

ONLINE DIGITAL MENU CARD

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Abstract -The Online Digital Menu Card is a web-based system designed to replace traditional paper menus used in restaurants, cafés, and hotels. In many restaurants, customers still depend on printed menus to view food items and place their orders. These menus can become dirty, damaged, or outdated over time. Updating menu items also requires reprinting the entire menu, which increases cost and wastes paper.

The Online Digital Menu Card system provides a smart solution to this problem. In this system, customers can scan a QR code placed on their table using their smartphone. After scanning the code, the restaurant menu automatically appears on their mobile screen. Customers can easily view food items, prices, images, and descriptions without waiting for a waiter.

The system also helps restaurant owners manage their menu efficiently. Using the admin panel, they can add new food items, update prices, or remove items whenever necessary. This reduces printing costs and saves time. The system also supports online ordering and digital payments, which improves the speed and accuracy of the ordering process.

Overall, the Online Digital Menu Card improves customer experience, reduces human errors, and provides a modern, hygienic, and eco-friendly dining environment.

Key Words: Digital Menu Card, QR Code Menu, Online Food Ordering, Restaurant Management System, Contactless Ordering, Web-Based Application.

INTRODUCTION -

Technology is rapidly changing the way businesses operate. In today's digital world, almost every industry is using technology to improve efficiency and customer satisfaction. The restaurant industry is also adopting modern digital solutions to provide better service to customers.

Traditionally, restaurants use printed menu cards to show available dishes to customers. Customers read the menu and then place their orders through a waiter. Although this method has been used for many years, it has several disadvantages. Paper menus can easily get damaged or dirty because they are handled by many customers. In addition, updating menu items requires reprinting the entire menu card, which takes time and money.

Another problem with traditional menus is that customers cannot see images or detailed descriptions of dishes. Sometimes customers may not fully understand the ingredients or preparation of a dish. This can lead to confusion while ordering.

To solve these problems, the Online Digital Menu Card system has been developed. This system replaces traditional paper menus with digital menus that can be accessed using smartphones. Customers can scan a QR code placed on their table to view the menu instantly.

This digital menu system makes the ordering process faster and more convenient. Customers can easily browse different categories of food, view images, check prices, and place their orders directly from their devices. Restaurant staff can also manage menu items through an admin panel.

The Online Digital Menu Card system improves efficiency, reduces operational costs, and provides a contactless and hygienic dining experience.

Body of Paper-

2.1 Literature Review

In recent years, many restaurants have started using digital technologies to improve their services. Digital menu systems and online ordering platforms are becoming increasingly popular because they provide convenience for both customers and restaurant owners. Several research studies show that digital menus increase customer engagement and improve decision-making. When customers can see images and descriptions of food items, they are more likely to explore the menu and order more dishes.

QR code-based restaurant systems have also become popular, especially after the COVID-19 pandemic. Many restaurants introduced contactless menus to reduce physical contact between customers and staff.

Existing restaurant management systems also include features such as online ordering, digital payments, and order tracking. However, many of these systems are expensive and complicated for small restaurants.

The Online Digital Menu Card project focuses on developing a simple, user-friendly, and affordable solution that can be easily used by small and medium-sized restaurants.

2.2 Existing System

The existing system used in most restaurants is based on traditional paper menu cards. In this system, customers receive a printed menu when they sit at a table. They read the menu and place their orders with the help of a waiter. Although this method is simple, it has several disadvantages.

- Paper menus can easily become damaged, dirty, or outdated. When menu items or prices change, restaurants must print new menu cards, which increases cost.
- The order-taking process is completely manual. Waiters must write down customer orders and deliver them to the kitchen. This process can sometimes lead to mistakes or delays.
- Traditional menus cannot display images or detailed information about dishes. Customers only see the name and price of the food item.
- Repeated handling of menu cards by many people may create hygiene concerns.

2.3 Proposed System

The proposed system is an Online Digital Menu Card that allows customers to view restaurant menus digitally.

In this system, each table in the restaurant has a unique QR code. Customers can scan the QR code using their smartphone camera. Once scanned, the digital menu automatically opens on their device.

The menu shows different food categories such as starters, main course, desserts, and beverages. Customers can click on each item to view images, descriptions, and prices.

Restaurant owners can manage the menu through an admin panel. They can add new food items, update prices, upload images, or remove unavailable dishes.

