.

- One of the key benefits of a restaurant management system is the ability to centralize data and streamline communication across various departments within the restaurant. For example, the kitchen staff can receive real-time updates on new orders, while the waitstaff can access information about table availability and customer preferences. This helps to reduce the risk of errors and delays, leading to improved efficiency and customer satisfaction.

- Another advantage of a restaurant management system is the ability to track inventory and manage food costs. By monitoring inventory levels and tracking ingredient usage, restaurant owners can identify which dishes are the most profitable and make adjustments accordingly. This can help to minimize waste and improve profitability.

- Overall, a restaurant management system is an essential tool for modern restaurants looking to stay competitive in a fast-paced industry. By automating routine tasks, optimizing business processes, and providing valuable insights into customer behavior and sales trends, restaurant owners can make data-driven decisions and improve their bottom line.

LITERATURE SURVEY

- "A Review on Restaurant Management System" by R. N. Ali, M. F. M. Yusof, and M. Z. Abdullah (2016): This paper provides a comprehensive review of restaurant management systems, including their features, advantages, and limitations. It also presents a comparison of different systems available in the market.

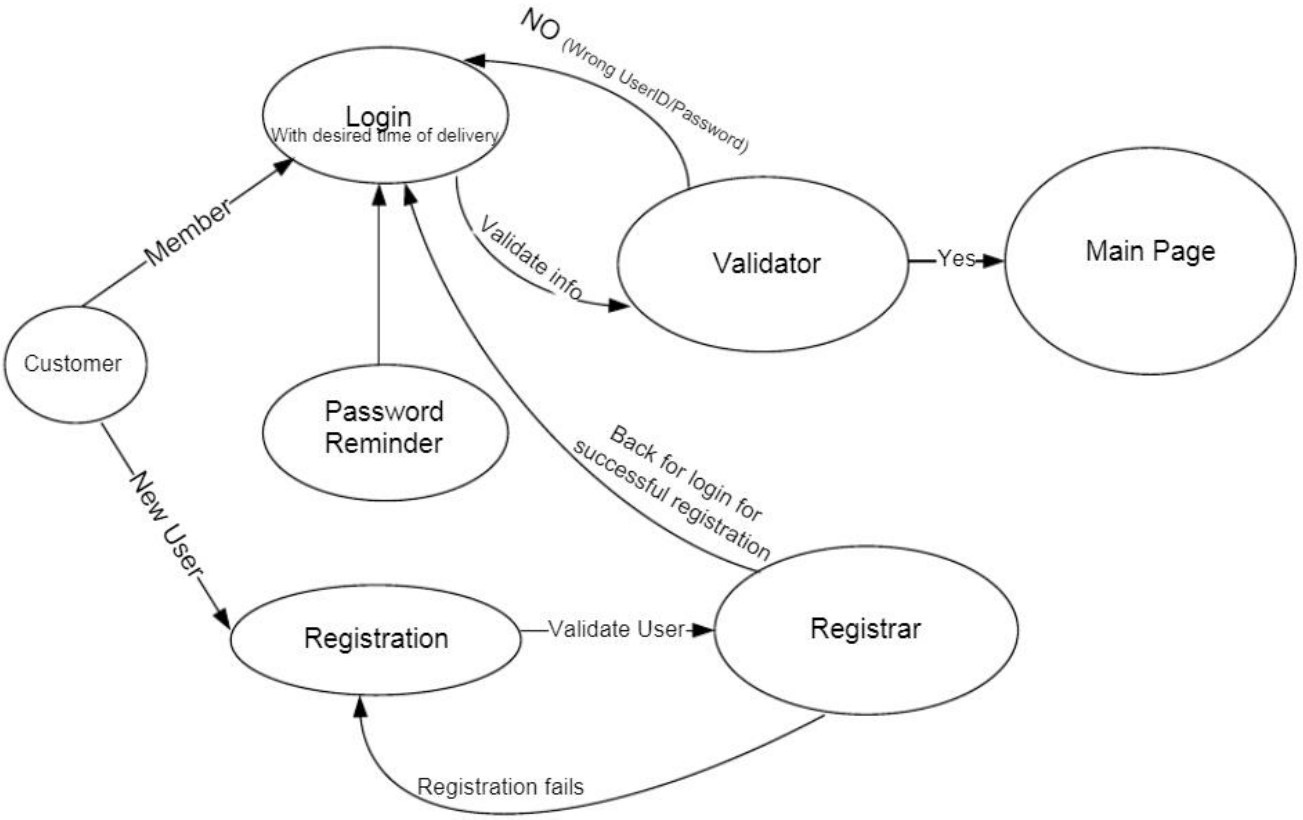
- "Design and Implementation of Restaurant Management System" by O. O. Obi and O. C. Osuagwu (2016): This paper presents the design and implementation of a restaurant management system using a web-based approach. The system includes features such as online ordering, menu management, and inventory control.

