**Major Project Synopsis**

***on***

**SMART RESTAURANT MANAGEMENT SYSTEM**

***In partial fulfillment of requirements for the degree***

***of***

**BACHELOR OF TECHNOLOGY**

**IN**

**COMPUTER SCIENCE & ENGINEERING**

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**Abstract**

Smart RMS is a web-based system designed to take food orders using QR (Quick Response) code scanning at Restaurants and Home Delivery. In Restaurants there are number of tables and need more staff members to manage the orders. But due to current scenario social distancing is the good way to avoid the contact so that QR technology has become a natural choice as a contactless solution in the battle against COVID-19. QR codes minimize physical interaction. Using only your smartphones, you can scan the QR code and access the food menu digitally, allowing their customers to order online without touching the menu that goes through multiple hand exchanges. QR-based ordering system is fast, convenient, and delivers accurate orders for customers

1. **INTRODUCTION**

The problem with the traditional system was the misleading of the table from where the order has been placed. Also, the customer has to wait for the waiter to come so as to place order. This can be problematic in big hotels where there are quite a large no. of tables. Also, in the traditional system of chits and tokens, there are chances of orders getting exchanged sometimes mistakenly.

Smart RMS will have a QR code scanning system where each table will have a unique QR code which when scanned by the customer registers the order for the respective table no.

A QR code is an optical label that can be decode by a smartphone’s camera. When a user’s smartphone scans the QR code, it unpacks the data it contains and can point the smartphone to a website or an application.

2. **PROBLEM DOMAIN**

Food is a large – and growing – industry. As a result of changing technology, consumer preferences, globalization and demographics, the industry is evolving. Concepts such as seating patrons at their own tables, providing dining at unspecified hours, and a menu from which diners could choose their own dishes came out and became an established part of “restaurant” service. People developed a taste restaurant quality food for it and since then the people’s love for restaurant never ceased to grow. The food ecosystem is becoming more complex and more interdependent. This is driven by consumers, whose spending on food, and food decisions, are shifting. One-third of consumers are now using a restaurant or meal delivery service.

The cases of COV-ID 19 only continue to increase and showing no signs of abating anytime soon. Printed Menus create more chances for the guests to get affected by this due to physical contact. The problem with the traditional system lies in the mis-ordering of the ordered food. Also, in chits and token system, there are chances of orders getting exchanged sometimes mistakenly. The guest has to stand in queues for long time or wait for the waiter to come and take order. This can be problematic in big hotels where there are quite a large number of customers and tables. Presently, although there are a lot of Home Delivery Apps, considerably less Apps for Dine-in at restaurants are there. Considering today’s need for contactless, cashless and digitized system, the Smart Restaurant Management System can be “a new normal in the restaurants”.

1. **SOLUTION DOMAIN**

Our System provides a web application accessed by restaurants customers scanning the code on the table where they can check the menu and order AND a mobile application for restaurant owners to see the status and orders of each table and customize on their menu at any time. QR codes are generated through a QR code generator online. This advanced technology gives a digital dimension to everything wherever it may be attached to. For example, you can generate a QR code embedded with a menu list and place it on your table menu. Customers can scan the QR code using their smartphones and place their orders. This helps restaurant owners present their food items in a digital form without touching anything! Now- that is just the surface of the information; you can use QR codes in so many ways for your restaurants to minimize human contact!

In the proposed model, in addition to viewing the menu and ordering, the system calculates the prices and sends the bill to the customer’s smartphone along with the connection link to the bank portal so that the customer can pay the bill electronically. However, the time between ordering and delivering is very important in terms of management.

Even if restaurants and dining rooms have reopened, general caution will remain and guests will still continue to practice social distancing. According to Datassential, 86% of consumers want to maintain distance from other diners,  suggesting that curtailing human interactions will still be preferable for the majority. And using QR codes is a tool to lessen that interaction and maintain the distance.

