

## **QR CODE BASED FOOD ORDERING SYSTEM**

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### **ABSTRACT**

Food ordering are very important service for a restaurant. This is a service that offered by a waiter to a customer who came to the restaurant. There are some problems that maybe to face by using the traditional food ordering. Problems that occur are misunderstanding between the waiter and the customer when taking the order. Besides, the customer need to wait for a moment for a waiter to come to take the order. The current system are using the traditional way which using a piece of paper and menu paper to take an order from the customers. Therefore, Food Ordering System using QR Code technology is a real time ordering system to manage the order process for the restaurant. Therefore, the food ordering system using QR Code technology is an alternative to solve that problem. The system use smartphone as a platform because nowadays smartphone is a necessary for everyone. The customers need to scan the QR Code on the menu paper that provided by the restaurant. By using this system also, the customer can confirm the ordered item. Besides, the staff of the restaurant also can manage the menu and view order list.

### **1. INTRODUCTION**

Almost every industry is embracing the road to digital transformation and the restaurant sector is no exception. Despite it being classified as an essential business and continuing to reach out to its customers in one way or the other, it incurred heavy losses. The traditional paper based ordering method is being used in most of the restaurants worldwide. In this system the whole process of checking the menu, ordering food to bill receipt is done using paper. Here, the waiter takes the order from the customer and forwards it to the kitchen. There are a lot of problems associated with this system. The most common stumble is that waiters may make mistakes with customers' orders. At times, a waiter may forget to add a specific item ordered by the

customers and make changes and forget to give the updated order to the kitchen. It is extremely important for the waiters to rely on the chefs to inform them whether the food is ready or not. The restaurant business has been adversely affected because of the covid pandemic. Hygiene and safety is the prime concern of consumers when they think of moving out to dine. People are afraid of catching the virus in public places and thus, order everything online. The advent of contactless food ordering has revolutionized the way customers to have an interaction with restaurants. With the help of web-based platforms and QR codes, customers can easily browse menus, customize orders, and securely make payments using their smartphones or devices. Digital platforms provide customers



user-friendly interface and allow them to explore restaurants. By using contactless food ordering systems customers can no longer need to wait for physical menus. The process begins by leveraging the power of QR codes which is playing a major role in the restaurant industry. Digital technologies have brought automation to many industries including the food industry. The advancement of wireless technology not only provided the end users convenience of using these systems.

The use of mobile technology has become a part of handling the features and opened a way for exchanging information. The main purpose of this project is to order food using a QR code more safely and responsively. Customers can scan a QR code and can easily access the menu and order food without any physical contact. Generating a QR code is a hassle-free process for restaurants and can keep track of orders and payments from customers. Maintaining physical records can be more tedious, the data can be accessed and modified easily. Food ordering technology has huge competition in the restaurant industry. With the help of a secure streamlined payment process, customer can easily make their transactions. Restaurants can provide customers 2 safe dining experience by setting a new standard for future dining. Overall contactless food ordering provides a safe and efficient way for restaurants to provide service to their customers. This technology enhances the dining experience and improves the operational efficiency of restaurants. This has immensely affected the footfall that a restaurant receives and eventually their sales. Due to the covid

norms imposed by the government, the restaurants have to reduce their opening hours and capacity. Many restaurants are using printed laminated paper menus. Since printed menus are one of the most touch surfaces in any restaurant as they go through different hands. They require constant sanitation and also such menus are harmful to the environment. The designed system will help the restaurants to overcome such consequences by means of having a digital menu which is an essential part of contactless dining.

## 2. LITERATURE SURVEY

In an automated food ordering system is proposed which will keep track of users and others smartly. Basically, they implemented a food ordering system for different types of restaurants in which user will make order or make custom food buy one click on only. By means of Android application for tablet PCs the system was implemented the frontend was developed using Java, Android and the back in my SQL database was used. Varsha Chavan, Priya Jadhav, Snehal Korade, Priyanka Teli, Implementing Customizable “Online Food Ordering System Using Web Based Application”, International Journal of Innovative Science, Engineering Technology (IJSET) 2015. In customer using a smartphone is considered as a basic assumption for the system. When the customer approaches the restaurant, the saved order can be confirmed by touching the smartphone. The list of selected pre-ordered items shall be shown on the kitchen screen, and when confirmed, order slip shall be printed for the order processing. Foster the solution provides an easy and convenient way to sell at preorder transaction from



customers. Resham Shinde, Priyanka Thakare, Neha Dhomne, Sushmita Sarkar, Design and Implementation of “Digital dining in Restaurants using Android”, International Journal of Advance Research in Computer Science and Management Studies 2014. In there was an attempt to design and implement digital dining in restaurants using Android technology. With the help of the customer's previous order history recommendations can be made so that it makes the process easier for customers to select desired food.