- "A Comparative Study of Restaurant Management Systems" by S. A. Khan, A. Ali, and A. Aziz (2017): This paper compares various restaurant management systems based on their features, usability, and cost-effectiveness. The authors also discuss the challenges faced by restaurants in adopting these systems.

- "A Smart Restaurant Management System using IoT" by M. A. Alghamdi, F. A. Alsharif, and M. N. Alotaibi (2020): This paper proposes a smart restaurant management system that utilizes Internet of Things (IoT) technology to enhance the customer experience and improve operational efficiency. The system includes features such as automated ordering, table management, and customer feedback.

- "Restaurant Management System: An Integrated Approach" by S. S. Sood and S. S. Bedi (2020): This paper presents an integrated approach to restaurant management that combines features such as inventory control, customer management, and staff management into a single system. The authors also discuss the benefits and challenges of implementing such a system.

SYSTEM ARCHITECTURE AND DESIGN



For signing up every customer has to give some this details such as address, name, Contact no etc and the most important is email ID which is the primary key to identify each customer uniquely, thus email becomes the User ID for the customer.

The only thing needed here is to sign in to the system through the system. Now he would have the option to edit his current information and big thing to order the food diminishing the human interaction. He would have today's menu in front of him and he have the clear choices for order. He has variety of things to do here and have the option to cancel the order before the serving. For the first time to access the system, customer has to give his key information like identification and so on.

For the management side, it is quite possible to book many orders concurrently. System will be able to book nearly infinite number of orders at a time. Management side has more updated information and they can get the currently orders. System will be able to deal with the customers who don't come to take there orders by blocking them and not letting them to signup again. This is done by maintaining some information regarding the status of order and the relative customer. So according to that the system can deal him. How system deals with him..? He should have to pay the amount of the last order in order to continue with his membership.

All that would be implemented in Apache Server Pages and MySQl Servlets. At Login page we will be checking the user's existence and mapping his user ID/email ID with his password, if the user is valid then he is allowed to access further.

At Registration, it is checked that the user ID/ email ID is not pre-existent, along with various general events/acts such as the customer had entered right format of the e-mail, or it is not entered NIL, all phone & mobile numbers contain only the numbers, etc.

The option of password reminder is also included, so that when the user forgets his password then he can get a new password by giving his email ID, only if he already exists!!

MODULES:

1. **Order management:** This module allows restaurant staff to take orders from customers, including dine-in, takeaway, and delivery orders. It may also include options for special requests, substitutions, and modifications.
2. **Table management:** This module helps staff to manage table assignments, reservations, and wait times. It may also include the ability to view table layouts, assign tables to servers, and track table availability.
3. **Inventory management:** This module tracks inventory levels and provides alerts when supplies need to be reordered. It may also include features for managing food costs, tracking waste, and monitoring stock levels.
4. **Billing and payment:** This module generates bills for customers and processes payments. It may include options for splitting bills, applying discounts, and accepting multiple payment methods.
5. **Employee management:** This module helps manage employee schedules, track time and attendance, and monitor performance. It may also include features for managing payroll, benefits, and employee records.
6. **Reporting and analytic:** This module generates reports on sales, inventory, employee performance, and other key metrics. It may include dashboards for visualizing data and identifying trends.
7. **Customer relationship management:** This module helps manage customer data, including contact information, preferences, and order history. It may also include features for sending promotions, special offers, and feedback surveys.

