RESTAURANT MANAGEMENT SYSTEM MINI PROJECT REPORT
A MINI PROJECT REPORT

Submitted by

NAIMISH PANDEY [RA2011003010147]

AAKASH CHAUDHARY [RA2011003010159]

SAURABH PANDEY[RA2011003010207]

Under the guidance of

Dr. Ramamoorthy S

(Associate Professor, Dept of Computing Technologies)

In partial satisfaction of the requirements for the degree of

BACHELOR OF TECHNOLOGY

in

COMPUTER SCIENCE & ENGINEERING

SCHOOL OF COMPUTING

COLLEGE OF ENGINEERING AND TECHNOLOGY

SRM INSTITUTE OF SCIENCE AND TECHNOLOGY

KATTANKULATHUR – 603203

APRIL 2023

COLLEGE OF ENGINEERING & TECHNOLOGY
SRM INSTITUTE OF SCIENCE & TECHNOLOGY
S.R.M. NAGAR, KATTANKULATHUR – 603 203

BONAFIDE CERTIFICATE

certified that this project report **"RESTAURANT MANAGEMENT SYSTEM "**is the bonafide work of **Naimish Pandey [RA2011003010147], Aakash Chaudhary [RA2011003010159], Saurabh Pandey[RA2011003010207]** of III Year/VI Sem B.tech(CSE) who carried out the mini project work under my supervision for the course 18CSC303J- Database Management systems in SRM Institute of Science and Technology during the academic year 2022-2023(Even sem).

M. Punithavalli

HOD STAMP
Dr. M. Punithavalli
Head of Dept.
CTECH

SIGNATURE

9/5/23

Dr. Ramamoorthy
SAssociate
Professor
Department of Computing Technologies

ABSTRACT

The Restaurant Management System (RMS) is a software solution designed to simplify and streamlinethe operations of restaurant. The system provides an easy-to-use interface for managing various aspects of the restaurant, including customer inventory management, menu creation and modification, table management, and employee management.

The RMS is developed using modern technologies and incorporates advanced features that enable efficient management of restaurant operations. The system provides a user-friendly interface that allows staff to quickly process customer orders, manage inventory levels, and track employee performance.

The system also includes features such as real-time analytics and reporting, which enable restaurant owners and managdata-driven decisions about menu items, promotions, and staffing. Additionally, the system can be customized to meet needs of individual restaurants, including custom menu items and pricing.

Restaurant Management System is a comprehensive solution that enables restaurant owners and managers to streamline operations, increase efficiency, and improve the overall customer experience.

TABLE OF CONTENTS

LIST OF FIGURES

CHAPTER 1

INTRODUCTION

6.5 Introduction

A Restaurant Management System (RMS) is a software application that facilitates the managementof various aspects of a restaurant, such as ordering, inventory, billing, and employee management.It is designed to streamline operations, reduce errors, and increase efficiency in the day-to-day functioning of a restaurant.

In a Database Management System (DBMS), an RMS can be implemented using a relational database to store and manage data related to the restaurant's operations. This data can include information about menu items, ingredients, prices, customers, orders, payments, and employees.

By using a DBMS to implement an RMS, the restaurant can benefit from centralized data management, secure data storage, and easy retrieval and analysis of data. This can help restaurant owners and managers make informed decisions, track performance, and improve overall efficiency and profitability.

2. Problem Statement

Despite the many benefits of using a Restaurant Management System (RMS), there are still many restaurants that continue to rely on manual processes for managing their operations. This can leadto various problems, such as errors in order-taking and billing, inventory mismanagement, and inefficient employee scheduling.

Manual processes can also lead to delays in service, which can negatively impact the customer experience and lead to lost revenue. Additionally, without a centralized system for tracking and analyzing data, restaurant owners and managers may not have the insights they need to make informed decisions about their operations.

Therefore, there is a need for an efficient and reliable RMS that can help restaurants streamline their operations, reduce errors, and increase efficiency. Such a system would need to be easy to use, customizable to the specific needs of the restaurant, and able to provide real-time insights into

various aspects of the business. By addressing these needs, an effective RMS can help restaurants improve their overall performance and profitability.

Many restaurants today still rely on manual processes to manage their operations, despite the many benefits that a Restaurant Management System (RMS) can provide. This can result in various challenges, such as mistakes in order-taking and billing, inefficient employee scheduling, and inventory mismanagement. Such issues can lead to delays in service, dissatisfied customers, and lost revenue. Additionally, without a centralized system for tracking and analyzing data, restaurant owners and managers may struggle to make informed decisions about their operations, which can negatively impact the success of the business.

Hence, there is a growing need for a reliable and efficient RMS that can help streamline restaurant operations, reduce errors, and enhance efficiency. Such a system should be user-friendly, customizable to meet the unique requirements of the restaurant, and capable of providing real-time insights into various aspects of the business. By addressing these challenges, a comprehensive RMS can help restaurants improve their overall performance, enhance the customer experience, and ultimately increase profitability.

3. Objective

The objective of this project is to develop a comprehensive Restaurant Management System (RMS) using a Database Management System (DBMS) that will help streamline the day-to-day operations of restaurants. The RMS should be designed to be easy to use, efficient, and customizable to meet the specific needs of different types of restaurants.

The system should be able to handle various aspects of restaurant operations, including menu management, inventory management, order taking and processing, billing, customer management, and employee management. Additionally, the RMS should be able to provide real-time insights into various aspects of the business, such as sales data, customer preferences, and employee performance, to help restaurant owners and managers make informed decisions.

The objective of this project is to create an RMS that can help restaurants improve their efficiency, reduce errors, and increase profitability. By addressing the specific needs of different types of restaurants, the RMS should be able to support growth and expansion of the business, while also providing a better customer experience..

The main aim of this project is to develop a comprehensive Restaurant Management System (RMS) that can help streamline the daily operations of restaurants. This system will utilize a

Database Management System (DBMS) to create a user-friendly, efficient, and customizable platform to cater to the diverse needs of different types of restaurants.

The RMS will offer an array of features that can help restaurant owners manage various aspects of their business operations such as menu management, inventory management, order processing, billing, customer management, and employee management. Moreover, the RMS will provide real-time insights into sales data, customer preferences, and employee performance, which will assist restaurant owners and managers in making informed decisions to improve efficiency, reduce errors, and increase profitability.

The RMS is designed to cater to different types of restaurants, including fine dining, fast-food, cafes, and bistros, among others. By providing a customizable platform, restaurant owners can tailor the system to suit their specific needs and preferences. This will allow restaurants to focuson delivering an exceptional customer experience and service, without worrying about the complexities of managing their daily operations.

Overall, the RMS will not only help restaurants optimize their operations but also support growth and expansion of the business. By leveraging the power of technology, the RMS will offer a comprehensive solution to restaurant management, which will help restaurants streamline their operations, reduce errors, and improve the overall customer experience.

4. Scope and Applications

The scope of this project includes the design, development, and implementation of a comprehensive Restaurant Management System (RMS) using a Database Management System (DBMS). The system will be designed to support various types of restaurants, such as fine dining establishments, fast-casual restaurants, cafes, and bars.

The RMS will include modules for menu management, inventory management, order taking and processing, billing, customer management, and employee management. The system will be designed to be customizable, so that it can be tailored to the specific needs of different restaurants.

Additionally, the RMS will be able to provide real-time insights into various aspects of the business, such as sales data, customer preferences, and employee performance. The system will include reporting features that will allow restaurant owners and managers to make informed decisions about their operations.

The scope of this project also includes the development of a user-friendly interface that will make it easy for restaurant staff to use the system, with minimal training required. The system will be designed to be scalable, so that it can support the growth and expansion of the restaurant.

