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QR CODE BASED FOOD ORDERING SYSTEM

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ABSTRACT

The QR Code Food Ordering System represents a technological advancement in the food service industry, designed to improve efficiency, accuracy, and customer satisfaction. Leveraging QR code technology, this system revolutionizes the traditional food ordering process, offering numerous benefits for both customers and businesses. At its core, the QR Code Food Ordering System provides a contactless and convenient way for customers to order food. By simply scanning a QR code displayed at tables or counters using their smartphones, customers can access digital menus, browse through a variety of options, customize their orders, and make payments seamlessly. This eliminates the need for physical menus, reduces wait times, and enhances safety by minimizing contact between staff and customers. One of the key advantages of this system is its customization capabilities. Customers can easily modify their orders based on their preferences, dietary restrictions, or special requests, ensuring a personalized dining experience. This level of flexibility not only improves customer satisfaction but also reduces errors in order taking and preparation, leading to higher efficiency in the kitchen. For businesses, the QR Code Food Ordering System offers a range of features that streamline .operations and drive business growth.

Real-time order management allows restaurant staff to track incoming orders, prioritize tasks, and ensure timely delivery. Inventory tracking features help monitor stock levels, manage ingredient availability, and prevent stockouts or wastage. Moreover, the system provides valuable insights into customer behaviour and preferences through data analytics. By analysing order trends, popular menu items, peak hours, and customer feedback, businesses can make data-driven decisions to optimize menu offerings, pricing strategies, and marketing campaigns. This information empowers businesses to enhance customer satisfaction, improve operational efficiency, and drive revenue growth.

Keywords: food ordering system, QR code, Django framework, desktop application

1. INTODUCTION

One of the life human pleasures and pride is eating. In this era, everything has changed a lot when talking about food habits and taste for every household. There are a lot of trading activities that growing up right now such as restaurants, hotels and services. Everyone have their own goals and vision to build up their brand towards the market and the customers. For a restaurant, service quality and customer satisfaction are important for keeping their business at a stable level in the market.

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Restaurant is a place for people to eat or buy a foods and beverages. Restaurant serve a lot of variations of foods. People who is always busy with their life especially the career person will choose to eat at the restaurant rather than cook by themselves. If they cook the food by themselves, it will waste their time and make them feel exhausted. Sometimes, the people go to restaurant just want to chill and relaxing while enjoy their beverage. In term of restaurants, the management of restaurants are known as service provider while the customers are known as service receivers. Customers are regard as the pillar for each restaurant because without customers the function of a restaurant is useless.

Therefore, this project proposes a Food Ordering System Using QR Code (FOSuQC) to address the stated problem. This application will be use a mobile application for the customers and web application for the staff of the restaurant. The customers need to use their phone with the application that has been installed to scan the QR code from the menu. Then, the customers must submit the order to make a confirmation and it will directly send to the kitchen. The staff at the restaurant can manage the menu such add a new items, delete the items of the food or update the menu easily. By using this system, the staff of the restaurant can make a change of the menu easily. Besides, the ordered menu list also will be view in this system. The staff will prepared the food based on the ordered menu that will be listed out on the screen.

2. PROBLEM STATEMENT

Waiter is the middle person between the customer and the department kitchen Staff. Waiter tends to make human error such as miscommunication with customers. Because of this miscommunication, it will affect the process of preparing the food. In this case, the customer feel unsatisfied if the ordered food are not same with the food that served to their. Secondly, sometimes the customer need to face with the problem that need to wait It took quite a long time for the waiter to come and take the order. This problem will give negative effect for the restaurant because maybe that is the last time for customer to come to that restaurant. This problem can be solved with this system because the customer can taking the order by themselves without needing to wait for the waiter anymore. Lastly, usually the restaurant used to take order by using the paper and the paper will be passed to the kitchen department. This may cause misplaced of the ordered paper and the waiter needs to take a new order again from the customers. This problem will be solved if have the application that the kitchen can view the ordered menu in the systematic way without using any paper.

3. METHODOLOGY

The methodology for implementing the QR Code Food Ordering System begins with a comprehensive needs assessment to understand project requirements and stakeholder expectations. This involves gathering input from restaurant owners, managers, staff, and customers to identify key features, budget constraints, and timelines. After the needs assessment, the appropriate technology stack is selected, including QR code generation libraries, mobile app frameworks, backend databases, and payment gateways. The system design phase follows, where a detailed blueprint is created, outlining the architecture, functionalities, and user interfaces of the QR Code Food Ordering System. Development involves coding frontend interfaces, backend logic, database integration, QR code generation algorithms, and order processing workflows. Rigorous testing ensues to ensure functionality, security, and usability across different

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devices and platforms. Once testing is successful, deployment to production environments occurs, including server setup, database configuration, and app deployment. Training and onboarding sessions are conducted for restaurant staff, followed by strategic launch and marketing efforts to drive adoption. Ongoing monitoring, maintenance, and support are provided post-launch to ensure system performance, security, and user satisfaction, contributing to the long-term success of the QR Code Food Ordering System in the food service industry.

