UNIVERSITY OF MUMBAI

Title – Quick Resto Services

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UNDER THE GUIDANCE OF

Major Project Guide:

PRANITA PADHYE

VIT | Vidyalankar Institute of Technology
Accredited A+ by NAAC

DEPARTMENT OF ELECTRONICS ENGINEERING

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CERTIFICATE OF APPROVAL
For
Major Project 1-A

This is to certify that

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Have successfully carried out Mini Project work entitled

Quick Resto Services

in
Department of Electronics

As laid down by University of Mumbai during the academic year 2022-23

Under the Guidance of

Major Project Guide:

PRANITA PADHYE

Signature of Guide

Abstract

The quick service (aka, fast food) restaurant industry is significant and growing aspect of the overall restaurant industry. For long-term success quick service restaurants must be perceived as offering sufficient value for consumers. To do this, restaurants must first determine what consumers' value in a quick service restaurant experience. As such, this research study explores consumers' service quality preferences in the quick service restaurant industry.

Quick service restaurants have much variety when it comes to the type of service they offer. There are also drive-through restaurants, which do not offer any tables or seats but rather collect the order and deliver it through a single counter. The orders are generally pre prepared and are highly standardized with no room for customization. These types of businesses don't rely on margin over their services rather rely on the frequency of footfall. A key strategy used by quick service restaurants is the bundle pricing. QSR combine their food items on the menu into a bundle of complementary meals for example McDonald's value meal of fries, a soft drink and a burger. Usually customers prefer these meals over individual food items as the former creates a sense of value addition and diversity to their expenditure. For the retailers, they give attractive discounts over bundled meals and set a substantial profit margin to lure from these offerings.

The biggest asset in any organization is its employees. Your employees are the face of your restaurant and it is no different for a quick-service restaurant. But staff in a QSR bears more responsibility than the staff in an ordinary restaurant. This is so because in a QSR, there are a multitude of things happening simultaneously and while there is no wait staff, there is also usually no difference between kitchen staff and counter staff. The process of training the staff is different in a QSR as compared to the other restaurant formats. Here comes the fact that there is no actual cooking that happens in a QSR kitchen, only assembling and or the final level preparation of food.

Acknowledgments

I would like to express my special thanks of gratitude to our teacher **Prof. Pranita Padhye** who gave us the golden opportunity to do this wonderful project on the topic "**Quick Resto Services**", which also helped me in doing a lot of Research. It is through his proficient knowledge, valuable guidance and support that this project report has been set right, I am really thankful to him. I take this opportunity to express our deep sense of gratitude towards all those who have helped us in various ways for preparing the project.

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1. Introduction & Motivation

1.1 Theory behind the project concept

Quick service restaurants generally function in a chains or franchises as they gain profit from the number of footfalls they receive. Operating multiple stores enables them to harness the footfall frequency from multiple locations and add to the company's value. These restaurants often cater to complementary food items or just a single class of food stuff for example Starbucks. Starbucks offers beverage services along with light snacks which complements its taste. Similarly Pizza hut and Domino's offer fast foods combined with light beverages. High degree of standardization is required at a QSR to deliver quick services to the customers that includes

- **Self service restaurants**

In this type of QSR, the customers approach the ordering counter for both placing the order as well as collecting the order.

For receiving the order, they collect it by their own from the counter once it is prepared and notified.

- **Assisted self service restaurants**

These QSRs are places where either the order is collected at the table of the customer or the food is delivered to the table of the customer by a staff member.

- **Full serviced restaurants**

These are the places where both the order placing and the food delivery are done by the staff at the table.