These digital displays provide information about various food items in the restaurant which helps customers to make quick decisions while selecting their desired food items. Using a smart menu can offer recommendations to customers based on their previous orders and make the food ordering process easier. The author's aim is to provide customers with a better and easier way to customize the menu selection process. The author explains the need for and importance of creating a user interface with customized preferences in these digital displays. Food items are added with images of the dish in these digital displays so that they attract users before placing an order. A preparation process can also be added to these smart digital menus so that customer can read the process of how it is made before he orders. the development and implementation of an electronic restaurant system that uses a wireless local area network and radio frequency identification technology. The author proposed to address the traditional methods in the restaurant system like manual food order taking, delay in time, and lack of customization in the

menu. 4 Using the RFID technology helps in tracking the table location, and availability of the table allocating the tables by providing a unique identification number for customers while reserving a table. Using this process helps in minimizing the waiting time and the manual workload is reduced. The author explains the significant importance of using this technology to improve accuracy, reduce errors, and improve efficiency. This electronic restaurant system retrieves preferences and personalization options from the customer. The feedback and previous order data are recorded to enhance and provide the customer with a better dining experience. The online payment methods and gateways help with transparency and making secure payments. Customers can also make a secure payment by using RFID technology-enabled payments in order to eliminate the need for cash transactions. The author emphasizes that by using this technology restaurants can automate the table reservation process in a very easy way.

The system also allows the customers to provide ratings and feedback on the restaurant website. In summary, the author explains the significance and importance of using the Smart Menu digital displays 6 for an interactive and user-friendly interface to attract customers by providing them with all the latest inbuilt functionalities in the system This system was the basic dynamic database utility system which touches all information from a centralized database. For this application improved the accuracy and efficiency of restaurants as well as human errors. Earlier drawbacks of automated food ordering systems were overcome by this

system and it requires a one-time investment for gadgets. Patel Krishna, Patel Palak, Raj Nirali, Patel Lalit, “Automated Food Ordering System” International Journal of Engineering Research and Development (IJERD) 2015 In Paper, the research work aims to automate the food ordering process in restaurant and also improve the dining experience of customers. Design implementation of food ordering system for restaurants were discuss in this paper order details are updated in the central database. The restaurant owner can manage the menu modifications easily

**3. SYSTEM DESIGN**

**3.1 SYSTEM ARCHITECTURE**

The system architecture is worried for the system, by creating a simple framework. In this system, it defines all the frame of the project which describes the function of the structure in detail and the main aim behind this project is to plan a proper solution for the problem identified by the file. The figure 1 shows, the framework diagram of the application. This framework diagram describe about overview of the system work. Framework diagram gave us a better understanding of how the system will work. Firstly, customer that need to scan the QR code on the table of the room with their phone. They can view the menu page as soon as they have finished scan. Secondly, the menu view and they can choose the meal they want and then click to submit an order. The order they have made will be sent to the kitchen and will be view the customer order has been received. The kitchen will prepare the customer order. Lastly, the staff will be served the meal to the customer table.

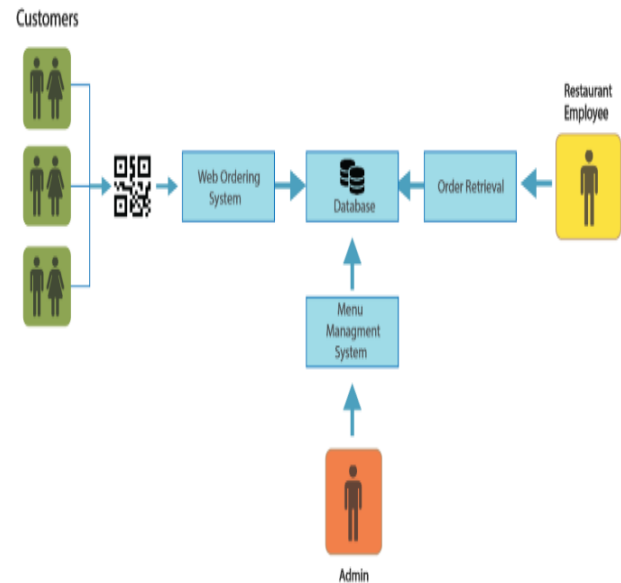


Fig 1: System Architecture

**ACTIVITY DIAGRAM**

Activity Diagrams in UML serve to visually represent dynamic workflows, showcasing the sequence and conditions of activities within a system or business process. The key components include nodes, representing actions or decisions, and transitions, illustrating the flow between these nodes. Initial and final nodes mark the activity's start and end. Control flows connect actions, specifying the order of execution, while decision nodes enable branching based on conditions. Forks and joins manage parallel flows, and swim lanes partition activities among different entities for clarity. 11 We use Activity Diagrams to illustrate the flow of control in a system and refer to the steps involved in the execution of a use case. We model sequential and concurrent activities using activity diagrams. So, we basically depict workflows visually using an activity diagram. An activity diagram focuses on condition of flow and the sequence in which it happens. We describe or depict what causes a particular event using an activity