The project will involve the collaboration of a team of developers, designers, and database experts. The final deliverable will be a fully functional RMS that can be implemented in restaurants of various sizes and types.

The scope of this project is to provide a solution that addresses the complex and varied needs of restaurant management. The system will be designed to streamline the day-to-day operations of different types of restaurants, including fine dining establishments, fast-casual restaurants, cafes, and bars.

The RMS will comprise of modules for menu management, inventory management, order taking and processing, billing, customer management, and employee management. It will be designed to be customizable, allowing restaurants to configure the system to their specific needs and preferences.

Moreover, the system will provide real-time insights into the various aspects of the business, such as salesdata, customer preferences, and employee performance, enabling restaurant owners and managers to makeinformed decisions. The RMS will include reporting features that will enable users to generate reports andanalyze data to identify trends, patterns, and opportunities for improvement.

The project scope also includes the development of a user-friendly interface that will be easy to use and navigate by restaurant staff. The interface will be designed to minimize training time, reduce errors, and optimize user experience. The system will also be scalable, ensuring that it can support the growth and expansion of the restaurant.

This project will require a team of developers, designers, and database experts to collaborate and ensure thatthe final deliverable is a fully functional RMS that meets the needs of restaurants of different sizes and types

.

5. General and Unique Services in the Database Application

General services

1. Inventory Management: A restaurant management system helps track inventory levels and alerts the restaurant manager when the stock of any item runs low. It also helps generate purchase orders, keeping inventory levels consistent.

2. Table Management: Table management systems help optimize seating arrangements and manage waitlists, allowing restaurants to make the most of their seating capacity and improve customer satisfaction.

3. Order Management: A restaurant management system provides a centralized platform for managing orders. This includes taking orders, tracking their progress, and ensuring timely delivery to the customers.

4. Employee Management: Employee management services include scheduling, time tracking, payroll management, and tracking employee performance.

5. Revenue Management: A restaurant management system helps in generating and tracking invoices, tracking payments, and managing financial data.

Unique Services

1. Online ordering: Allow customers to order food directly from the restaurant's website or mobile app, with the ability to customize their order and choose from different payment options.

2. Table management: Manage table reservations and waitlist, assign tables tocustomers, and track table turnover times.

3. Inventory management: Track real-time inventory levels, automate purchaseorders, and generate reports on food cost and waste.

4. Menu management: Easily update menus with new items, prices, and descriptions,and highlight seasonal or limited-time offers.

5. Loyalty program: Offer rewards to repeat customers, track their spending habits,and create targeted marketing campaigns.

6. Reporting and analytics: Generate detailed reports on sales, expenses, and otherkey performance indicators to help make informed business decisions.

7. Online feedback: Allow customers to leave feedback and ratings directly throughthe restaurant's website or app, which can help improve the overall customer experience.

CHAPTER 2

LITERATURE SURVEY

1. Existing System

The existing system for managing restaurant operations varies widely, depending on the size and type of restaurant. Some small restaurants may rely on manual processes, such as handwritten orders and paper-based inventory management. Larger restaurants may use standalone software applications to manage different aspects of their operations, such as point-of-sale (POS) systems for order taking and billing, and separate software applications for inventory management, employee management, and customer relationship management.

While these systems can be effective in managing specific aspects of restaurant operations, they can be disconnected from each other, making it difficult to get a holistic view of the business. Additionally, these systems can be prone to errors, especially if they require manual data entry or transfer between systems. This can lead to inefficiencies, delays in service, and a poor customer experience.

Furthermore, existing systems may not be able to provide real-time insights into various aspects of the business, making it difficult for restaurant owners and managers to make informed decisions about their operations. This can limit the restaurant's ability to optimize its performance and increase profitability.

In summary, the existing system for managing restaurant operations is often disjointed and can lead to inefficiencies and errors. There is a need for a more comprehensive and integrated system that can provide real-time insights into various aspects of the business and help restaurants streamline their operations.

2. Comparison of Existing vs Proposed System

The existing system for managing restaurant operations is often disjointed, with different standalone software applications used for different aspects of the business, such as POS systems for order taking and billing and separate software applications for inventory management, employee management, and customer relationship management. In contrast, the proposed system is a comprehensive Restaurant Management System (RMS) that uses a Database Management System (DBMS) to integrate and streamline all aspects of restaurant operations.

The proposed system will offer several advantages over the existing system. For instance, the proposed RMS will be able to provide real-time insights into various aspects of the business, such as sales data, customer preferences, and employee performance. This will allow restaurant owners and managers to make informed decisions about their operations and optimize their performance.

Moreover, the proposed RMS will be customizable and able to meet the specific needs of different types of restaurants, while the existing system may not be able to cater to the unique requirements of each restaurant. Additionally, the proposed RMS will be user-friendly and require minimal training for staff, while the existing system may require significant training and expertise to use.

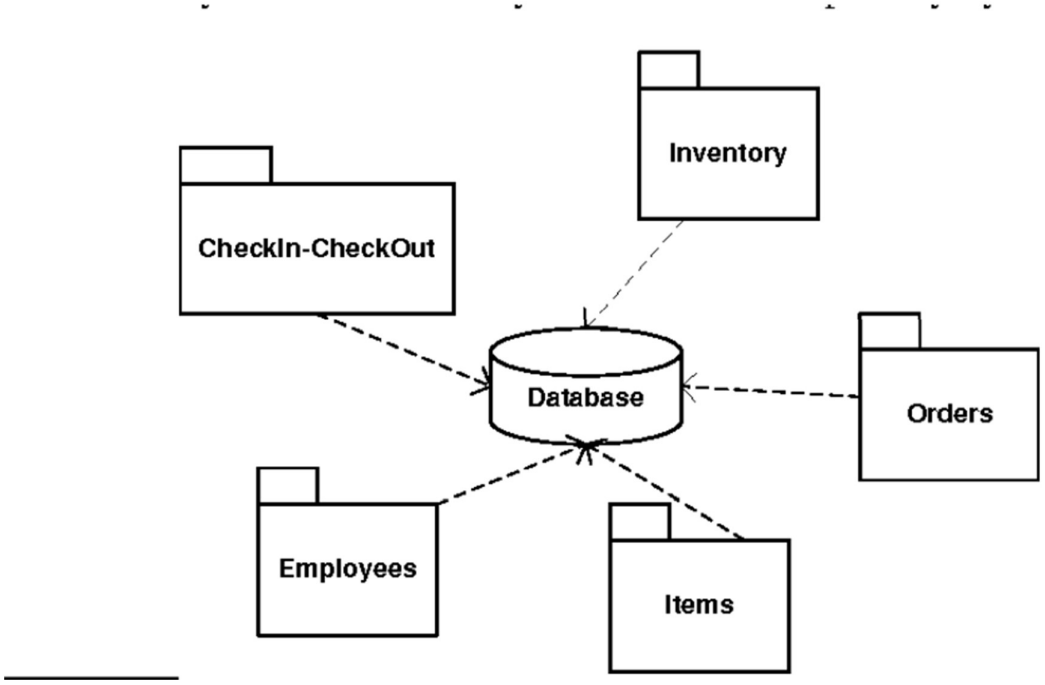
Furthermore, the proposed RMS will be able to handle all aspects of restaurant operations, such as menu management, inventory management, order taking and processing, billing, customer management, and employee management, all within one system, making it easier to manage and reduce errors. In contrast, the existing system may be prone to errors, especially if it requires manual data entry or transfer between systems.

In summary, the proposed Restaurant Management System using a DBMS offers a comprehensive and integrated solution that can provide real-time insights into all aspects of restaurant operations, streamline processes, reduce errors, and increase efficiency. The proposed system is an improvement over the existing system, which is often disjointed, prone to errors, and unable to provide real-time insights into various aspects of the business.