COMPONENTS:

- **Point of Sale (POS) System:** A POS system is used to manage customer orders and payments. It allows servers to enter orders, track inventory, and process payments quickly and efficiently.
- **Inventory Management System:** This system is used to manage the inventory of raw materials, food, and beverages. It helps in tracking inventory levels, monitoring stock levels, and placing orders for new supplies.
- **Table Management System:** This system is used to manage table reservations, assign tables to customers, and track table availability.
- **Staff Management System:** This system is used to manage employee schedules, track attendance, and monitor performance.
- **Accounting and Financial Management System:** This system is used to manage financial transactions, such as invoicing, billing, and payroll.
- **Customer Relationship Management System:** This system is used to manage customer data and interactions, such as reservations, feedback, and loyalty programs.
- **Reporting and Analytic System:** This system is used to generate reports and analytics on various aspects of restaurant operations, such as sales, inventory, and customer feedback.
- **Menu Management System:** This system is used to manage menus and pricing for food and beverages. It allows for easy updates to the menu, tracking of pricing changes, and ensuring accuracy of menu items.
- **Online Ordering System:** An online ordering system allows customers to place orders through a website or mobile app. This system integrates with the POS system to ensure accurate and timely order processing.
- **Kitchen Display System:** A kitchen display system replaces paper tickets with digital orders, allowing for improved order accuracy, faster preparation times, and easier communication between the front and back of the house.
- **Waitlist Management System:** This system is used to manage waitlists for customers. It allows customers to add their name to a waitlist and receive updates on their status via text message or app notifications.
- **Loyalty Program Management System:** This system is used to manage customer loyalty programs, such as rewards points or discounts. It allows for tracking of customer activity and redemption of rewards.

METHODOLOGY

Define the requirements:

Determine the features and functionalities that the restaurant management system should have. This can be done by consulting with restaurant staff, observing the current processes, and analyzing the challenges faced by the restaurant.

Design the system:

Create a detailed design of the system, including the user interface, database schema, and software architecture. Consider factors such as scalability, security, and ease of use.

Develop the system:

Implement the design by coding the software and building the database. This step may involve using various programming languages, frameworks, and tools.

Test the system:

Conduct various tests to ensure that the system functions correctly and meets the requirements. This can include functional testing, performance testing, and security testing.

Deploy the system:

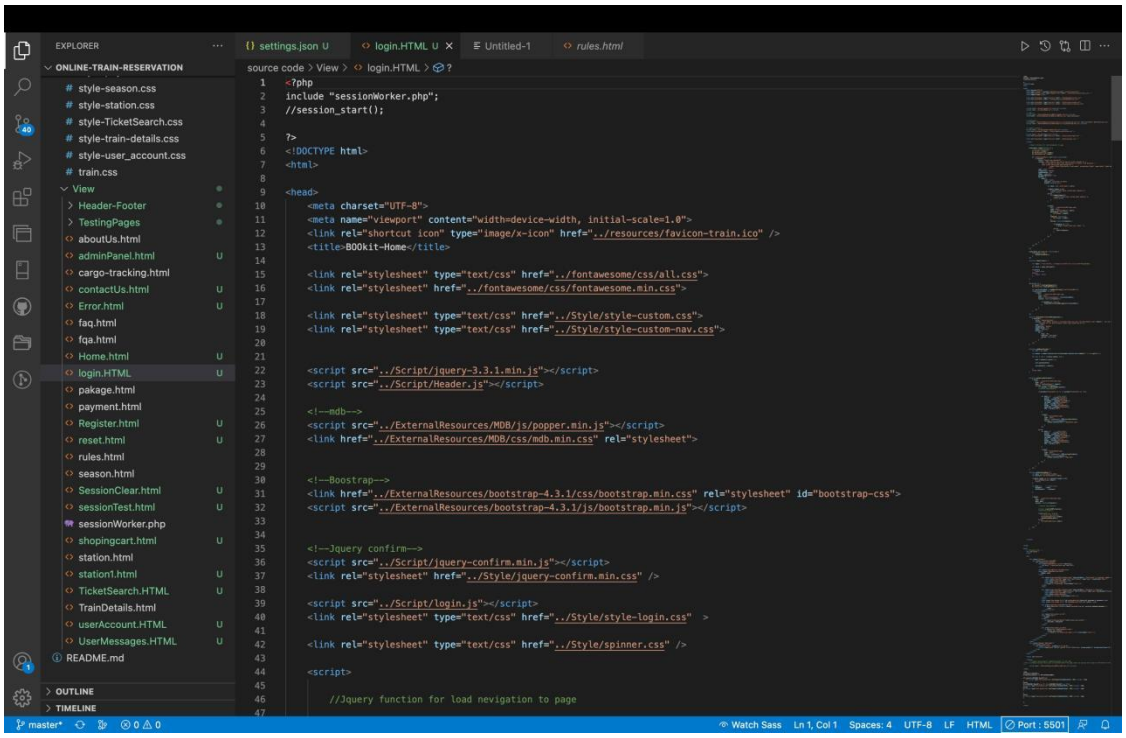
Install the system in the restaurant's environment and configure it for use. This may involve training the staff on how to use the system and integrating it with other software and hardware.