1.2 Literature Review

Fast food has come into our life since 1912 from America and ever since human beings was exposed to its negative health effects. Several studies in literature have tried to estimate the value of health for individuals under different conceptualizations. Most of the studies conducted regarding fast food in Bangladesh and overseas fail to notice that eating fast food is foreseeable at the present society; they just focus on fast food health complications and pay less attention on different attitudes among fast food consumers.
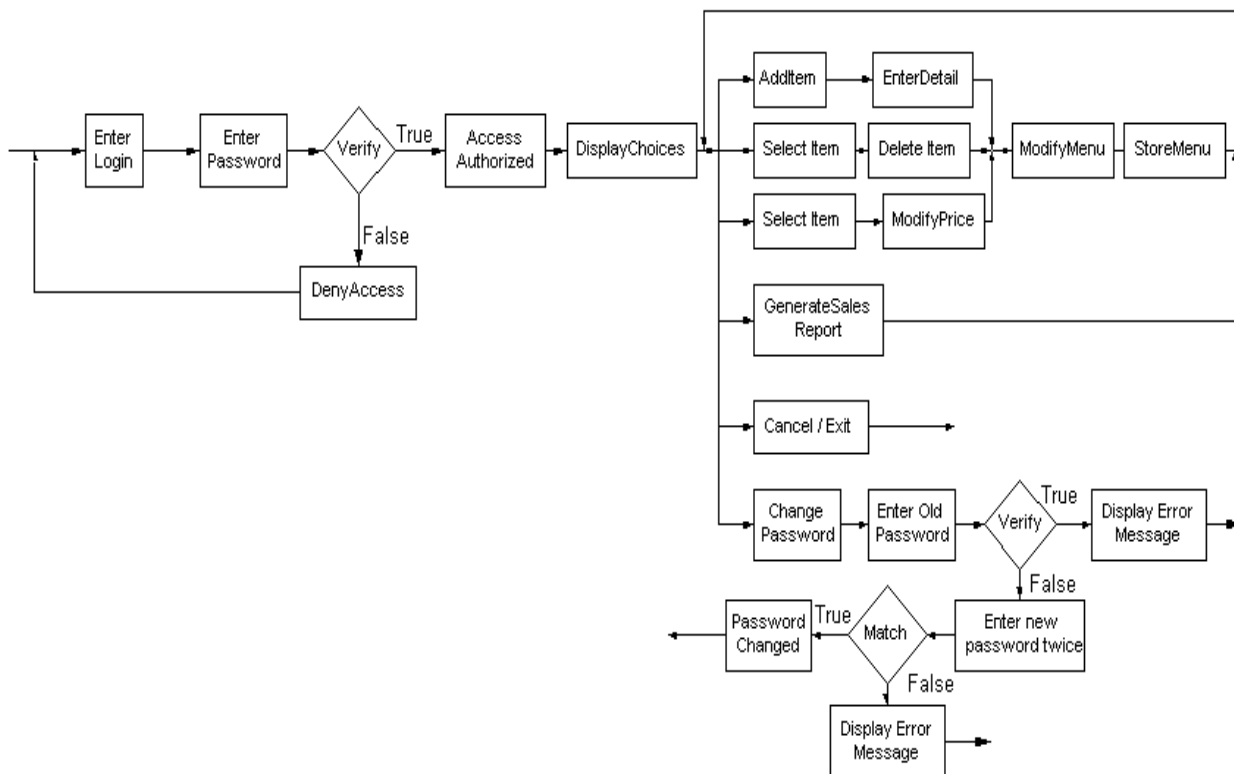
The QSR industry is one of the fastest-growing industries in India and worldwide. According to a report by Researches and Markets, the Quick Service Restaurants (QSR) market in India is projected to grow at a CAGR of over 18% during 2021-2025. Due to multiple factors such as increasing urbanization, rapid expansion in food delivery services, an increase in the number of working professionals and millennials, rising disposable income in the country, etc, the fast-food industry/ QSR business is observing a rise like never before. Thus, there are also a huge number of entrants in the industry and an even greater number of aspirants, which makes it the most competitive restaurant format.
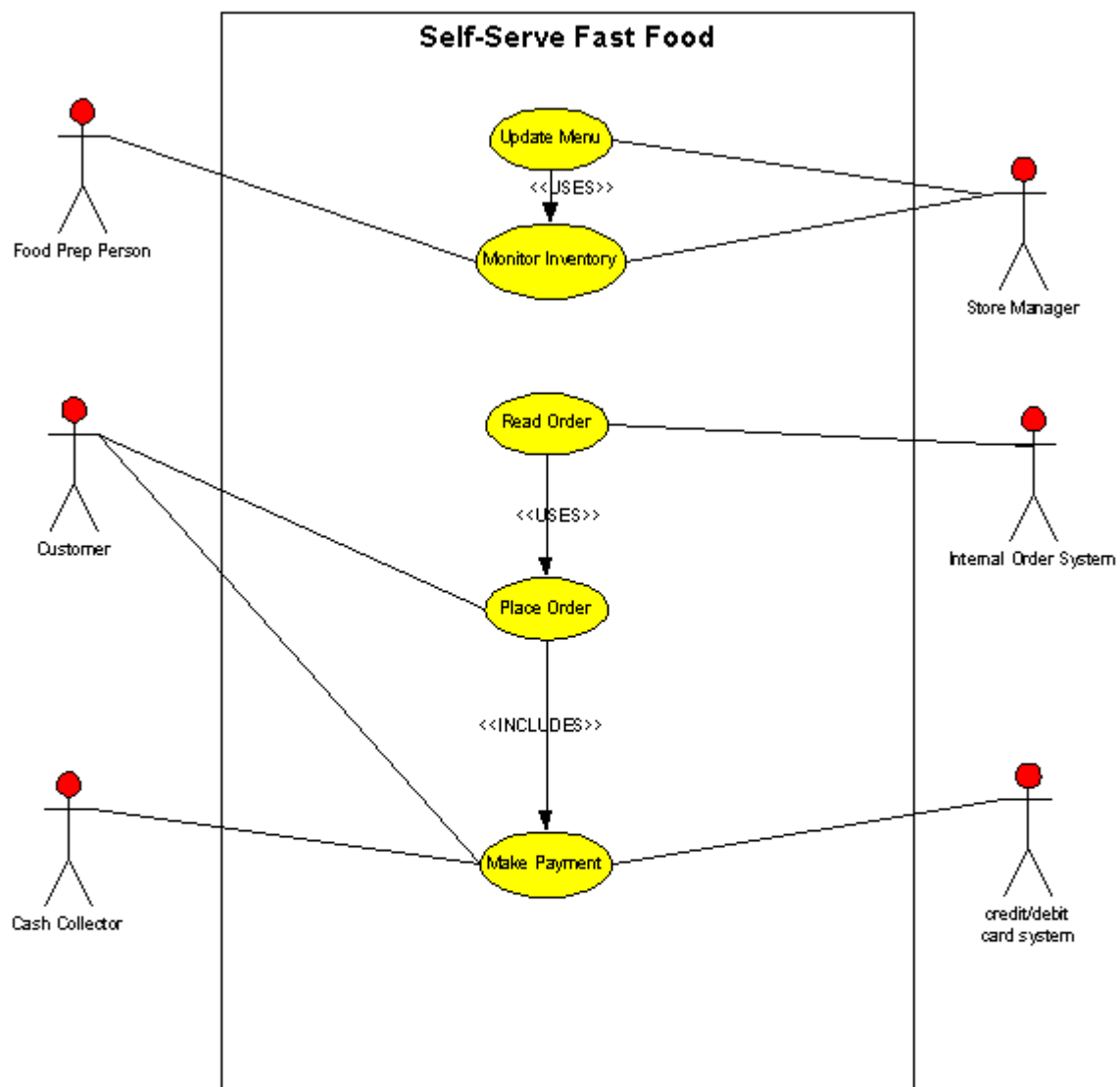
In a QSR, the location is of prime importance. This is because buying in a typical QSR happens not because of the restaurant itself but because the outlet was placed conveniently enough for the customers to buy impulsively. The ideal location, thus, is a place of high footfall area for your target audiences like marketplaces, university campuses, or shopping malls. However, finding the correct location is also the prime challenge in starting a quick-service restaurant. The rentals of high footfall areas are pretty steep, making it difficult to survive at least until the QSR breaks even.