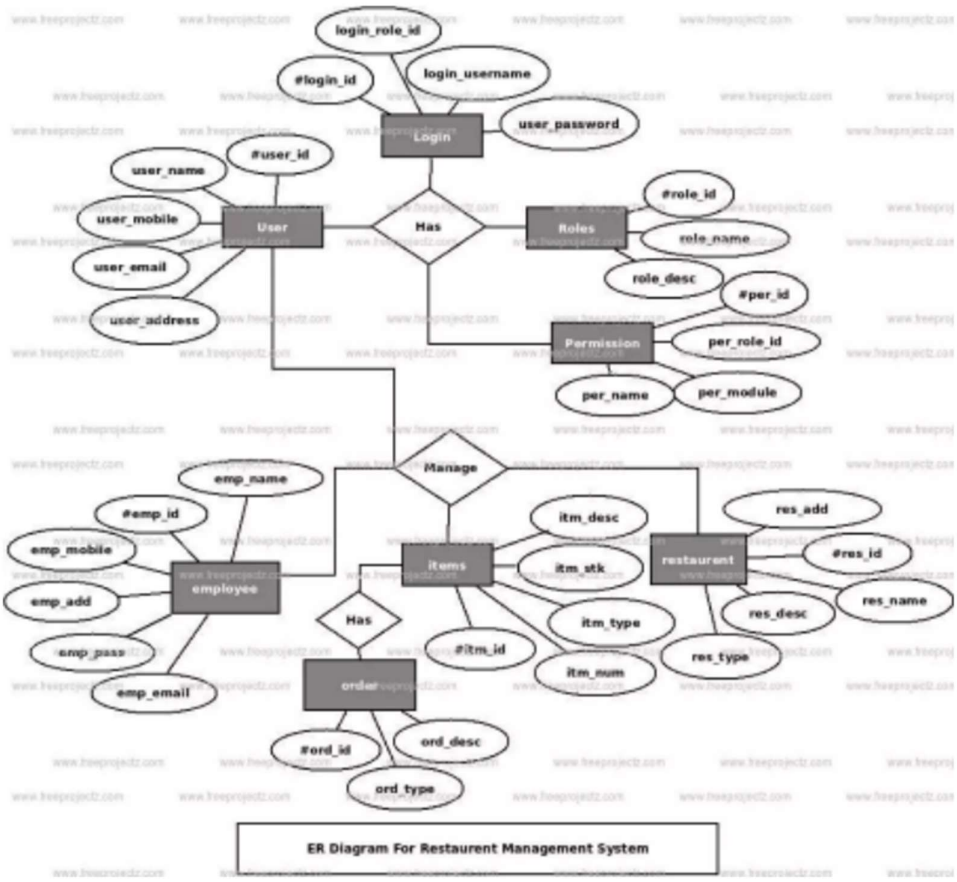
CHAPTER 3

SYSTEM ARCHITECTURE AND DESIGN

1. Architecture Diagram

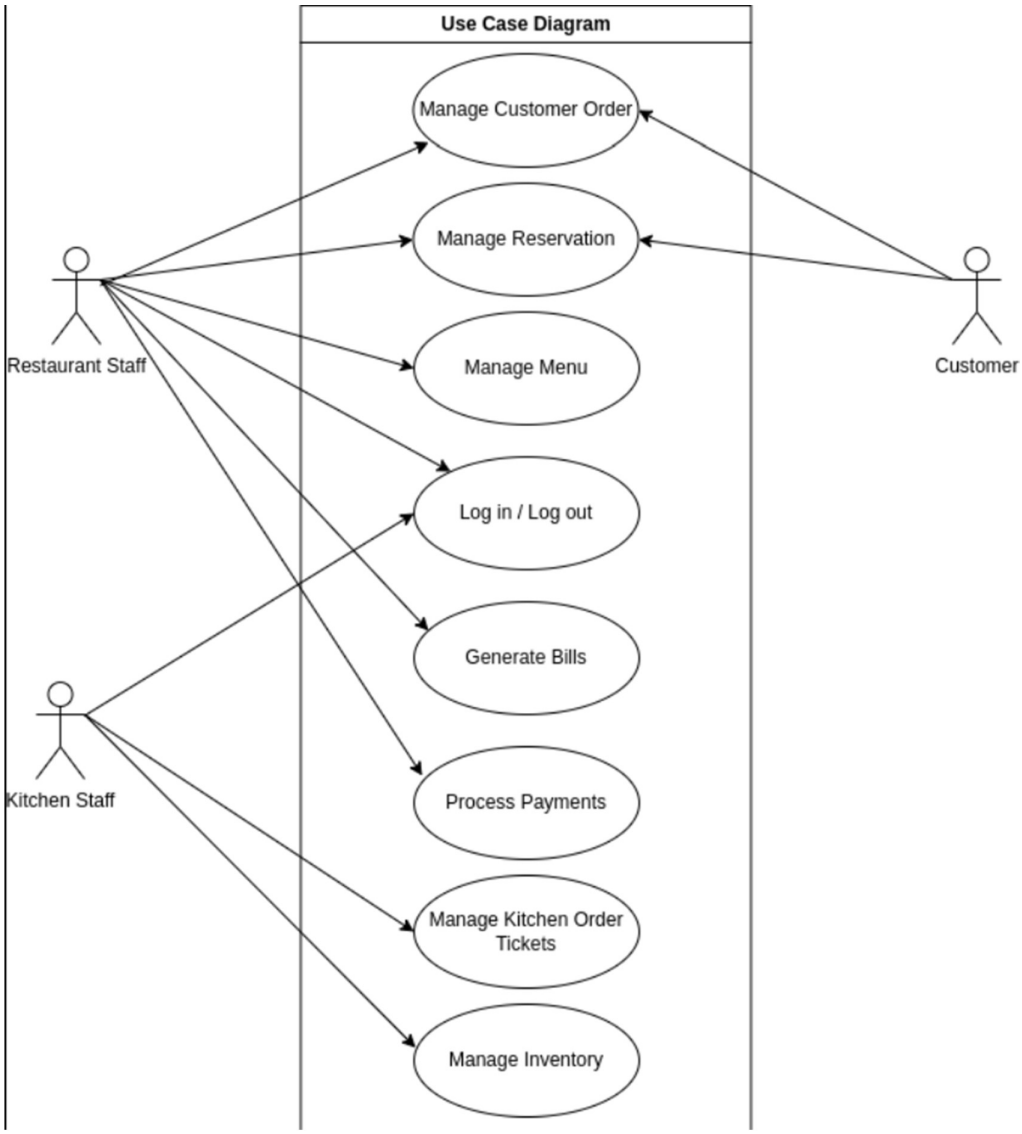


2. ER Diagram

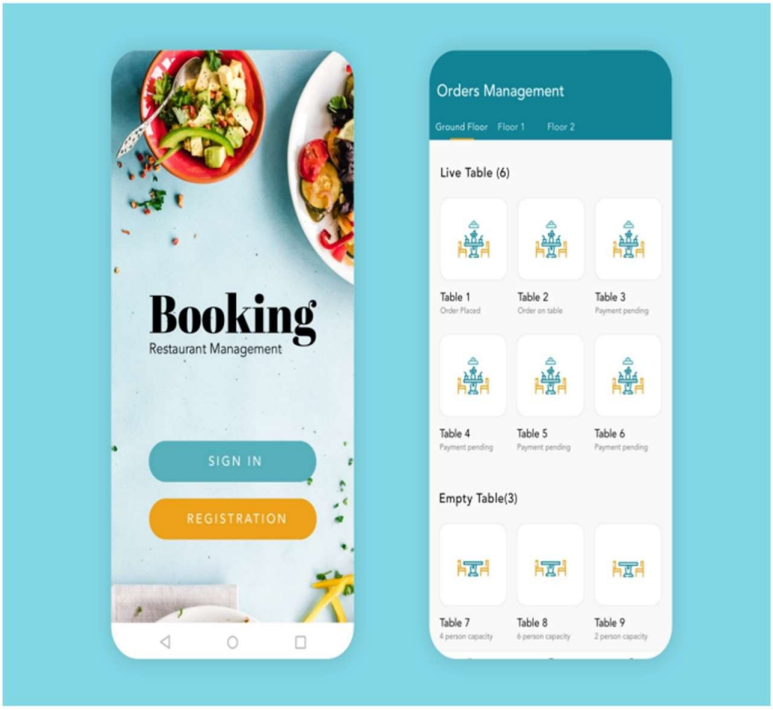


ER Diagram For Restaurent Management System

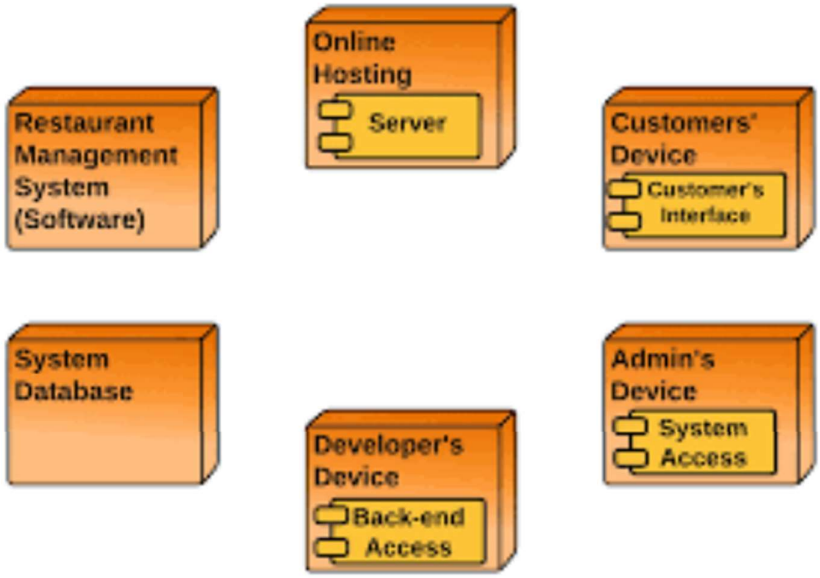
3. Use Case Diagram



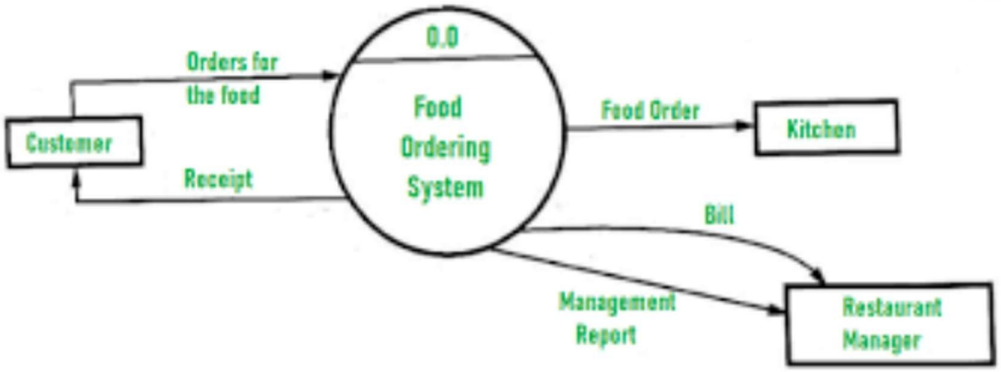
4. **Front end (UI design) and software used with application-**



5. **Back end(Database Design)-**



6. Type of connectivity



Level 0 DFD (Context Level

CHAPTER 4

MODULES AND FUNCTIONALITIES

Managing a restaurant on any regular day can range from minor scheduling delays to major management fiascos. Wish to have your cake and eat it too? While successfully managing a restaurant, you will find yourself in need of multiple helping hands and countless reminders.

What if all the help you need arrived in the exact manner you need and at the exact time, sometimes even without you having to set reminders! An interactive skill set that helps you efficiently manage your restaurant is a power tool that every restaurant needs at hand. So, the introduction of efficient restaurant management systems has given most restaurants the respite they need.

In today's fast-paced world, restaurant owners and managers are always looking for ways to improve efficiency and streamline operations to provide the best possible experience for their customers. Managing a restaurant can be a complex task that involves many moving parts, from inventory management to table allocation, from order taking to payment processing. To meet these challenges, restaurant owners are turning to advanced technology-based solutions, such as restaurant management systems.

The use of restaurant management systems provides a range of benefits to restaurant owners and managers, including increased efficiency, accuracy, and customer satisfaction. These systems allow restaurant owners to manage multiple tasks simultaneously, automate routine tasks, and provide real-time visibility into key performance metrics. This enables owners to make informed decisions quickly and efficiently, improving their ability to respond to changing market conditions and customer needs

Restaurant management systems also provide a range of features designed to enhance the customer experience. These systems enable customers to place orders online or through mobile devices, which can be customized to their specific preferences. Additionally, they allow customers to pay for their meals using a variety of payment methods, including credit and debit cards, mobile payments, and cash.

In conclusion, restaurant management systems have become an essential tool for restaurant owners and managers, providing them with the necessary tools to streamline operations, improve efficiency, and enhance the overall customer experience. As the restaurant industry continues to evolve, it is likely that these systems will become even more important in helping restaurant owners stay ahead of the competition and meet the needs of their customers.