The system can also support online ordering and payment features. Customers can place their order directly from the menu, which reduces waiting time and improves service efficiency.

2.4 System Architecture

The system architecture consists of several components:

Customer Side (Front-End)

Customers access the menu by scanning a QR code using their smartphones. The QR code opens a web page displaying the digital menu.

Admin Panel

Restaurant owners or staff can log in to the admin panel to manage menu items. They can add, update, or delete food items and change prices.

Server (Back-End)

The server handles the communication between the front end and the database. It processes requests from users and sends the required data to the interface.

Database

The database stores all menu information such as food items, categories, prices, and customer orders.

QR Code System

Each restaurant or table has a QR code that links directly to the digital menu.

2.4.1 Data Flow Diagram

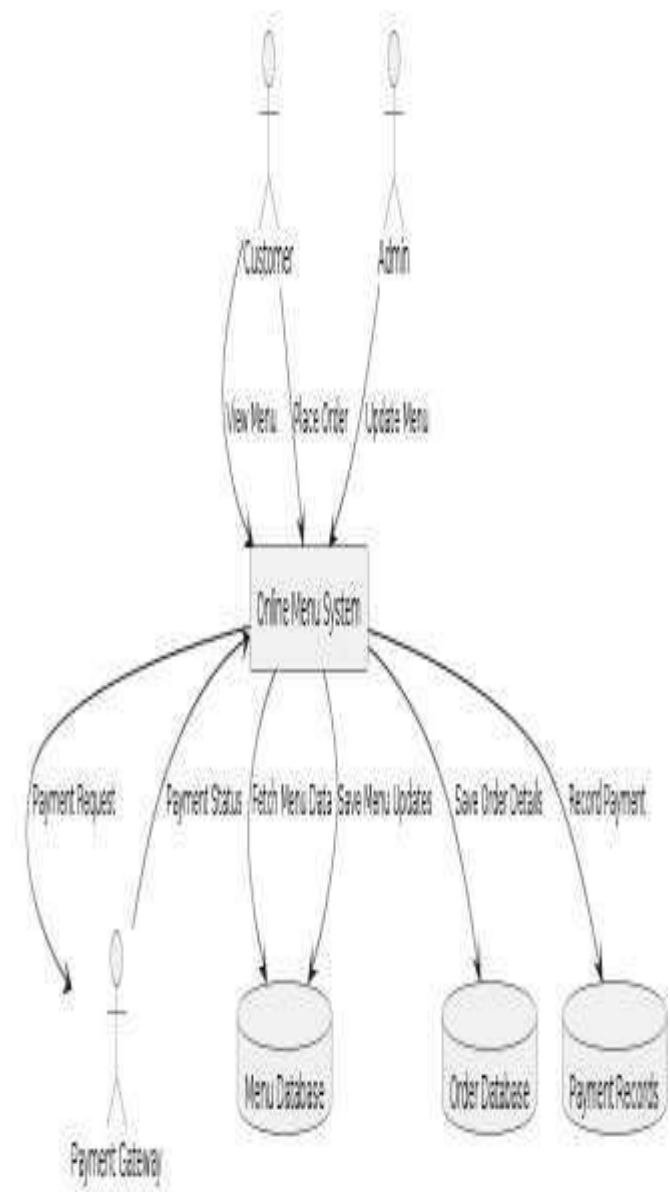


Fig.,1

The Online Digital Menu Card system includes different participants who interact with the system to perform various tasks. The main participants are the customer, administrator, and payment gateway. These participants communicate with the central Online Menu System, which manages menu information, order processing, and payment records.

The customer uses the system to view the digital menu and place food orders. The system retrieves menu details from the menu database and displays them to the customer. After selecting the desired food items, the

customer places an order through the system, making the ordering process faster and more convenient.

The administrator manages the system by updating menu items, modifying prices, and ensuring that the menu information is accurate. When updates are made, the system stores the information in the menu database so that customers can view the latest menu details.

When the customer proceeds with payment, the system sends a payment request to the payment gateway. The gateway verifies the transaction and returns the payment status. If the payment is successful, the system records the transaction in the payment records database and saves the order details in the order database. This interaction ensures smooth ordering and secure payment processing within the Online Digital Menu Card system.