2. Analysis & Design

2.1 Flow of Project

FFBD For System Adminstrator

Self-Serve Fast Food

- Food Prep Person
- Update Menu
- <<USES>>
- Monitor Inventory
- Store Manager
- Read Order
- Customer
- <<USES>>
- Place Order
- Internal Order System
- <<INCLUDES>>
- Cash Collector
- Make Payment
- credit/debit card system

Initial Use Case Diagram

2.2 Working in detail

PIC16F PIC Microcontrollers

Microchip PIC16F , PIC Microcontroller are 8 Bit Microcontroller from 8 PIN - 64 PIN. They are available in various package as DIP, SOIC, MSOP, TSSOP, SSOP, TQFP UQFN etc.PIC12/PIC16 microcontrollers are ideal for many applications that require a higher level of embedded control and more memory.
These peripheral-rich devices feature various serial analogy and digital peripherals, such as: SPI, I2C, USART, LCD and ADCs. With low sleep and dynamic current consumption, these MCUs are highly suited for energy efficient and battery powered applications.

LCD Interface

Display units are the most important output devices in embedded projects and electronics products. 16x2 LCD is one of the most used display unit. 16x2 LCD means that there are two rows in which 16 characters can be displayed per line, and each character takes 5X7 matrix space on LCD. In this tutorial we are going to connect 16X2 LCD module to the 8051 microcontroller (AT89S52). **Interfacing LCD with microcontroller** might look quite complex to newbies, but after understanding the concept it would look very simple and easy. Although it may be time taking because you need to understand and connect 16 pins of LCD to the microcontroller. So first let's understand the 16 pins of LCD module.

Buzzer

A buzzer or beeper is an audio signalling device,[1] which may be mechanical, electromechanical, or piezoelectric (*piezo* for short). Typical uses of buzzers and beepers include alarm devices, timers, train and confirmation of user input such as a mouse click or keystroke.

Power Supply

A power supply is an electrical device that supplies electric power to an electrical load. The main purpose of a power supply is to convert electric current from a source to the correct voltage, current,

and frequency to power the load. As a result, power supplies are sometimes referred to as electric power converters. Some power supplies are separate standalone pieces of equipment, while others are built into the load appliances that they power. Examples of the latter include power supplies found in desktop computers and consumer electronics devices.