Crucial Restaurant Management techniques to Consider Before Purchasing a complete restaurant management system

Irrespective of how big or small your restaurant, a good restaurant management system can truly benefit you in the long run and improve your restaurant's productivity significantly. You will not only make your customers happy but also ensure that your staff is less burdened by repetitive tasks that can simply be managed by the right choice of restaurant software. While relying on restaurant management software sounds like a great idea, there are some modules to consider before purchasing one for your restaurant. We list down some of the most important restaurant management modules every growing restaurant needs:

1. Cloud Backup

In today's digital age, businesses are increasingly leveraging cloud-based systems to manage their operations and resources more efficiently. The restaurant industry is no exception, as cloud-based Restaurant Management Systems (RMS) offer several benefits that can give businesses a competitive edge.

One significant advantage of a cloud-based RMS is its ability to transcend beyond the physical boundaries of a restaurant establishment. Restaurant owners and managers can access and manage their operations from anywhere at any time, using any device with an internet connection. This flexibility allows for real-time decision making and the ability to respond quickly to changing business needs.

Another advantage of a cloud-based RMS is its ability to provide transparency in all aspects of restaurant operations. With all resources and operations managed in a centralized system, there is a reduction in human error, ensuring the accuracy of data and providing an easier way to monitor operations. This transparency can lead to better decision-making, improved communication, and streamlined workflows.

Furthermore, a cloud-based RMS can provide cost savings in the long run. Traditional on-premise software systems require significant upfront costs for hardware, software licenses, and maintenance.

In contrast, a cloud-based RMS eliminates the need for these expenses, making it a more cost-effective solution for restaurant businesses of all sizes.

Overall, a cloud-based Restaurant Management System offers a multitude of benefits for the restaurant industry, including flexibility, transparency, improved decision-making, streamlined workflows, and cost savings. As technology continues to evolve, cloud-based systems will becomean increasingly integral part of the restaurant industry's digitized landscape.

2. Inventory Management-

For restaurant businesses, keeping track of inventory is essential to ensure smooth operations and profitability. However, manually taking stock can be a time-consuming task that can slow down other crucial operations. In today's fast-paced environment, restaurant owners and managers need an efficient solution that can provide real-time figures and streamline inventory management processes.

