



## QR CODE DINING DELIGHT

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### Abstract

In today's digital world, Quick Response (QR) code has become essential part of numerous businesses. QR Code Dining Delight examines the transformative role of QR code technology in modern restaurants. This research investigates its multifaceted impact on customer engagement, menu accessibility, and operational efficiency. By seamlessly integrating QR codes into dining experiences, restaurants enhance convenience, personalize service, and streamline operations. QR codes empower patrons to access menus instantly, place orders efficiently, and engage with restaurant offerings in innovative ways. Embracing digital innovation, this paper underscores the profound implications of QR code adoption for the hospitality industry, illustrating how these dynamic tools are reshaping the landscape of dining, promising a future of enhanced customer experiences and operational optimization.

**Keywords:** QR Code, Dining, Scan, Order, Payment

### I. Introduction

In the quickly changing world of modern cuisine, where speed, safety, and convenience are critical, the classic dining experience is changing dramatically. A QR code, known as a quick-response code, belongs to the category of two-dimensional matrix barcodes. The revolutionary invention known as QR Code Dining Delight is about to completely change the way we interact with restaurants and food establishments. The fusion of technology and cuisine is embodied in QR Code Dining Delight, which provides a seamless, frictionless, and immersive dining experience unmatched by anything else [1][2]. The days of waiting impatiently for a server to take your order or thumbing through tattered menus are long gone. With only a quick scan of their cellphones, diners can access an array of gastronomic delights with QR Code Dining Delight. Imagine walking into your favourite restaurant and being greeted not by a paper menu but rather by a stylish QR code that is either tastefully placed at the entryway or artfully displayed on the table. The menu unfolds before your eyes, replete with mouthwatering descriptions, vibrant photographs, and even nutritional information – all at your fingertips – with a quick scan using the camera on your smartphone [2][3][4].

However, there is much more to QR Code Dining Delight than just menu accessibility. It's a comprehensive method of dining that smoothly incorporates all elements of the culinary experience, from placing an order to making a payment. After making your selections, all it takes is a few touches on your screen to send your order straight to the kitchen, avoiding the need for traditional order-taking procedures and speeding up the entire process. When it comes time to pay the bill, you can easily settle it without bothering a server or searching for cash by just scanning the QR code that is conveniently located on your receipt. This allows you to make a safe and hassle-free payment right from your smartphone [5][6][7].

Not only is QR Code Dining Delight technologically advanced, but it also has a significant influence on the whole dining experience, which is what makes it unique. A level of safety and hygiene that is more important than ever is provided by QR Code Dining Delight by doing away with printed menus and reducing in-person encounters [2][8][9].



## II. Literature Review

Research in the area of QR code-based dining has gained significant attention to attract the customers at the restaurants. We reviewed different QR code-based dining systems as summarized below:

**Enhanced customer dining experience:** Customer finds QR technology as a quick, prompt and efficient source to seek information. For a restaurant business which tends to be busy during peak hours, the services which do not really need restaurant personnel intervention at times, can be easily done with the help of QR Code & Geo fencing. The customer also finds it convenient to use this technology with the increased usage of smart phones [4].

**Dining system:** The QR code dining system represents a significant shift in the way restaurants interact with customers. It offers benefits, such as enhanced safety through contactless ordering and payments, menu flexibility, and cost savings on printed menus. Some customers may struggle with the technology, and accessibility issues. It was found that average service time is reduced to 8.58 min from 21.73 min which has vast difference of 87% [5].

**QR code menus:** This case study focuses on the emergence of QR code menus as a popular and sustainable solution for the hospitality industry, particularly in response to the challenges posed by the COVID-19 pandemic. It examines how QR code menus can be environmentally beneficial within the restaurant industry by reducing paper waste, lowering the carbon footprint, and encouraging sustainable practices [1][2][6].