2.4.1 Design Methodology

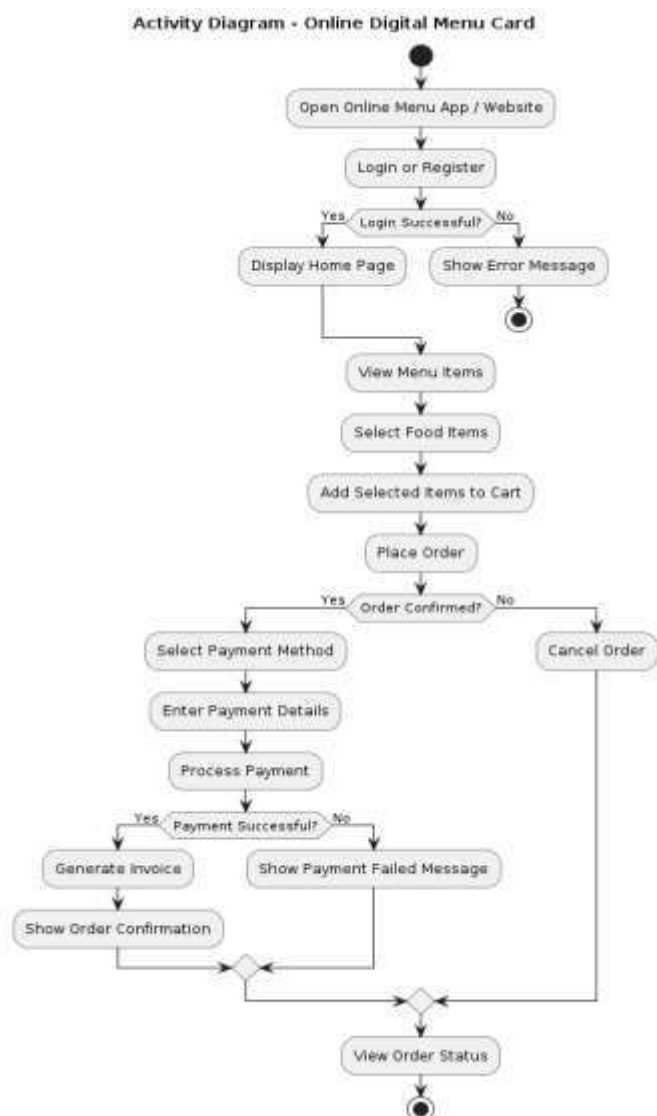


Fig.,2

The **Online Digital Menu Card system** allows users to interact with the application to browse menu items, place orders, and complete payments. Customers access the

system through the online menu application or website, where they log in or register to begin the ordering process. After a successful login, users can explore the digital menu that displays various food items along with their descriptions and prices. They can select the desired food items, add them to the cart, and proceed to place an order. Once the order is placed, customers confirm the order and select a suitable payment method to complete the transaction.

The system is designed to manage and maintain menu items, prices, and food availability so that users can view accurate and updated information while placing orders. It also ensures smooth order processing and efficient system operation. During the ordering process, users enter the required payment details and complete the payment through the integrated payment gateway.

If the payment is successful, the system generates an invoice and displays the order confirmation. In case the payment fails, the system shows a payment failure message and allows the user to attempt the payment again if needed. After the transaction is completed, users can view the order status within the system. This process ensures a smooth and efficient digital ordering experience for customers using the Online Digital Menu Card system.

2.5 Modules

1)Login:

The login page allows the customer to enter the application using a registered mobile number or username and password. After entering the correct details, the user can access the digital menu system and use all the features of the application.

2)Phone Authentication:

In phone authentication, the customer enters their mobile number for verification. The system sends an OTP (One Time Password) to the mobile number, and the customer enters the OTP to verify their identity and continue using the application.

3)QR Code Scan:

In this module, the customer scans the restaurant's QR code using the mobile camera. After scanning the QR code, the restaurant's digital menu automatically opens on the customer's device.

4)Menu Page:

The menu page displays the list of food items available in the restaurant. Each item includes its name, image, and price so that customers can easily see the available dishes and choose what they want to order.

5)Item Details Page:

This page shows more detailed information about a selected food item. It may include the food image, price, description, and ingredients to help the customer understand the item before ordering.

6)Add to Cart:

In this module, customers can add their selected food items to the cart. They can also increase or decrease the quantity of the items and see the total price of their selected order.