An automated inventory management system can provide a solution to this problem. By utilizing technology, a restaurant can optimize its inventory management practices and achieve more accurate and efficient stock-taking tasks. The system allows for real-time updates on stock levels, enabling restaurant owners and managers to restock at the right time and avoid shortages or excess stock.

Moreover, an automated inventory management system provides a centralized platform for monitoring inventory across multiple locations. This eliminates the need for manual tracking ofstock across different locations, reducing errors and providing a more accurate picture of inventory levels.

Additionally, automated inventory management systems can also help with cost control by identifying trends in inventory usage, allowing for better forecasting and budgeting. This information enables restaurant owners and managers to make data-driven decisions that can improve profitability and reduce waste.

In summary, an automated inventory management system is a valuable asset for restaurant businesses seeking to improve inventory management practices. With real-time updates, centralized monitoring, and cost control benefits, this system can help restaurant owners and managers streamline inventory management processes and optimize operations for improved profitability.

3. Table Management-

In the highly competitive restaurant industry, providing exceptional customer service is essential to attract and retain customers. For growing restaurants, managing tables and serving customers efficiently is a top priority. However, manually managing tables and customers can lead to delays and missed opportunities to provide quality service.

To address this challenge, a table management system can be an effective solution. This system allows restaurants to manage their seating arrangements, track table availability, and monitor wait times for customers. By providing a centralized platform for managing tables, restaurant owners and managers can optimize their seating arrangements and serve customers in a timely and efficient manner.

Additionally, a table management system can provide real-time information on table availability,wait times, and customer preferences. This information enables restaurant staff to make data-driven decisions that can improve customer satisfaction and increase revenue.

Furthermore, a table management system can provide a platform for customer data collection and analysis. By collecting data on customer preferences, behavior, and feedback, restaurant owners and managers can gain insights into customer needs and preferences. This information can be used to improve menu offerings, personalize customer experiences, and drive customer loyalty.

In summary, a table management system is a valuable tool for growing restaurants seeking to improve customer service and increase revenue. By optimizing seating arrangements, providing real-time information, and collecting customer data, this system can help restaurant owners and managers streamline operations and provide exceptional customer service.

4. Revenue Management

In the restaurant industry, presenting bills to customers at the right time is crucial for ensuring customer satisfaction. However, managing the billing process manually can be time-consuming and prone to errors. In addition, customers expect to have a range of payment options available to them, such as debit/credit card, cash, or other electronic media.

To address this challenge, a revenue management system can be an effective solution. This system allows restaurants to manage billing and payment processes efficiently, ensuring that customers receive their bills at the right time and have access to a range of payment options

With a revenue management system, restaurants can automate the billing process, generating accurate bills and reducing the risk of errors. This saves time for restaurant staff, who can focus on other important tasks, such as serving customers and managing operations.

Moreover, a revenue management system provides customers with the flexibility to pay using their preferred mode of payment. This enhances the customer experience, as customers can choose the most convenient option for them. Additionally, the system is discreet, ensuring that customers' personal and financial information is kept secure.

Furthermore, a revenue management system provides restaurant owners and managers with valuable insights into revenue streams, enabling them to make data-driven decisions to optimize profitability. By tracking revenue in real-time, restaurant owners and managers can identify trends and adjust pricing and menu offerings to maximize revenue.

In summary, a revenue management system is a valuable tool for restaurants seeking to improve billing and payment processes, enhance the customer experience, and optimize revenue. With automation, flexibility, and data-driven insights, this system can help restaurant owners and managers streamline operations and improve profitability.

5. Menu Management

In the restaurant industry, printed menus have been the traditional way of presenting food and beverage offerings to customers. However, relying solely on printed menus can pose several challenges, such as the risk of running out of stock, or needing to make changes due to seasonal availability or updates to the menu.

This is where a restaurant management system with an e-menu feature can be a game-changer. An e-menu allows restaurants to update their menu offerings in real-time, providing customers with accurate information on what dishes are available and what ingredients are being used. By keeping the menu up-to-date, restaurants can avoid disappointment among diners and maintain a positive reputation.

In addition, an e-menu can enhance the dining experience by providing customers with interactive and engaging features such as images of dishes, nutritional information, and suggested wine pairings. This can also help restaurants to upsell and increase revenue.

Moreover, an e-menu can help restaurant owners and managers to streamline their operations, reducing the time and resources required to create and print new menus. This can lead to cost savingsand improved efficiency.

Furthermore, a restaurant management system with an e-menu feature can provide valuable insights into customer preferences and purchasing behavior. By analyzing data on menu items that are popular or frequently ordered, restaurant owners and managers can make data-driven decisions to optimize their menu offerings and improve profitability.

In conclusion, a restaurant management system with an e-menu feature can be a valuable tool for restaurants seeking to provide accurate and up-to-date menu information, enhance the dining experience, streamline operations, and optimize profitability. By leveraging technology to improve menu management, restaurants can stay competitive and meet the evolving needs of their customers.

6. Order Status Recounting

In the fast-paced world of the restaurant industry, managing orders can be a challenging task. Whether you're serving customers within your restaurant or delivering orders to customers outside, keeping track of every order is crucial to maintaining a positive reputation. A missed order can lead to customer dissatisfaction, lost revenue, and damage to your brand.

To address these challenges, a restaurant management system with an order status tracking program is essential. By allowing customers to place orders and providing real-time updates on the status of their orders, restaurants can improve customer satisfaction and streamline their operations.

Moreover, an order status tracking program can provide restaurant owners and managers with valuable insights into order volumes, popular menu items, and customer behavior. This data can be used to optimize inventory management, menu planning, and pricing strategies, improving profitability.

In addition, a robust order status tracking system should be able to function even in the absence of an internet connection or during a network outage. This ensures that orders can continue to be processed and fulfilled, minimizing disruptions and avoiding lost revenue.

Furthermore, integrating an order status tracking program with a revenue manager system can provide a comprehensive view of your restaurant's financial performance, allowing for better decision-making and improved profitability.

In conclusion, a restaurant management system with an order status tracking program is a powerful tool for managing orders, improving customer satisfaction, and optimizing operations. By leveraging technology to streamline the order management process, restaurants can stay competitive and meet the evolving needs of their customers.