**QR code-based menu application:** The QR code-based mobile application requires a mobile phone and internet access for usage. They can be built using React.js, Java, MongoDB and so on. Each restaurant table has a unique QR code for users to scan and place food orders via the app. While traditional dining has its charm, the demands of modernity and evolving circumstances necessitate a shift towards technology-driven restaurant systems. With smartphones ubiquitous and technology advancing rapidly, enhancing the customer and staff experience through innovative apps is crucial. The implementation strategies, framework and role for QR based dining systems are suggested to provide better user experiences and benefit to businesses [7][8][9].

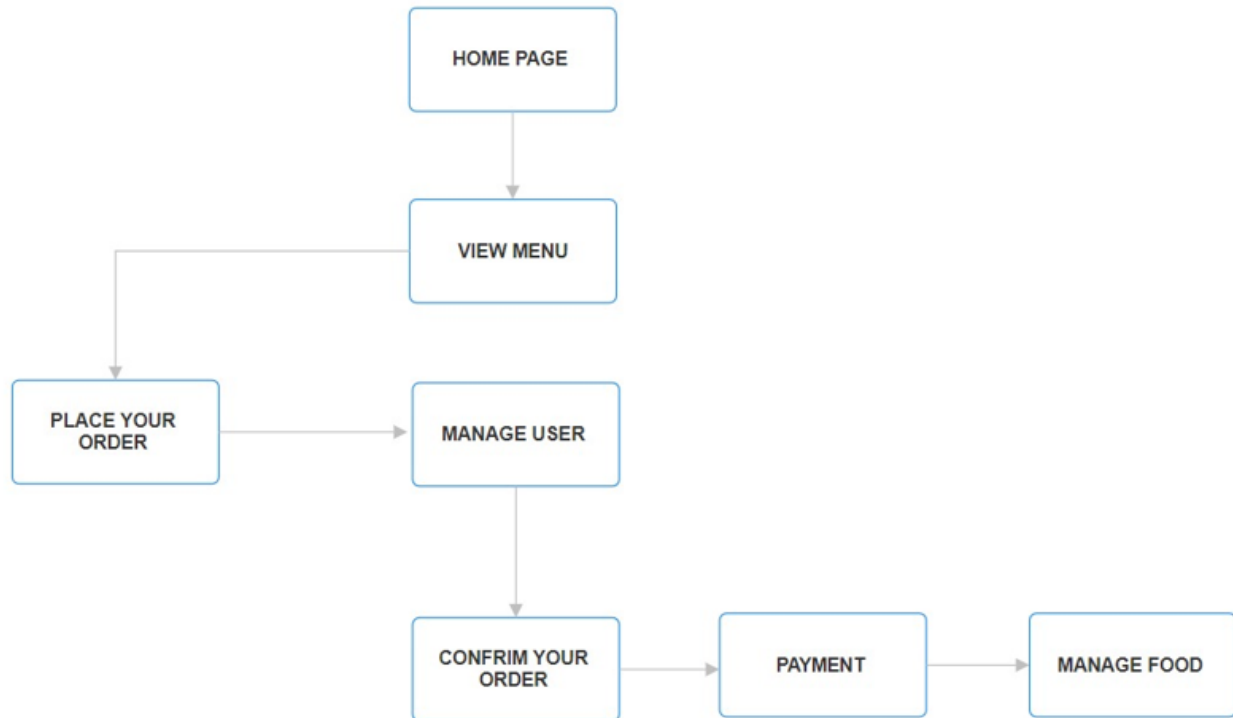
Thus, the various dining systems utilizing QR code suggested by eminent researchers are important for effective customer services in restaurants,