diagram. UML models basically three types of diagrams, namely, structure diagrams, interaction diagrams, and behavior diagrams. An activity diagram is a behavioral diagram i.e. it depicts the behavior of a system. An activity diagram portrays the control flow from a start point to a finish point showing the various decision paths that exist while the activity is being executed. We can depict both sequential processing and concurrent processing of activities using an activity diagram. They are used in business and process modelling where their primary use is to depict the dynamic aspects of a system. An activity diagram is very similar to a flowchart.. We model sequential and concurrent activities using activity diagrams. So, we basically depict workflows visually using an activity diagram. An activity diagram focuses on condition of flow and the sequence in which it happens. The key components include nodes, representing actions or decisions, and transitions, illustrating the flow between these nodes. Initial and final nodes mark the activity's start and end. Control flows connect actions, specifying the order of execution, while decision nodes enable branching based on conditions So let us understand if an activity diagrams or a flowcharts.

- **Nodes:** Represent actions or decisions.
- **Transitions:** Illustrate flow between nodes.
- **Initial and Final Nodes:** Indicate activity start and end.
- **Control Flows:** Connect actions, defining execution order.

- **Decision Nodes:** Facilitate branching based on conditions.

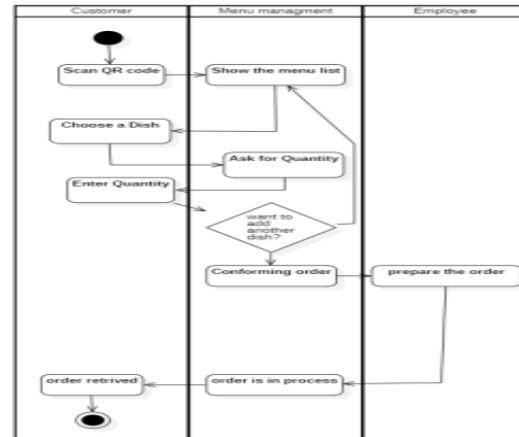


Fig 2: Represents Activity Diagram

#### 4. OUTPUT SCREENS



Fig 3 : Represents The QR Code

The customer needs to scan the QR code after entering into the restaurant to access the restaurants menu.

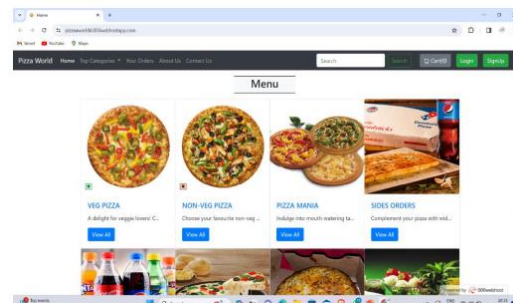


Fig 4 :Represents Initial User Interface  
After Scanning

The QR Code The output screen represents the basic initial user interface that shows menu details as well as the login and sign-up for the customer.

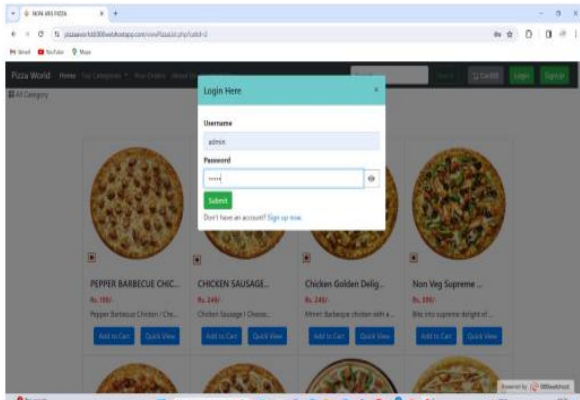


Fig 5 : Represents User Login Dialogue Box  
The output screen shows the user login to so that the customer can access the menu card restaurant.

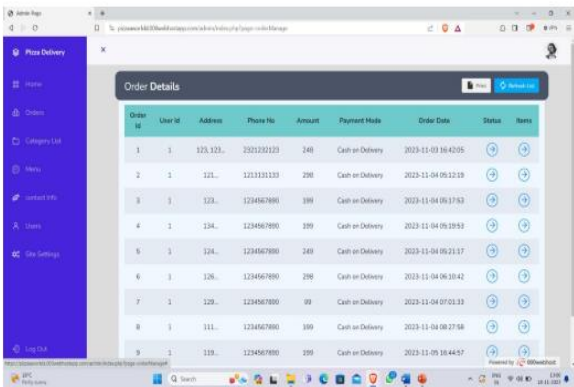


Fig 6 : Represents The Order Page.