Query

```
drop database if exists `restaurant`;
create database `restaurant`;
use `restaurant`;

drop table if exists `USER`;
create table `USER`(
        `User_Id` int NOT NULL AUTO_INCREMENT,
        `Fname` varchar(50) NOT NULL,
        `Lname` varchar(50) NOT NULL,
        `Password` varchar(50) NOT NULL,
        PRIMARY KEY (`User_Id`)
)ENGINE=InnoDB DEFAULT CHARSET=latin1;

drop table if exists `RESTAURANT`;
create table `RESTAURANT`(
        `Name` varchar(100) NOT NULL,
        `Location` varchar(100) NOT NULL,
        `Contact` varchar(100) NOT NULL,
        `Opening_Closing_Time` varchar(100) NOT NULL,
        `Details` varchar(500) default NULL,
        PRIMARY KEY (`Name`)
)ENGINE=InnoDB DEFAULT CHARSET=latin1;

drop table if exists `OWNER`;
create table `OWNER`(
        `Fname` varchar(15) NOT NULL,
        `Lname` varchar(15) NOT NULL,
```

```
	`Contact` varchar(100) NOT NULL,
	`Rest_Name` varchar(100) NOT NULL,
	PRIMARY KEY (`Fname`,`Lname`,`Contact`),
	FOREIGN KEY (`Rest_Name`) REFERENCES `RESTAURANT`(`Name`)
	ON UPDATE CASCADE
) ENGINE=InnoDB DEFAULT CHARSET=latin1;

drop table if exists `BILL`;
create table `BILL`(
	`Order_Id` int NOT NULL AUTO_INCREMENT,
	`Customer_Fname` varchar (20) NOT NULL,
	`Customer_Lname` varchar (20) NOT NULL,
	`Customer_id` int NOT NULL,
	`Total_Amount` double NOT NULL,
	PRIMARY KEY (`Order_Id`)
) ENGINE=InnoDB DEFAULT CHARSET=latin1;

drop table if exists `MENU_BILL`;
create table `MENU_BILL`(
	`Order_Id` int NOT NULL,
	`Name` varchar(100) NOT NULL,
	`Quantity` varchar(20) NOT NULL,
	`Price` varchar(20) NOT NULL,
	FOREIGN KEY(`Order_Id`) REFERENCES `BILL`(`Order_Id`)
) ENGINE=InnoDB DEFAULT CHARSET=latin1;

drop table if exists `CUSTOMER`;
create table `CUSTOMER`(
	`Customer_Id` int NOT NULL AUTO_INCREMENT,
	`Fname` varchar(15) NOT NULL,
```

```
	`Lname` varchar(15) NOT NULL,
	`Contact` varchar(20) DEFAULT NULL,
	`Email_Id` varchar(50) DEFAULT NULL,
	PRIMARY KEY (`Customer_Id`)
) ENGINE=InnoDB DEFAULT CHARSET=latin1;

drop table if exists `MANAGER`;
create table `MANAGER`(
	`Manager_Id` int NOT NULL AUTO_INCREMENT,
	`Fname` varchar(15) NOT NULL,
	`Lname` varchar(15) NOT NULL,
	`Contact` varchar(20) NOT NULL,
	`Address` varchar(30) DEFAULT NULL,
	`Salary` varchar(30) DEFAULT NULL,
	`Sex` char(1) DEFAULT NULL,
	`Bdate` date DEFAULT NULL,
	`Join_Date` date NOT NULL,
	PRIMARY KEY (`Manager_Id`)
) ENGINE=InnoDB DEFAULT CHARSET=latin1;

drop table if exists `WAITER`;
create table `WAITER`(
	`Waiter_Id` int NOT NULL AUTO_INCREMENT,
	`Fname` varchar(15) NOT NULL,
	`Lname` varchar(15) NOT NULL,
	`Contact` varchar(20) NOT NULL,
	`Address` varchar(30) DEFAULT NULL,
	`Salary` varchar(30) DEFAULT NULL,
	`Sex` char(1) DEFAULT NULL,
	`Bdate` date DEFAULT NULL,
```

```
	`Join_Date` date NOT NULL,
	PRIMARY KEY (`Waiter_Id`)
) ENGINE=InnoDB DEFAULT CHARSET=latin1;

drop table if exists
`CASHIER`;create table
`CASHIER`(
	`Cashier_Id` int NOT NULL AUTO_INCREMENT,
	`Fname` varchar(15) NOT NULL,
	`Lname` varchar(15) NOT NULL,
	`Contact` varchar(20) NOT NULL,
	`Address` varchar(30) DEFAULT NULL,
	`Salary` varchar(30) DEFAULT NULL,
	`Sex` char(1) DEFAULT NULL,
	`Bdate` date DEFAULT NULL,
	`Join_Date` date NOT NULL,
	PRIMARY KEY (`Cashier_Id`)
) ENGINE=InnoDB DEFAULT CHARSET=latin1;

drop table if exists `COOK`;
create table `COOK`(
	`Cook_Id` int NOT NULL AUTO_INCREMENT,
	`Fname` varchar(15) NOT NULL,
	`Lname` varchar(15) NOT NULL,
	`Contact` varchar(20) NOT NULL,
	`Address` varchar(30) DEFAULT NULL,
	`Salary` varchar(30) DEFAULT NULL,
	`Sex` char(1) DEFAULT NULL,
	`Bdate` date DEFAULT NULL,
	`Join_Date` date NOT NULL,
	`Specialization` varchar(50) DEFAULT NULL,
```

```
        PRIMARY KEY (`Cook_Id`)
) ENGINE=InnoDB DEFAULT CHARSET=latin1;

drop table if exists `HOME_DELIVERY`;
create table `HOME_DELIVERY`(
        `Delivery_Id` int NOT NULL AUTO_INCREMENT,
        `Address` varchar(50) NOT NULL,
        `Contact` varchar(20) NOT NULL,
        `Cust_Id` int NOT NULL,
        `Order_Id` int NOT NULL,
        PRIMARY KEY(`Delivery_Id`),
        FOREIGN KEY (`Cust_Id`) REFERENCES `CUSTOMER`(`Customer_Id`),
        FOREIGN KEY (`Order_Id`) REFERENCES `BILL`(`Order_Id`)
) ENGINE=InnoDB DEFAULT CHARSET=latin1;

drop table if exists `DELIVERY_BOY`;
create table `DELIVERY_BOY`(
        `Delivery_Boy_Id` int NOT NULL AUTO_INCREMENT,
        `Fname` varchar(15) NOT NULL,
        `Lname` varchar(15) NOT NULL,
        `Contact` varchar(20) NOT NULL,
        `Address` varchar(30) DEFAULT NULL,
        `Salary` varchar(30) DEFAULT NULL,
        `Sex` char(1) DEFAULT NULL,
        `Bdate` date DEFAULT NULL,
        `Join_Date` date NOT NULL,
        PRIMARY KEY (`Delivery_Boy_Id`)
) ENGINE=InnoDB DEFAULT CHARSET=latin1;

drop table if exists `DELIVERY_BOY_2`;
```

```
create table `DELIVERY_BOY_2`(
        `Boy_Id` int NOT NULL,
        `Delivery_Id` int NOT NULL,
        FOREIGN KEY (`Boy_Id`) REFERENCES `DELIVERY_BOY`(`Delivery_Boy_Id`),
        FOREIGN KEY (`Delivery_Id`) REFERENCES `HOME_DELIVERY`(`Delivery_Id`)
) ENGINE=InnoDB DEFAULT CHARSET=latin1;

drop table if exists `MENU`;
create table `MENU`(
        `Menu_Id` int NOT NULL AUTO_INCREMENT,
        `Name` varchar(100) NOT NULL,
        `Price` varchar(20) NOT NULL,
        `Type` varchar(20) DEFAULT NULL,
        `Category` varchar(30) NOT NULL,
        PRIMARY KEY(`Menu_Id`,`Name`)
) ENGINE=InnoDB DEFAULT CHARSET=latin1;

drop table if exists `SALE_DETAIL`;
create table `SALE_DETAIL`(
        `Date` date NOT NULL,
        `Daily` int NOT NULL,
        `Weekly` int DEFAULT NULL,
        `Monthly` int DEFAULT NULL,
        `Rname` varchar(30) DEFAULT NULL
) ENGINE=InnoDB DEFAULT CHARSET=latin1;

drop table if exists `SUPPLIER`;
create table `SUPPLIER`(
        `Fname` varchar(15) NOT NULL,
        `Lname` varchar(15) NOT NULL,
```

```
	`Address` varchar(30) NOT NULL,
	`Contact` varchar(20) NOT NULL,
	`Details` varchar(500) DEFAULT NULL,
	PRIMARY KEY (`Fname`,`Lname`,`Address`)
) ENGINE=InnoDB DEFAULT CHARSET=latin1;

drop table if exists `TABLES`;
create table `TABLES`(
	`Table_Number` varchar(9) NOT NULL,
	`Details` varchar(200) DEFAULT NULL,
	PRIMARY KEY (`Table_Number`)
) ENGINE=InnoDB DEFAULT CHARSET=latin1;

drop table if exists `BOOKING`;
create table `BOOKING`(
	`Booking_Id` int NOT NULL AUTO_INCREMENT,
	`Table_Num` varchar(30) NOT NULL,
	`Date` varchar(30) NOT NULL,
	`Time` varchar(30) NOT NULL,
	`Cust_Id` int NOT NULL,
	PRIMARY KEY (`Booking_Id`),
	FOREIGN KEY (`Cust_Id`) REFERENCES `CUSTOMER`(`Customer_Id`),
	FOREIGN KEY (`Table_Num`) REFERENCES `TABLES`(`Table_Number`)
) ENGINE=InnoDB DEFAULT CHARSET=latin1;

drop table if exists
`INGREDIENT`;create table
`INGREDIENT`(
	`Ingredient_Id` int NOT NULL AUTO_INCREMENT,
	`Name` varchar(30) NOT NULL,
	`Quantity` varchar(15) NOT NULL,
```

```
    `Description` varchar(100) DEFAULT NULL,
    `Supp_Name` varchar(50) NOT NULL,
    PRIMARY KEY (`Ingredient_Id`,`Name`)
) ENGINE=InnoDB DEFAULT CHARSET=latin1;

insert into `RESTAURANT`(`Name`,`Location`,`Contact`,`Opening_Closing_Time`,`Details`)
values
("Tandoori By Nature","Gandhi Nagar Jammu And Kashmir","09642540626/09581871321","10:00 AM – 12:00 AM","None");

insert into `OWNER`(`Fname`,`Lname`,`Contact`,`Rest_Name`)
values
("Yash","Vadalia","9999999999","Tandoori By Nature");

insert into `MANAGER`(`Fname`,`Lname`,`Contact`,`Address`,`Salary`,`Sex`,`Bdate`,`Join_Date`)
values
("Rishi Raj","Singh Jhelumi","9642540626","E-28 OBH , IIIT Hyderabad","30000","M","1992-09-29","2012-08-01"),
("Prachish","Gora","9581871321","E-27 OBH , IIIT Hyderabad","30000","M","1993-11-18","2012-08-01");

insert into `WAITER`(`Fname`,`Lname`,`Contact`,`Address`,`Salary`,`Sex`,`Bdate`,`Join_Date`)
values
("Raghav","Sharma","123456","E-22 OBH , IIIT Hyderabad","8000","U","1993-10-12","2012-08-01"),
("Rishav","Kumar","132244","E-28 OBH , IIIT Hyderabad","8000","M","1992-12-22","2012-08-01"),
("Vinil","Narang","213122","E-27 OBH , IIIT Hyderabad","8000","M","1993-05-12","2012-08-01"),
("Bharat","Jain","121232","E-26 OBH , IIIT Hyderabad","8000","M","1992-03-12","2012-08-01"),
("Megan","Fox","213122","Hollywood  USA","9000","F","1986-10-13","2012-08-01"),
("Sunny","Leone","323322","Bollywood  INDIA","9000","F","1982-10-13","2012-08-01");
```