QR codes minimize physical interaction. Using only your smartphones, you can scan the QR code and access the food menu digitally, allowing their customers to order online without touching the menu that goes through multiple hand exchanges. QR-based ordering system is fast, convenient, and delivers accurate orders for customers.

Benefits:

* Eliminate Ordering Mistakes
* Eliminate Having to Wait in Queues
* Reduce Operations Cost for Restaurant Staff
* Save Money Printing Up Disposable Menus
* Contactless Payment in Restaurants Promoting Digital Transaction

4. **SYSTEM DOMAIN**

**4.1 User Interface**

* Platform – Desktop or Mobile browser
* Display –
* Desktop display: 1024x768 or higher, 1366x768 recommended
* Mobile display: 720x1280 recommended
* Camera Device

These are the basic UI requirements and nowadays almost every system and user have. So, there is not much of a problem for any user.

**4.2 Hardware Interface**

* Processor – i3/i5/i7 x64 Bit Minimum 2 GHz.
* Hard Disk – 1 TB
* Memory – 2 GB RAM minimum, 4 GB RAM recommended
* High Speed Internet Access

Again, these requirements are basic ones but LAN connectivity should be there for better user experience.

**4.3 Software Interface**

* **Linux / Windows OS**
* **Visual Studio Code-** code editor with support for development operations
* **Postman-** to test an API's functionality
* **MongoDB-**  to implement a data store
* **ExpressJS-** framework used for developing Node js applications
* **ReactJS-** Front end Javascript library
* **NodeJS-** for back-end API services

5. **APPLICATION DOMAIN**

The project simulates a model that is not commonly used, but as per the current conditions we have to upgrade ourselves. By using different technologies together this model is to maintain all regulations, to be safe and to do our daily works too.

Due to COVID pandemic, food industry is one of the industries facing a lot of loss, and an upgrade in system is needed. By using QR code for different purpose we introduce a contactless system for restaurants. With help of QR we can develop a quick, modern and contactless system. By digitalising menus, billing process and order process a reliable, safe and simple system can be developed for betterment of restaurants and also for the safety of customers too.

6. **EXPECTED OUTCOME**

* A contactless system.
* Secure and digitalised environment.
* Quick menus and proper organisation at restaurants.
* Fast and secure payments.

7. **REFERENCES**

**Links referred-**

* https://www.bonee.net/
* https://restaurants.chope.co/blog/how-your-restaurant-can-make-the-best-use-of-qr-codes/
* https://feedsportal.com/how-restaurants-can-bounce-back-in-the-post-covid-world-using-qr-codes/?\_\_cf\_chl\_jschl\_tk\_\_=4efcf8f14ba94c118ae22fb7cecaba73514f0550-1600341880-0-ATzoIxbhr9RPMCVn4XNOo\_QoEqhHh1OwI2xJVrVASzxdE1BwORd\_kY1fJPcYZKVwpGJ-lE4s8G2Ndpq8\_4W0iLxl3VBD2lEa4OlD6dIecnZhmhqNcNrzFuf-supm8HCSp34s7zZty5CC7CvpuJTmY3UuH5Zf8t\_0DCIIakq\_SVDjRqCIx73-15r1bXF5UCB7e\_Aei1L787gKjk4kzuPebrwqTVZIINQ6zFrrCn4VbITgCvIYHXPC4SZJ1q54-P2DCdNoLePXBckYs-DThV3RhDVqpGIY39SlNn8di2\_oMTAVVUioN\_ak4yLh4zhswplO-ZqhFxeH3WPPmHOSPiF2mee2PtMwCf63j7FKDwbSupaZthM-vdwRmoBNJC73ar5RyQs://www.technoarete.org/common\_abstract/pdf/IJERCSE/v5/i5/Ext\_34756.pdf
* https://www.mydigimenu.com/qr-ordering
* https://menulingua.com/
* https://apps.odoo.com/apps/modules/12.0/qrcode\_table/
* https://www2.deloitte.com/content/dam/Deloitte/au/Documents/Economics/deloitte-au-economics-future-food-uber-eats-100719.pdf