4. REQUIREMENT ANALYSIS

The project involved analysing the design of a few applications so as to make the application more user-friendly. To do so, it was really important to keep the navigation from one screen to the other well ordered and at the same time reduce the amount of typing the user needs to do. In order to make the application more accessible, the browser version had to be chosen so that it is compatible with most of the Browsers.

4.1. HARDWARE REQUIREMENTS:

• System : Pentium IV 2.4 GHz.

• Hard Disk : 40 GB.

• Monitor : 15 inch VGA Colour.

• Mouse : Logitech Mouse.

• Ram : 512 MB

• Keyboard : Standard Keyboard 3.2.

4.2. SOFTWARE REQUIREMENTS:

• Operating System : Windows XP.

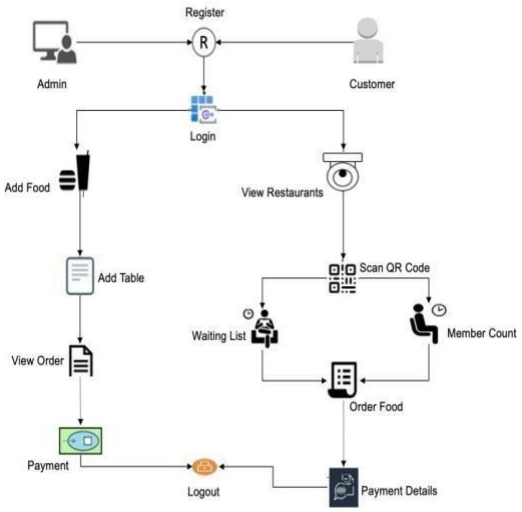
• Platform : PYTHON TECHNOLOGY

• Tool : Spyder, Python 3.5

• Front End : Anaconda

• Back End : python anaconda script

5. SYSTEM ARCHITECTURE



FIGUARE 1. SYSTEM ARCHITECTURE

The design of this proposed contactless food ordering system involves websites to order food. Customers can access the menu to order food. They can customize orders and make secure payments. The generated QR code should be scanned to view and access the food menu. System Architecture The architecture in this proposed contactless food ordering system supports both customer and restaurant admin. This architecture is built with many features and functionalities that help the restaurant admin and staff to quickly access the orders. This system is developed in a user-friendly way so that customers can have a better experience in using this interface. Customers can make reservations online or on the phone to reserve a table in advance. The admin should sign up and then log in to his account to view customer orders and payments. Customers can sign up and sign into their

account, they can view restaurants by scanning the QR code, entering the member count and ordering food, making payments, and logging out. If the restaurant is full, he will be added to the waiting list for a time frame until he gets a reservation. The system architecture based on which our QR code food ordering system has been built supports both admins as well as the customer.

6. CONCLUSION

The QR Code Food Ordering System has ushered in a new era of efficiency and convenience in the food service industry, offering a seamless and contactless experience for customers while optimizing operations for businesses. Its integration of QR code technology streamlines the ordering process, allowing customers to access digital menus, customize orders, and complete transactions with ease using their smartphones. This not only enhances convenience but also prioritizes safety by reducing physical contact, a crucial aspect in today's health conscious environment. Moreover, the system's ability to personalize recommendations based on customer preferences and past orders adds a layer of customization that fosters customer satisfaction and loyalty. From a business perspective, the real-time analytics provided by the system offer valuable insights into customer behavior, allowing for data-driven decision-making in areas such as menu optimization, pricing strategies, and inventory management. Looking towards the future, several enhancements can further elevate the capabilities and impact of the QR Code Food Ordering System. Augmented Reality (AR) features can provide customers with immersive menu experiences, while voice-activated ordering options enhance accessibility. Blockchain integration can enhance supply chain transparency, gamification and loyalty programs can incentivize repeat business, and predictive analytics can optimize demand forecasting. These advancements, coupled with seamless integration with loyalty and payment platforms, ensure that the system remains at the forefront of innovation, delivering exceptional experiences for customers and driving growth and profitability for businesses in the ever-evolving food service landscape.

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