Maintain the system:

Provide ongoing support and maintenance for the system, including bug fixes, updates, and enhancements. This can involve monitoring the system's performance, responding to user feedback, and addressing any issues that arise.

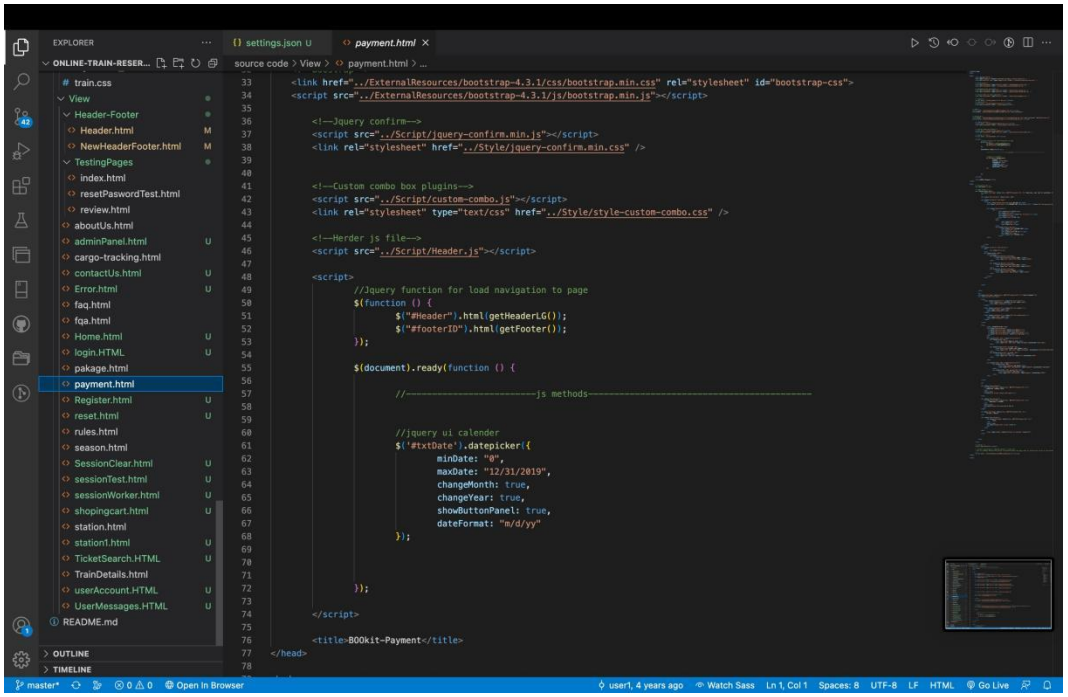
CODING AND TESTING

1.LOGIN PAGE



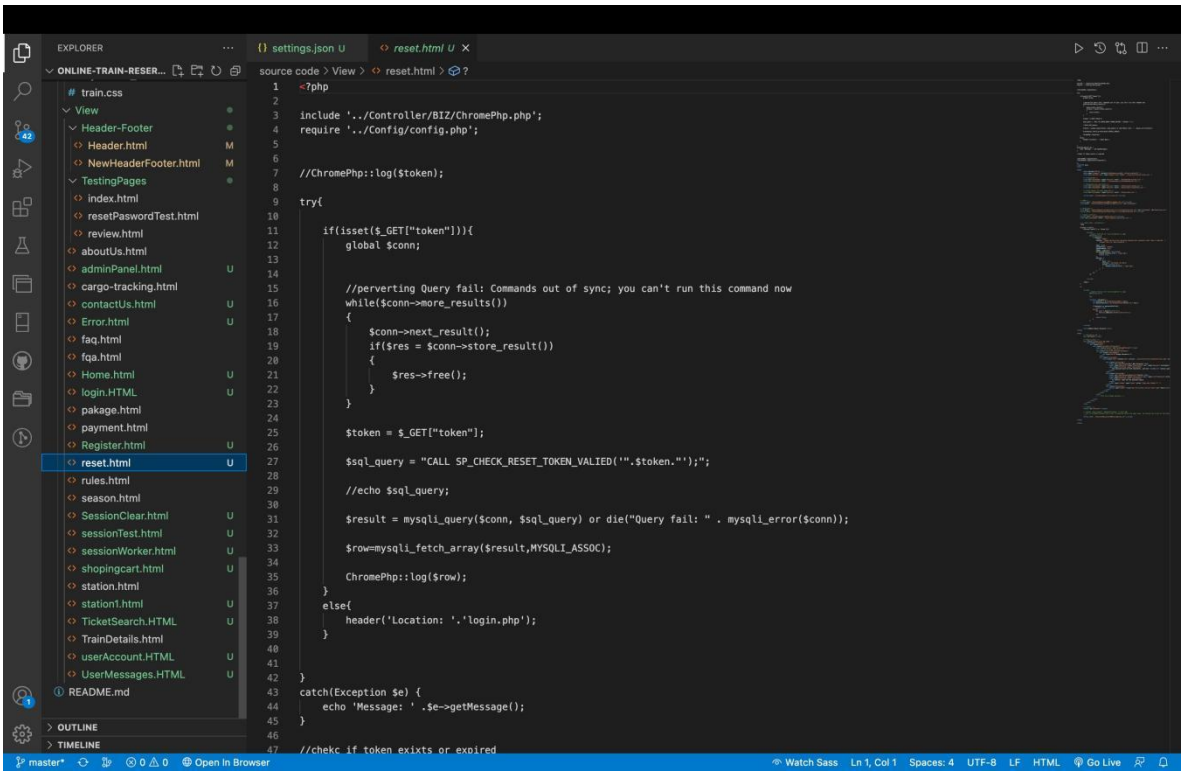
```
<?php
include "sessionWorker.php";
//session_start();

?>
<!DOCTYPE html>
<html>

<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <link rel="shortcut icon" type="image/x-icon" href="../resources/favicon-train.ico" />
    <title>BOOkit-Home</title>

    <link rel="stylesheet" type="text/css" href="../fontawesome/css/all.css">
    <link rel="stylesheet" href="../fontawesome/css/fontawesome.min.css">

    <link rel="stylesheet" type="text/css" href="../Style/style-custom.css">
    <link rel="stylesheet" type="text/css" href="../Style/style-custom-nav.css">


    <script src="../Script/jquery-3.3.1.min.js"></script>
    <script src="../Script/Header.js"></script>

    <!--mdb-->
    <script src="../ExternalResources/MDB/js/popper.min.js"></script>
    <link href="../ExternalResources/MDB/css/mdb.min.css" rel="stylesheet">


    <!--Boostrap-->
    <link href="../ExternalResources/bootstrap-4.3.1/css/bootstrap.min.css" rel="stylesheet" id="bootstrap-css">
    <script src="../ExternalResources/bootstrap-4.3.1/js/bootstrap.min.js"></script>


    <!--Jquery confirm-->
    <script src="../Script/jquery-confirm.min.js"></script>
    <link rel="stylesheet" href="../Style/jquery-confirm.min.css" />

    <script src="../Script/login.js"></script>
    <link rel="stylesheet" type="text/css" href="../Style/style-login.css"  >

    <link rel="stylesheet" type="text/css" href="../Style/spinner.css" />

    <script>

        //Jquery function for load nevigation to page
```