## III. Methodology

The current system still uses the manual method of recording orders from customers on paper menus, which requires servers to handwrite down the information. The administrative staff will write each order on a paper sheet before sending it to the kitchen. Because it involves a lot of human labour, the traditional ordering system is inconvenient for both staff and customers. Human mistake can occur due to manual labour performed by staff members. For example, there is a high risk of paper loss and misinterpretation of order handwriting by the kitchen workers. It might occasionally be challenging to read staff members' handwriting when they write quickly. The customers' discontent with the cafeteria will result from all these human faults, and it gives bad experience. As a result, customers who are dissatisfied with the cafeteria's services will constantly complain about getting the wrong order or not getting their food for a very lengthy period. In addition, paper sheets are easily misplaced. Furthermore, because they have to walk to the café to place an order, write it down by hand, and then wait for it to be submitted, the manual approach is a waste of time and energy. The customer is unaware of when the dish is being prepared. With this ordering technique, the client will be happier. One issue that cafeterias with traditional food ordering systems encounter is the challenge of updating their menus. Once printed, a paper menu cannot be altered. The new menu and the pricing on the paper menu are difficult for the management to update. They must reprint if they wish to alter the menu. Paper waste and costs will rise with this outdated technique. Additionally, the cafeteria's paper menu will occasionally become damaged.

In light of those issues, it is possible to prevent them from occurring by putting in place a computerized and effective ordering system. Therefore, we suggested creating a QR code-based cafeteria meal

ordering system to address the issues and shorten wait times. The suggested technique can increase cafe production and boost customer happiness. By establishing a straightforward structure, the system architecture looks out for the system. The primary goal of the research is to develop a suitable solution for better user experiences. First, guests must use their phones to scan the QR code on the room's table. As soon as the scan is complete, they can view the menu page. The second option is the menu display, where customers can select the dish of their choice and click to place an order. The kitchen will get the order they placed and regard it as having been received by the customer. The customer's order will be prepared in the kitchen. The dinner will then be presented to the personnel at the client table. The figure 1 represents the block diagram for QR code-based dining system.



**Figure 1: QR Code Dining System**

The QR code dining system consists of the following important components as depicted in figure 1.

**1) Home Page:** This page provides the information & how one can indulge in a revolutionary dining experience with QR Code Dining Delight. It suggests saying goodbye to traditional paper menus and manual order-taking – and hello to seamless, contactless dining at your fingertips. Users need to scan the QR code at your table to access our digital menu, brimming with delectable dishes crafted with the finest ingredients. From tantalizing appetizers to mouthwatering mains and decadent desserts, our menu offers something for every palate.

**2) View Menu:** This stage might be thought of as an extension of the previous one. In response to the customer's request, the admin menu will now be available to them. Consequently, the customer can see the menu and proceeds to the next stage.

**3) List Order:** In this stage, the customer's food is ordered from the menu that was displayed in front of customer based on his/her needs. The admin department will get this order.

**4) Order confirmation:** This stage can be thought of as the confirmation answer at this point including the customer's menu order.

**5) Payment:** This stage can be thought of as response, where the customer will be paying the bill.

**6) Manage User:** The administrator can now control the user's information.

**7) Manage Food:** This one is the final phase. The administrator can now update the order status and food specifics for the food that is currently being prepared in the kitchen.

The next section discusses the details about the implementation of QR code dining delight,

