

Campus Eats the Food Pre-ordering and Orders Monitoring System

Shashank P Gurukar¹, Shriram Vishweshwar Hegde², Srusti P N³, Neha S⁴, Dr Suhaas K P⁵

¹Student, Information Science and Engineering, NIE Mysuru, Karnataka, India

²Student, Information Science and Engineering, NIE Mysuru, Karnataka, India

³Student, Information Science and Engineering, NIE Mysuru, Karnataka, India

⁴Student, Information Science and Engineering, NIE Mysuru, Karnataka, India

⁵Assistant Professor, Information Science and Engineering, NIE Mysuru, Karnataka, India

ABSTRACT

In traditional college canteens, the process of ordering food is often manual, time-consuming, and prone to inefficiencies, especially during peak hours. To address these challenges and enhance the overall experience, this project introduces The Food Pre-ordering and Orders Monitoring System for a college campus canteen. This system leverages digital technology to streamline the food ordering process, improve order accuracy, and provide real-time monitoring capabilities. This system offers advantages in terms of efficiency, accuracy, convenience, and overall user experience, addressing many of the limitations associated with the existing manual system.

Keywords: - Food Pre-ordering, Orders Monitoring System, real-time monitoring

1. INTRODUCTION

In the evolving landscape of college life, the traditional intricacies of food ordering at campus canteens are poised for a paradigm shift. The current manual system in college canteens involves a traditional approach to food ordering, which relies heavily on physical interactions and manual processes. In this system, students interested in ordering food typically need to visit the canteen in person. Once at the canteen, they manually review printed or displayed menus, interact with canteen staff to place their orders, and make payments in cash. This process often involves standing in queues, especially during peak hours, leading to potential delays and inefficiencies.

Canteen staff, in turn, manage the orders manually, which includes taking notes, processing cash transactions, and preparing the ordered items. The lack of a digital interface makes it challenging to provide real-time information to students about the availability of specific food items. Additionally, order accuracy can be susceptible to human errors, and there is limited visibility for canteen administrators into sales trends and popular items.

Introducing "The Food Pre-ordering and Orders Monitoring System," this innovative solution is designed to cater to the diverse and dynamic needs of today's students while addressing the operational demands of college canteens. By seamlessly integrating technology into the culinary journey, the system aims to offer students a convenient and personalized dining experience, liberating them from conventional queues through efficient pre-ordering, real-time menu exploration, and order tracking. Simultaneously, canteen administrators gain valuable insights through analytics tools, fostering adaptability and continuous improvement. Embracing secure, cashless

transactions, this system represents a transformative step towards a more engaging and streamlined campus dining experience for students and canteens alike.

2. RELATED WORK

In Paper [1], An automated food ordering system is proposed which will keep track of user orders smartly. Basically, they filamented a food ordering system for different type of restaurants in which users will order or make custom food by one click only. By means of an android application for Tablet PCs this system was implemented. The front end was developed using JAVA, Android and at the backend MySQL database was used.

In Paper [2], 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 further order processing. The solution provides an easy and convenient way to select pre-order transactions from customers.

In Paper [3], There was an attempt to design and implement digital dining in restaurants using android technology. This system is a basic dynamic database utility system which fetches all information from a centralized database. Efficiency and accuracy of restaurants as well as human errors were improved by this user-friendly application. Earlier drawbacks of automated food ordering systems were overcome by this system, and it requires a one-time investment for gadgets.

In Paper [4], An application of integration of hotel management systems by web services technology is presented. Ordering system Kitchen Order Ticket (KOT). Billing System Customer Relationship Management systems (CRM) are held together by Digital Hotel Management. Adding or expanding a hotel software system in any size of the hotel chain's environment was possible with this solution.

In the existing manual system where students need to physically visit the canteen to inquire about food items, place orders, and make advance payments, there are several challenges and drawbacks, especially during peak hours.

3. PROPOSED WORK

Implementing this proposed system would significantly enhance the efficiency and user experience, reducing the burden on the canteen during peak hours, and providing students with a more convenient way to order food.

- User Login: Students and admin can log in to the system using their credentials.
- Digital Menu: A comprehensive digital menu is available, showcasing food items,
- Digital Menu: A comprehensive digital menu is available, showcasing food items, descriptions, prices, and images. Students can browse the menu at their convenience.
- Pre-Ordering Functionality: Students can place food orders in advance, they need not wait at the canteen.
- Real-time Availability Updates: The system provides real-time updates on the availability of food items, preventing disappointment due to unavailability.
- Order Tracking: Students can track the status of their orders in real-time through the system. Notifications are sent by the admin at different stages, such as order confirmation, food preparation, and order ready for pickup/delivery.
- Admin Dashboard: Canteen administrators have access to a dashboard to update the menu. The system is accessible through a mobile app for admin to manage orders for flexibility and convenience.

3.1 Objectives of Proposed work

1. To implement an online platform that enables students to pre-order food, which reduces waiting time by eliminating the need for in-person order placement.
2. To develop a web interface to provide students with remote accessibility, making it more convenient for them to browse the menu and place orders at their convenience.
3. To implement a system that provides real-time updates on the availability of food items, allowing students to make informed decisions and preventing disappointment due to unavailability.
4. To improve the overall experience by incorporating features such as order tracking.