insert into `CASHIER`(`Fname`,`Lname`,`Contact`,`Address`,`Salary`,`Sex`,`Bdate`,`Join_Date`)

values

(“Abhinav”,”Mittal”,”124142”,”E-19 OBH , IIIT Hyderabad”,”12000”,”M”,”1993-11-30”,”2012-08-01”),

(“Sanchit”,”Gangwar”,”113332”,”E-24 OBH , IIIT Hyderabad”,”12000”,”M”,”1993-02-21”,”2012-08-01”),

(“Abhishek”,”Kumar”,”122121”,”E-25 OBH , IIIT Hyderabad”,”12000”,”M”,”1992-07-21”,” 2012-08-01”);

insert into
`COOK`(`Fname`,`Lname`,`Contact`,`Address`,`Salary`,`Sex`,`Specialization`,`Bdate`,`Join_Date`)

values

(“Bhavshuk”,”Jindal”,”123211”,”E-18 OBH , IIIT Hyderabad”,”15000”,”M”,”Maggi”,”1992-08-02”,”2012-08-01”),

(“Japneet”,”Singh”,”231312”,”E-19 OBH , IIIT Hyderabad”,”15000”,”M”,”Samosa”,” 1992-10-12”,”2012-08-01”),

(“Dinesh”,”Singla”,”874594”,”E-18 OBH , IIIT Hyderabad”,”15000”,”M”,”Omlette”,”1992-03-14”,”2012-08-01”),

(“Siddharth”,”Sinha”,”587654”,”E-26 OBH , IIIT Hyderabad”,”15000”,”M”,”Bonda”,” 1992-01-01”,”2012-08-01”),

(“Himanshu”,”Aggarwal”,”142355”,”E-24 OBH , IIIT Hyderabad”,”15000”,”M”,”Jalebi”,” 1992-02-22”,”2012-08-01”),

(“Priya”,”Rai”,”897933”,”HOLLYWOOD USA”,”15000”,”F”,”None”,”1980-01-02”,”2012-08-01”);

insert into
`DELIVERY_BOY`(`Fname`,`Lname`,`Contact`,`Address`,`Salary`,`Sex`,`Bdate`,`Join_Date`)

values

(“Tarang”,”Goyal”,”133132”,”E-17 OBH , IIIT Hyderabad”,”10000”,”M”,”1993-02-21”,”2012-08-01”),

(“Saksham”,”Maheshwari”,”657569”,”E-17 OBH , IIIT Hyderabad”,”10000”,”M”,”1992-10-21”,”2012-08-01”),

(“Rajat”,”Agarwal”,”596509”,”E-16 OBH , IIIT Hyderabad”,”10000”,”M”,”1993-02-21”,” 2012-08-01”),

(“Vidit”,”Bhaskar”,”344244”,”E-15 OBH , IIIT Hyderabad”,”10000”,”M”,”1993-10-22”,”2012-08-01”);

insert into `MENU`(`Name`,`Price`,`Type`,`Category`)