2. USER SUPPORT PAGE

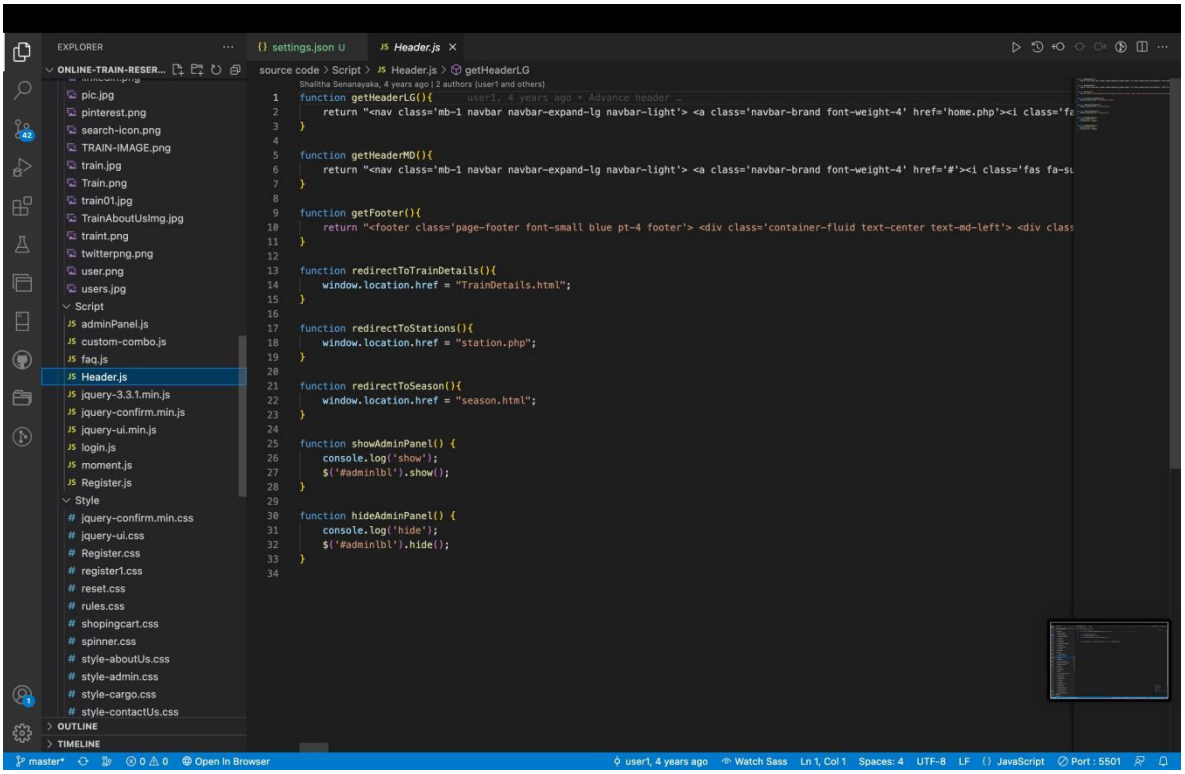


```
    <link href="../ExternalResources/bootstrap-4.3.1/css/bootstrap.min.css" rel="stylesheet" id="bootstrap-css">
    <script src="../ExternalResources/bootstrap-4.3.1/js/bootstrap.min.js"></script>

        <!--Jquery confirm-->
        <script src="../Script/jquery-confirm.min.js"></script>
        <link rel="stylesheet" href="../Style/jquery-confirm.min.css" />


        <!--Custom combo box plugins-->
        <script src="../Script/custom-combo.js"></script>
        <link rel="stylesheet" type="text/css" href="../Style/style-custom-combo.css" />

        <!--Herder js file-->
        <script src="../Script/Header.js"></script>

        <script>
            //Jquery function for load navigation to page
            $(function () {
                $("#Header").html(getHeaderLG());
                $("#footerID").html(getFooter());
            });

            $(document).ready(function () {

                //-------------------------js methods-------------------------------------------


                //jquery ui calender
                $('#txtDate').datepicker({
                    minDate: "0",
                    maxDate: "12/31/2019",
                    changeMonth: true,
                    changeYear: true,
                    showButtonPanel: true,
                    dateFormat: "m/d/yy"
                });



            });

        </script>

        <title>BOOkit-Payment</title>
</head>
```