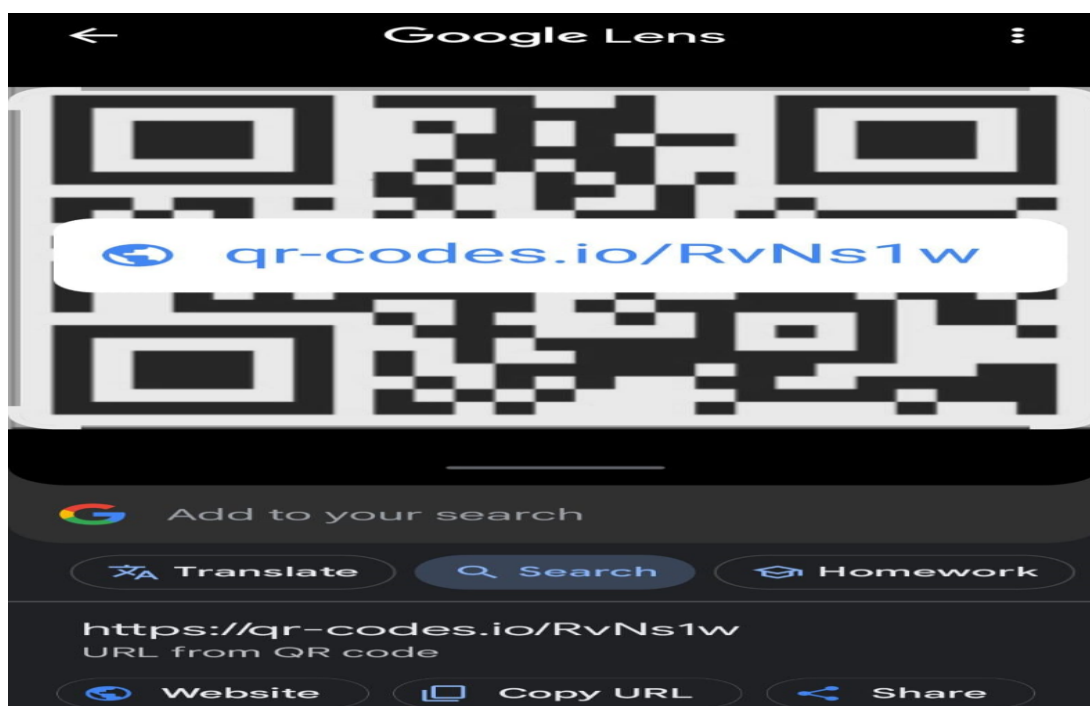
#### IV. Implementation and Discussion

The implementation of QR code dining was carried out using PHP, CSS3, JavaScript, and HTML5. Users can experience the QR Code Dining Delight by scanning the created visual of QR code as shown in figure 2.



**Figure 2: QR code for scanning**

Users can scan the QR code from their mobile phone using Google Lens or scanner and they will be able to enter the website. While scanning the QR code, phone screen may look like as represented in figure 3.



**Figure 3: Image while scanning the code through Google Lens**

As user enters website using the QR code, they will be able to see the home page as shown in figure 4.

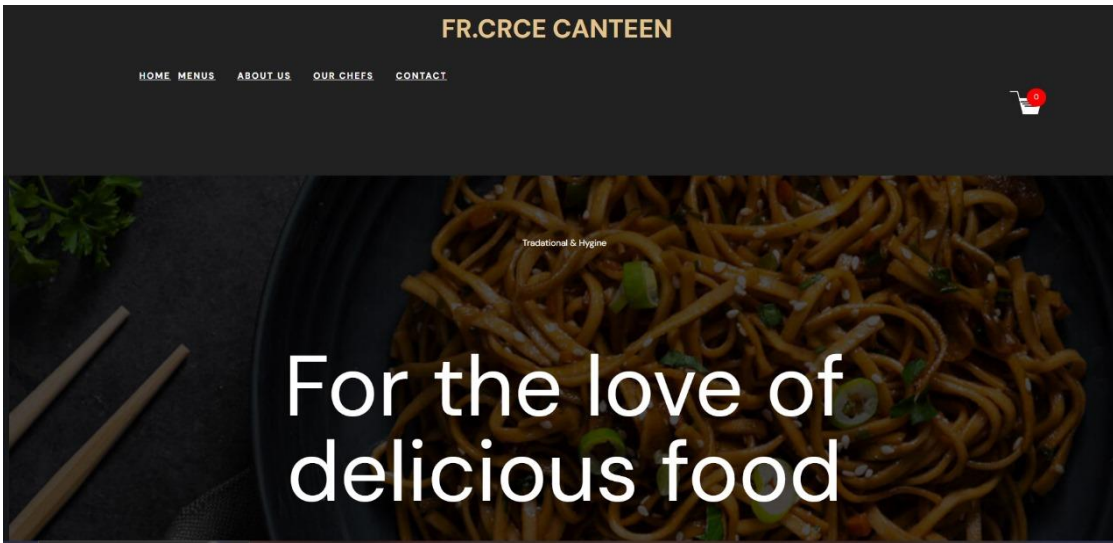


Figure 4: Home page

Now by scrolling down the page, the users can see the menu listed as indicated in figure 5.