The output screen shows the order that has been placed by the customers and the order page keeps on updating after a new order is placed.

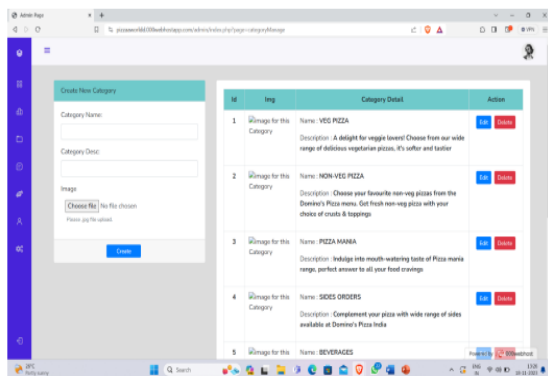


Fig 7: Represents Menu Alteration.

The output screen shows the page in which the categories and items in the menu can be

altered that is the items can be added and deleted as per the demand of the item and also can vary the price of the items.

## 5. CONCLUSION

The proposed system represents a pivotal leap towards transforming restaurant operations, placing a significant emphasis on harnessing the power of data analytics to drive unprecedented efficiency and informed decision-making. By seamlessly integrating QR code ordering and process automation, this innovative solution stands to revolutionize the restaurant industry's landscape. The inherent challenges of traditional ordering systems, like human errors and the cumbersome task of updating menus, are elegantly addressed through this advanced approach. At the heart of the proposed system lies its remarkable ability to harness data analytics as a driving force. Beyond the surface-level benefits, data analytics emerges as a central component that elevates restaurant management to a new echelon of insights and strategic precision. Through rigorous usability testing with restaurant proprietors, it becomes unmistakably evident that the proposed system delivers on its promise to amplify not only operational efficacy but also the intellectual prowess behind key decisions.

## 6. FUTURE ENHANCEMENTS

A user-friendly interface makes it easier for customers to look for food items, customize their orders, and proceed to the ordering process seamlessly. A well-organized interface contributes to overall customer satisfaction. QR code scanning in the application simplifies the process of accessing menus and payments. It is a convenient and efficient way to interact with



customers with the interface. Real-time order tracking and notifications add convenience to the dining experience. Customers can stay updated on the progress of their orders from delivery to pick-up. These notifications provide valuable information; we can keep updates on orders and interact throughout the process. These enhancements like improving the app interface, real-time order tracking, and notifications will help the customers in providing a better dining experience. Based on customer feedback and updating with the latest items.

## 7. REFERENCES

1. K. Khairunnisa, A. Johari, M. Wahab, M. Erdi, M. Ayob, and A. Ayob, "The Application of Wireless Food Ordering System," *MASAUM Journal of Computing*, vol. 1, pp. 178-184, 2009
2. D. Sharma, "A Review of QR code Structure for Encryption and Decryption Process," *International Journal of Innovative Science and Research Technology*, vol. 2, no. 2, pp. 13-18, 2017. 3.
3. J. Qianyu, "Exploring the Concept of QR Code and the Benefits of Using QR Code for Companies," Bachelor's Thesis, School of Business and Culture, Lapland University of Applied Sciences, Rovaniemi, Finland, 2014 [online] Available: <https://www.theseus.fi/bitstream/handle/10024/85796/JI%20QIANYUFINAL%20THESIS.pdf?sequence=1>.
4. M. Sadiku, T. J. Ashaolu, A. Ajayi-Majebi, and S. Musa, "Big Data in Food Industry," *International Journal of Scientific Advances*, vol. 3, issue 3, pp. 148 – 152, 2020
5. H. Smaya, "The Influence of Big Data Analytics in the Industry," *Open Access Library Journal*, vol. 9, pp. 1-12, 2022. doi: 10.4236/oalib.1108383
6. P. L. Bokonda, K. Ouazzani-Touhami and N. Souissi, "Predictive analysis using machine learning: Review of trends and methods," 2020 International Symposium on Advanced Electrical and Communication Technologies (ISAECT), Marrakech, Morocco, 2020, pp. 1-6, doi: 10.1109/ISAECT50560.2020.9523703.
7. Yhofoodie, Yhofoodie – About Us, 2018, [online] Available: [http://yhofoodie.com/content/details\\_4\\_13.html](http://yhofoodie.com/content/details_4_13.html).
8. S. Kelly, Sakae Sushi First iPad Ordering System in Malaysia, 2019, [online] Available: <https://www.sunshinekelly.com/2011/10/sakae-sushi-first-ipad-orderingsystem.html>.
9. MA Venture Marketing, My QR Menu – About Us, 2021, [online] Available: <https://qrmenu.my/>