values

(“Vegetable Pakora”,”3.00”,”Veg”,”Starters”),

(“Vegetable Samosa”,”3.00”,”Veg”,”Starters”),

(“Onion Bhaji “,”3.00”,”Veg”,”Starters”),

(“Potato and Mushroom Chaat”,”3.00”,”Veg”,”Starters”),

(“Mushroom Garlic Fry”,”3.00”,”Veg”,”Starters”),

(“Chicken Tikka”,”4.00”,”Non-Veg”,”Starters”),

(“Tandoori Chicken”,”4.00”,”Non-Veg”,”Starters”),

(“Chicken Garlic Fry”,”4.00”,”Non-Veg”,”Starters”),

(“Chicken Tikka on Puree”,”4.00”,”Non-Veg”,”Starters”),

(“Lamb Tikka”,”4.00”,”Non-Veg”,”Starters”),

(“Tandoori King Prawn”,”6.95”,”Non-Veg”,”SeaFood”),

(“King Prawn Rosun”,”5.95”,”Non-Veg”,”SeaFood”),

(“King Prawn on Puree”,”5.95”,”Non-Veg”,”SeaFood”),

(“Prawn Bhuna on Puree”,”3.95”,”Non-Veg”,”SeaFood”),

(“Prawn Cocktail”,”3.95”,”Non-Veg”,”SeaFood”),

(“Chi/Lam Sashlik Chi”,”9.95”,”Non-Veg”,”Tandoori Specials”),

(“Tandoori Deluxe”,”12.95”,”Non-Veg”,”Tandoori Specials”),

(“Tandoori Chicken Main”,”9.95”,”Non-Veg”,”Tandoori Specials”),

(“Chicken Tikka”,”7.95”,”Non-Veg”,”Tandoori Specials”),

(“Lamb Tikka”,”9.95”,”Non-Veg”,”Tandoori Specials”),

(“Bombay Aloo “,”6.50”,”Veg”,”Vegetable Dishes”),

(“Mushroom Bhaji “,”6.50”,”Veg”,”Vegetable Dishes”),

(“Saag Dall”,”6.50”,”Veg”,”Vegetable Dishes”),

(“Mattor Paneer”,”6.50”,”Veg”,”Vegetable Dishes”),

(“Vegetable Roshun”,”6.50”,”Veg”,”Vegetable Dishes”),

(“Boiled Rice”,”2.50”,”Veg”,”Side Orders – Rice”),

(“Keema Pilau Rice”,”3.50”,”Non-Veg”,”Side Orders – Rice”),

(“Mushroom Rice”,”3.20”,”Veg”,”Side Orders – Rice”),

(“Garlic Naan”,”3.00”,”Veg”,”Side Orders – Bread”),

(“Stuffed Naan”,”3.50”,”Veg”,”Side Orders – Bread”),

(“Chapati”,”1.00”,”Veg”,”Side Orders – Bread”),

(“Green Salad”,”2.00”,”Veg”,”Side Orders – Sundries”),

(“Spice Popadum”,”0.80”,”Veg”,”Side Orders – Sundries”),

(“Chutney”,”0.70”,”Veg”,”Side Orders – Sundries”),

(“Ras Malai”,”2.95”,”Veg”,”Dessert”),

(“Ice Cream”,”2.95”,”Veg”,”Dessert”),

(“Gulab Jamun”,”2.95”,”Veg”,”Dessert”),

(“Kulfi”,”2.95”,”Veg”,”Dessert”),

(“Kheer”,”2.95”,”Veg”,”Dessert”);

insert into `SUPPLIER`(`Fname`,`Lname`,`Address`,`Contact`,`Details`)

values

(“Varun”,”Vashisht”,”E-121 OBH , IIIT Hyderabad”,”123211”,”Provides Non-Veg Stuff.”),

(“Aneeq”,”Dholakia”,”E-15 OBH , IIIT Hyderabad”,”678668”,”Provides Sea Food.”),

(“Sharad”,”Gupta”,”E-16 OBH , IIIT Hyderabad”,”856855”,”Provides Grocery.”);

insert into `TABLES`(`Table_Number`,`Details`)values

(“1”,”Capacity 4 People”), (“2”,”

Capacity 4 People Near Window”),(“3”,”

Capacity 3 People”),

(“4”,”Capacity 2 People”), (“5”,”

Capacity 8 People Family Table”);

insert into `CUSTOMER`(`Fname`,`Lname`,`Contact`,`Email_Id`)

values

(“Arpit”,”Sharma”,”938912”,”arpit.sharma@students.iiit.ac.in”), (“Yash”,”
Shah”,”289374”,”yash.shah@students.iiit.ac.in”), (“Darshit”,”Serna”,”
234322”,”darshit.serna@students.iiit.ac.in”), (“Aditya”,”Sharma”,”
778989”,” chint.sharma@students.iiit.ac.in”), (“Pallav”,”Shah”,”
364932”,” chint.shah@students.iiit.ac.in”), (“Rajat”,”Bharadwaj”,”
734277”,”rajat.bharadwaj@students.iiit.ac.in”), (“Achintya”,”Madhav”,”
347534”,” chintya.madhav@students.iiit.ac.in”);

insert into `USER`(`Fname`,`Lname`,`Password`)
values
(“admin”,”admin”,”admin”),
(“Akhil”,”Jindal”,”cheetah”),
(“Deepak”,”Goyal”,”manga”),
(“RoopGUN”,”Deeep”,”sodhi”);

Testing:

Case-1: The Code must be tested for any irregularities or unwanted bugs in the user interface. Testing of proper functioning of buttons, scroll wheels etc can also be considered in this case.

Case-2: Testing of database integrity, it should be consistent with the changes requested and should no contain any noise data.

Case-3: Synchronization of user inputs through user interface and implemented of the same in database will be the final test case of the project. The system must be able to perform requested action and save it successfully.

Result & Discussion

In the case of the proposed Restaurant Management System, the success of the system would depend on several factors, such as the accuracy of the database, the usability of the user interface, the level of customization, and the ability to provide real-time insights into various aspects of the business. These factors can be evaluated through user testing, feedback from restaurant owners and managers, and data analysis of system performance.

Additionally, the cost and implementation of the system would need to be considered. The cost of implementing a new system can be a significant investment, and the proposed system would need to demonstrate a return on investment to be considered feasible. The implementation process would also need to be carefully planned and executed to minimize disruption to restaurant operations.

Furthermore, the proposed system would need to comply with relevant regulations and data privacy laws, and appropriate security measures would need to be in place to protect sensitive customer and employee data.

Overall, the success of the proposed Restaurant Management System using a DBMS would depend on a range of factors, including the accuracy, usability, customization, and cost-effectiveness of the system. The result and discussion of the project would involve analyzing these factors and identifying any areas for improvement or further development to ensure the success of the system.

Comments by the faculty during the second review –

We were advised to include an innovative component to our project in order to make it stand out from the rest of its traditional counterparts. Also, we were instructed to include System Architecture diagram.

Answers for the comment during the first review-

We have included required architectural diagram as our teacher asked .We have also thought innovatively in order to stand out our product in market.

Conclusion

In conclusion, the proposed Restaurant Management System (RMS) using a Database Management System (DBMS) offers a comprehensive and integrated solution for managing restaurant operations. The system is designed to be customizable, user-friendly, and able to provide real-time insights into various aspects of the business, such as sales data, customer preferences, and employee performance.

Compared to the existing system, which often relies on standalone software applications and manual processes, the proposed RMS is more efficient, streamlined, and less prone to errors. The system can handle all aspects of restaurant operations within one system, making it easier to manage and reducingthe need for multiple software applications.

The proposed system can be a valuable asset for restaurant owners and managers who want to optimize their performance and increase profitability. By providing real-time insights into various aspects of the business, the RMS can help restaurant owners and managers make informed decisions about their operations, leading to improved efficiency, better customer experience, and increased profitability.

In summary, the proposed RMS using a DBMS is an improvement over the existing system for managing restaurant operations. It offers a comprehensive and integrated solution that can provide real-time insights, streamline processes, reduce errors, and increase efficiency.

References

- Abraham Silberschatz, Henry F. Korth, S. Sudharshan, Database System Concepts¦,Sixth Edition, Tata McGraw Hill,2011.

- Rajesh Narang, Database Management Systems, 2nd ed., PHI Learning Private Limited,2011

- "Restaurant Management System Using Java and MySQL Database," by R. J. P. Nehal and B. K. Soysa, International Journal of Advanced Research in Computer Science and Software Engineering, vol. 8, no. 2, pp. 157-162, February 2018.

- "Design and Development of a Web-based Restaurant Management System," by M. A. S. Akanda, S. Islam, and M. J. Amin, International Journal of Computer Applications, vol. 133, no. 13, pp. 1-8, January 2016.

- "Cloud-Based Restaurant Management System: A New Generation POS," by M. T. Islam, M. N. Uddin, and M. R. Islam, International Journal of Information Technology and Computer Science, vol. 9, no. 5, pp. 68-74, May 2017.

- "A Review of Restaurant Management System: Requirements, Technologies, and Challenges," by N. N. Siddiqui, N. F. Yusop, and N. A. Bakar, Journal of Advanced Research in Computing and Applications, vol. 7, no. 1, pp. 31-42, February 2020.

- "Developing a Comprehensive Restaurant Management System using Object-Oriented Design Principles," by M. H. Al Shibly, Journal of Information Technology Management, vol. 31, no. 4, pp. 1-10, December 2020.

- https://online.visual-paradigm.com/community/share/restaurant-management-er-diagram-vpd-jq447mtf8

- https://restaurant.eatapp.co/blog/ultimate-guide-to-restaur ant-management-software