PC RS232 Interface

A serial port complying with the RS-232 standard was once a standard feature of many types of computers. Personal computers used them for connections not only to modems, but also to printers, computer mice, data storage, uninterruptible power supplies, and other peripheral devices.

Compared with later interfaces such as RS-422, RS-485 and Ethernet, RS-232 has lower transmission speed, shorter maximum cable length, larger voltage swing, larger standard connectors, no multipoint capability and limited multidrop capability. In modern personal computers, USB has displaced RS-232 from most of its peripheral interface roles. Thanks to their simplicity and past ubiquity, however, RS-232 interfaces are still used—particularly in industrial machines, networking equipment, and scientific instruments where a short-range, point-to-point, low-speed wired data connection is fully adequate.

Switches (Button) Interfacing

The pushbutton is a component that connects two points in a circuit when you press it.

When the pushbutton is open (unpressed) there is no connection between the two legs of the pushbutton, so the pin is connected to 5 volts (through the pull-up resistor) and we read a HIGH. When the button is closed (pressed), it makes a connection between its two legs, connecting the pin to ground, so that we read a LOW. (The pin is still connected to 5 volts, but the resistor in-between them means that the pin is "closer" to ground.)

3. Applications

3.1 Advantages and Disadvantages

Advantages:

- Quality Control
- Customer Satisfaction
- Self Servicing
- Provide healthy food at minimum amount of time
- Reduces Human Error
- Reduces Man Power

Disadvantages:

- Maintenance Cost
- Build-up Cost
- A potential breach of privacy.

3.2   Applications

This project can be used in any restaurants, cafes, college canteen, etc.

4.Conclusion

4.1   Output Result

4.2   Conclusion

Service operations management is essential in the food service industry. The restaurants are required to consistently and continuously plan, implement, evaluate and improve on the various aspects of the service operations for optimum customer satisfaction, revisits and positive word -of-mouth. In fact, superior customer service helps in developing good bonding with customers which will lead to long term relationship.

The QSR business, by definition, is about serving customers at speed. We believe that if QSRs act quickly in this crisis to meet the changing needs of consumers while prioritizing people's health and well-being, QSRs can not only withstand these difficult times but also build valuable capabilities for resilience and success in the future.

5.Future Scope

We're sure until now you understand that the concept of QSR has come a long way. In fact, CARE ratings of the concept are very good. This food-service system is to record an 11 percent growth between 2020 and 2023. The sales will surpass the 5-trillion mark by the end of 2022.

They're so ubiquitous that we all tend to stop by QSRs knowingly or unknowingly. Now, let's discuss the factors that make QSR an astounding success.

People in the age bracket of 15-35 years love to dine-out and eat delicious food. So, naturally, they spend a huge fraction of their earnings on fast foods. If you're a QSR chain, they're your ideal customer base and you should focus on them. Luckily, current age demographic statistics say that the median age of India is 27 years. This figure is lower than the global average and a huge advantage for Indian QSRs.

Giant food chains have come up with some novel ideas to cater to the health-conscious millennials too. In western and southern Indian, entrepreneurs are investing around 1000 crore in the next 3 years to incorporate healthier food varieties. These foods will include low-fat & low-calorie options too. So, health-conscious millennials will not have to worry about the calorie-count. Further, the stores would be completely digitized and offer flexible cashless payment options to attract this sector as well.

6.REFERENCES

1. Banks, J., Carson, II, J. S., Nelson, B. L., and Nicol, D. M. 2001. Discrete-Event System Simulation. 3rd ed. Upper Saddle River, New Jersey: Prentice Hall.

2. Biller, B. and Nelson, B. L. 2002. Answers to the top ten input modeling questions. In Proceedings of the 2002 Winter Simulation Conference, eds. E. Yücesan, C.-H. Chen, J. L. Snowdon, and J. M. Charnes, 35–40. Piscataway, New Jersey: Institute of Electrical and Electronics Engineers. Available via [accessed September 1, 2004].

3. Kharwat, A. K. 1991. Computer simulation: an important tool in the fast-food industry. In Proceedings of the 1991 Winter Simulation Conference, eds. B. L. Nelson, W. D. Kelton, and G. M. Clark, 811–815. Piscataway, New Jersey: Institute of Electrical and Electronics Engineers.

4. Sargent, R. G. 2003. Verification and validation of simulation models. In Proceedings of the 2003 Winter Simulation Conference, eds. S. Chick, P. J. Sánchez, D. Ferrin, and D. J. Morrice, 37-48. Piscataway, New Jersey: Institute of Electrical and Electronics Engineers. Available via [accessed September 1, 2004]

5.Smith, D. J. 1994. Computer simulation applications in service operations: a case study from the leisure industry. The Service Industries Journal 14(3): 395-408.