7)Order Page:

On the order page, the customer reviews the selected items before placing the order. The system may ask for the table number to ensure the order is delivered to the correct table in the restaurant.

8)Payment Page:

The payment page allows the customer to pay for their order. Different payment methods such as UPI, debit card, credit card, or cash payment may be available.

9)Order Confirmation Page:

After placing the order, this page displays a confirmation message showing that the order has been successfully placed. It may also show an order number or order details.

10)Feedback Page:

The feedback page allows customers to give ratings and comments about the food quality and service. This helps the restaurant understand customer satisfaction and improve their services.

11)Logout:

The logout option allows the customer to safely exit the application. After logging out, the user session ends and the customer needs to log in again to use the application.

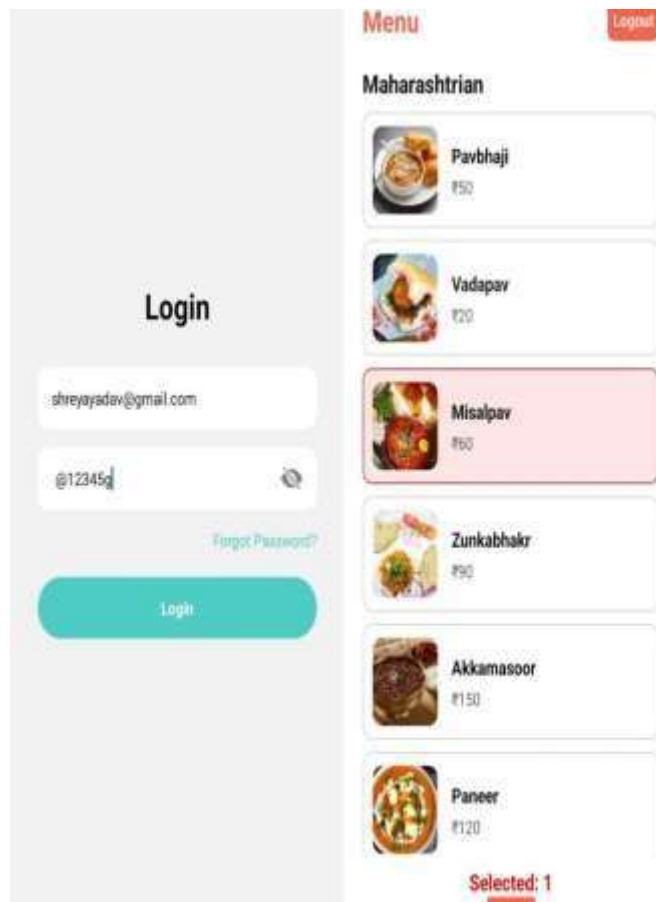


Fig.,3

This image shows two screens of the Online Digital Menu Card application. On the left side, there is a Login screen where the user enters their email and password to access the application. It also includes options like show/hide password, forgot password, and a login button to enter the system. On the right side, there is a Menu screen that displays different Maharashtrian food items available in the restaurant. Each item shows its image, name, and price, such as Pavbhaji, Vadapav, Misalpav, Zunkabhakar, Akkamasoor, and Paneer. The user can select any food item they want to order, and the selected item is highlighted. At the bottom, it shows how many items are selected, and there is also a logout option at the top to exit the application.

3. CONCLUSIONS

The **Online Digital Menu Card system** provides an effective solution that improves the dining experience for both customers and restaurant management. Customers can easily access the digital menu through their smartphones, allowing them to view food items, prices, and descriptions conveniently. This helps customers make quick decisions while placing their orders and reduces waiting time in restaurants.

The system also supports restaurant administrators in managing menu items efficiently. Administrators can easily update menu details, modify prices, and manage food availability without printing new paper menus. This makes the management process simpler and more organized while ensuring that customers always receive accurate and updated information.

In addition, the system helps restaurant staff and management handle orders more efficiently. Digital ordering reduces the chances of errors that may occur in manual order-taking and improves the speed of service. The system also records order and payment details, which helps in better tracking and management of restaurant operations.

Overall, the Online Digital Menu Card system improves interaction between customers and restaurant management while making the ordering process faster and more convenient. By reducing manual work and supporting digital operations, the system contributes to a more efficient and modern restaurant environment.

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