3.PAYMENT PAGE



4.RESERVED PAGE



SCREENSHOTS AND RESULTS

Table name : Admin

Field	Data type	Null	Default
Ad_id	**Int(11)**	**No**	**—**
Ad_username	**Varchar(100)**	**Yes**	**Null**
Ad_password	**Varchar(100)**	**Yes**	**Null**
Ad_name	**Varchar(100)**	**Yes**	**Null**
Admin_email	**Varchar(100)**	**Yes**	**Null**
Phone	**Varchar(100)**	**Yes**	**Null**
first name	**Varchar(100)**	**Yes**	**Null**

Table name : Category

Category id	Int(11)	No	---
Category name	Varchar(100)	No	---
Parent id	Int(11)	No	---
Order type	Int(11)	yes	Null

Table name :Cart

Field	Data type	Null	Default
Id	Int(11)	No	---
User id	Varchar(100)	Yes	null
Inv id	Varchar(100)	Yes	null
Quantity	Varchar(100)	Yes	null
Price	Varchar(100)	Yes	null
Inv name	Varchar(100)	Yes	null
Cart identity	Varchar(100)	Yes	null

Table name : Customer

field	Data type	Null	Default
Cust id	Int(11)	No	----
Cust name	Varchar(100)	No	----
Cus id	Varchar(100)	No	----
Cus address	Varchar(100)	No	----
Cus city	Varchar(100)	No	----
Cus zipcode	Varchar(100)	No	----
phone	Varchar(100)	No	----
Email	Varchar(100)	No	----
Password	Varchar(100)	No	----

Table name :Order

Field	Data type	Null	Default
Order id	Int(11)	No	null
Order name	Text	Yes	---
Order date	Datetime	No	---
Order status	Int(11)	No	---
Delivery date	Datetime	Yes	Null
Comment	Text	Yes	Null
Order flag	Int(11)	yes	Null
Order user id	Int(11)	yes	Null
Order price	Decimal(20,4)	Yes	Null

Table name : Payment

Field	Data type	Null	Default
Id	Int(11)	no	---
Posted date	Date	no	---
Description	text	no	---
Payment type	Varchar(50)	no	---
amount	Varchar(50)	no	---

CONCLUSION AND FUTURE ENHANCEMENTS

Conclusion:

In conclusion, a restaurant management system is an essential tool for the effective management of a restaurant. It helps in streamlining various operations, such as inventory management, order processing, customer management, and employee management. With the use of such a system, restaurants can improve their efficiency, reduce costs, and increase profitability. Additionally, a restaurant management system also enhances the customer experience by providing quick and accurate service. It is, therefore, crucial for any restaurant looking to improve its operations to consider investing in a restaurant management system.

Future Enhancement:

There are several potential future enhancements that could be made to a restaurant management system to improve its functionality and efficiency. Here are a few examples:

1. Integration with Online Ordering: With the rise of online ordering platforms, it would be beneficial for a restaurant management system to integrate with these platforms. This would allow orders to be automatically imported into the system, reducing the need for manual data entry and minimizing errors.

2. Mobile Ordering: Many customers prefer to order food using their smartphones. Integrating a mobile ordering feature into a restaurant management system would allow customers to easily place orders and pay for their meals from their mobile devices.

3. AI-Based Menu Suggestions: By analyzing customer data, a restaurant management system could suggest menu items that are likely to be popular with customers. This could be based on factors such as past order history, time of day, and weather conditions.

4. Inventory Management: An effective inventory management system is critical for any restaurant. Future enhancements could include the use of RFID tags to track inventory levels in real time, automated re-ordering of supplies, and the ability to generate reports on usage and waste.

5. Customer Loyalty Programs: A loyalty program can encourage customers to return to a restaurant and can also provide valuable data on customer preferences and behaviors. Integrating a customer loyalty program into a restaurant management system could provide benefits for both the restaurant and its customers.

REFERENCE

1. Toast POS: https://pos.toasttab.com/

2. Square for Restaurants: https://squareup.com/us/en/point-of-sale/restaurants

3. Lavu: https://lavu.com/

4. Upserve POS: https://upserve.com/pos/

5. TouchBistro: https://www.touchbistro.com/

6. ShopKeep: https://www.shopkeep.com/pos-systems/restaurant-pos-system

7. Lightspeed Restaurant: https://www.lightspeedhq.com/pos/restaurant/

8. Breadcrumb: https://www.trybreadcrumb.com/

9. Aldelo: https://www.aldelo.com/

10. Maitre'D: https://www.posera.com/maitre-d-pos/