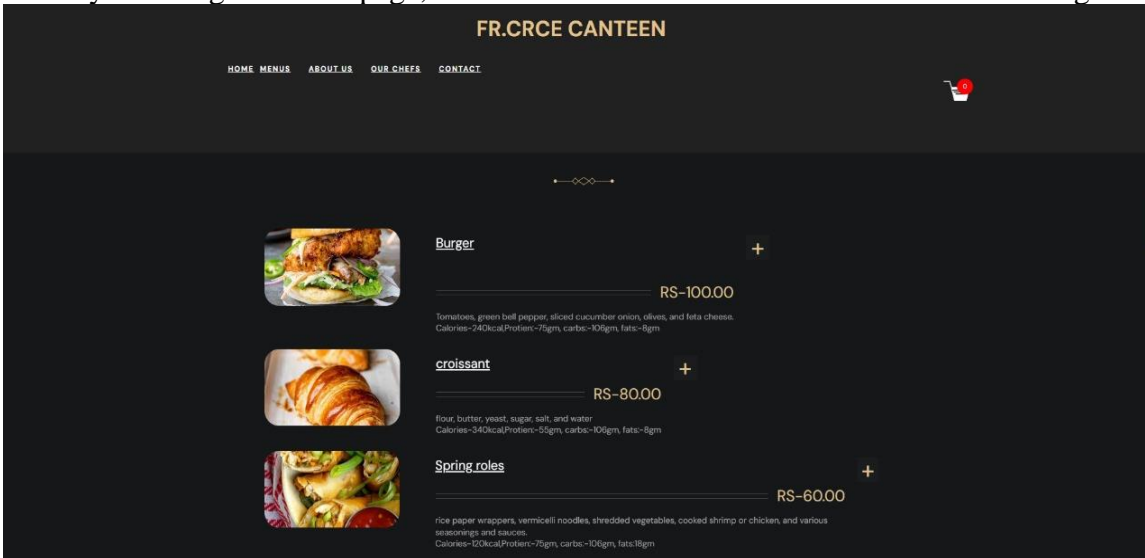


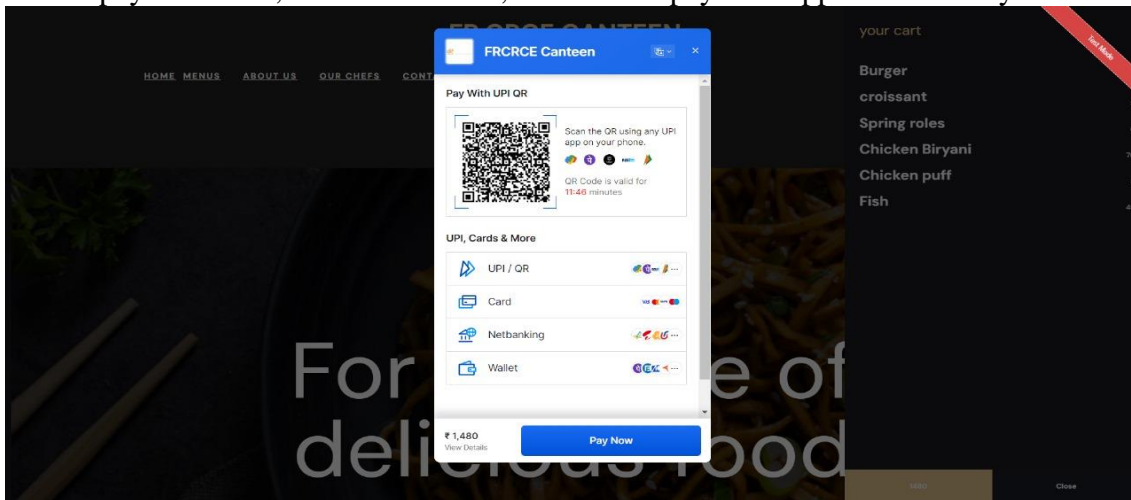
Figure 5: Menu Card

After seeing the food items in the menu card, users can add them in the wish list. This represents the add to Menu Cart as mentioned in figure 6.



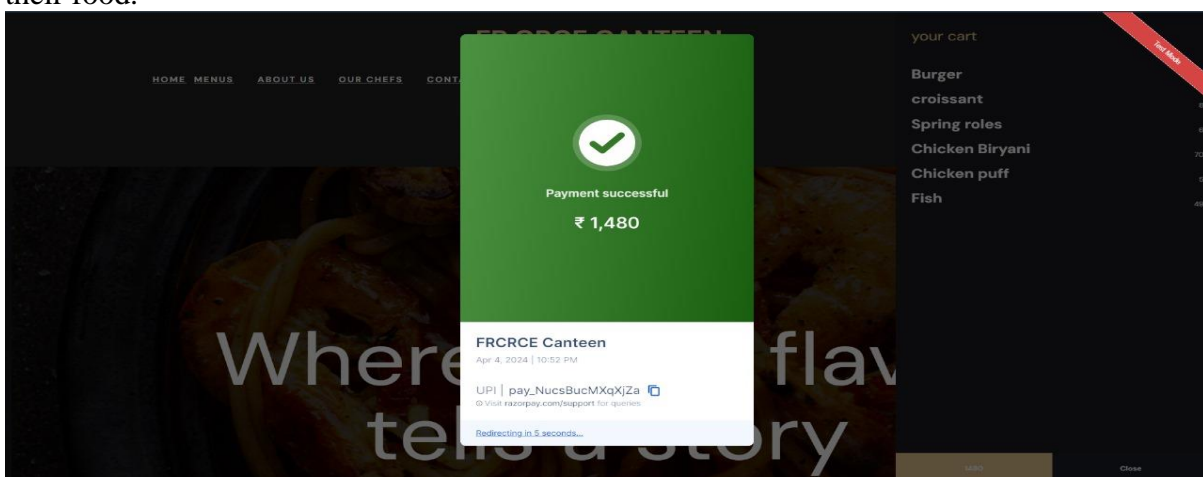
Figure 6: Add to Menu Cart

Once user have reviewed their order, they can proceed to checkout. At this point, users will need to select your preferred payment method. Depending on the restaurant payment services, user may be able to pay with cash, credit/debit card, or a mobile payment app such as GPay as shown in figure 7.



**Figure 7: Payment gateway**

As depicted in figure 8, after user have selected their preferred payment method, they can confirm their payment made and submit their order. The canteen will receive customer order and begin preparing their food.



**Figure 8: Payment successful**

## V. Conclusion

To sum up, QR Code Dining Delight signifies a fundamental change in the way we view eating. Through the smooth integration of QR code technology into every facet of the eating experience, we have revolutionized traditional dining into a contemporary, contactless experience. Our guests can easily explore our culinary selections, place orders with ease, and monitor their meals in real-time thanks to our digital menus, which are accessible by scanning a QR code. The days of battling with antiquated paper menus and waiting for handwritten orders are long gone. Every table benefits from the efficiency, simplicity, and innovation that QR Code Dining Delight offers.

Furthermore, our dedication to client happiness goes beyond the actual dining experience. Our continuous improvement initiatives, loyalty programme, and feedback system are all part of our efforts to consistently meet and beyond the expectations of our customers. Looking ahead, QR Code Dining Delight is committed to continuing to push the envelope in dining innovation. We'll keep using technology, listening to what our patrons have to say, and improving our procedures to make sure that every meal with us is absolutely lovely. Come along on this gastronomic adventure with us as we reinvent dining, one QR code at a time. We



are grateful that you will select QR Code Dining Delight, where each scan opens a world of deliciousness.

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