4. SYSTEM DESIGN

The Food Pre-ordering and Orders Monitoring System is meticulously designed to provide a seamless and efficient experience for both students and college canteens. The architecture of the system is structured to accommodate key features such as pre-ordering, real-time monitoring, customization, secure transactions, and analytics. The Administrator Module serves as the control center for the college canteen owner or staff. This mobile application is designed to facilitate efficient order management and status updates. The Student Module, a seamlessly designed web application, caters to students' needs, offering an intuitive platform to explore the canteen menu and place orders. The Admin Dashboard, as a web interface for the college canteen owner, is a crucial component that provides a comprehensive set of tools for menu management and overall control of the system.

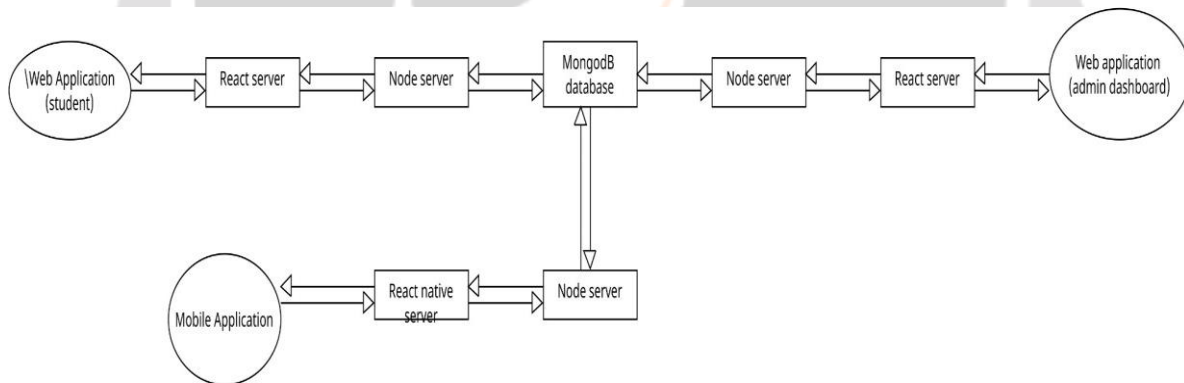


Fig -1 System Design Model

5. IMPLEMENTATION

5.1 Student Ordering System Implementation:

This specifies how the system facilitates the ordering process for students, encompassing login mechanisms, menu exploration, order placement, and notification functionalities. On the home page, students are greeted with two options: Student Login and Admin. Upon selecting Student Login, they are prompted to enter their University Serial Number (USN) as the username and their date of birth (DOB) as the password, following a similar login process to the Contineo website of our college. After successful authentication, students are presented with a cluster map displaying various canteen locations on campus. Clicking on a specific pin on the cluster map redirects students to the respective canteen's page, where they can view the menu items available. Students have the flexibility to add desired items to their cart, adjust quantities and place their order by clicking on confirm order. Once the order is placed, a notification email containing the order ID is sent to the student, confirming successful submission.

Subsequently, students receive updates regarding the status of their order, including a final notification when it's ready for pickup.

5.2 Order History and Reordering Functionality:

This specifies the implementation of features related to order history management, such as displaying previous orders, facilitating reorder options enhancing user convenience. In the implementation of features related to order history management, the system prioritizes user convenience and accessibility. Students are granted seamless access to their order history, empowering them with the ability to review past orders effortlessly. By displaying previous orders in a clear and organized manner, the system enhances user experience, facilitating quick retrieval of order details. Moreover, the implementation includes a convenient reorder option, allowing students to easily replicate previous orders with just a few clicks. This functionality streamlines the ordering process, saving time and effort for students who wish to repurchase their favorite items. Overall, the system's approach to order history management prioritizes user convenience and aims to enhance the overall efficiency and satisfaction of the ordering experience for students.

5.3 Admin Interface and Canteen Management Implementation:

This specifies the development of the admin interface, including the cluster map display, canteen selection, login procedures, and menu management functionalities for canteen owners. Upon selecting the admin option from the home page, they are greeted with a familiar interface—a cluster map resembling the one accessible to students. The map presents various canteen locations across the campus, each represented by a pin. By clicking on a specific pin corresponding to a canteen, administrators are seamlessly directed to the login page associated with that particular establishment.

Upon successful authentication, administrators unlock a suite of menu management functionalities tailored to their designated canteen. These tools empower administrators with the ability to finely control the menu offerings, including options to add, delete or modify existing menu items. This comprehensive approach ensures administrators have the flexibility and autonomy necessary to maintain an up-to-date and enticing menu selection for their respective canteens. By streamlining menu management tasks, the system enables administrators to efficiently respond to changing preferences, seasonal variations, and culinary trends, ultimately enhancing the overall dining experience for students and faculty alike.

5.4 Canteen Registration:

This specifies the implementation of features allowing new canteen owners to register their establishments within the system, as well as any tools or processes implemented to facilitate the growth and inclusion of additional canteens. In addition to catering to existing canteens, the platform extends its inclusivity by providing a straightforward registration option for new canteen owners. This feature aims to foster the growth and diversification of dining options available within the system, thereby enriching the overall experience for users. Through a streamlined registration process, prospective canteen owners can easily onboard their establishments onto the platform, expanding the range of culinary offerings accessible to students.

5.5 Mobile Application for Admin Order Management:

The mobile application designed for administrators provides a streamlined interface for receiving and managing orders from various canteens. Upon launching the application, the home page presents a list of canteens, each represented with identifiable icons or names. These canteens serve as clickable elements, allowing the admin to select a specific establishment to manage its orders. Upon clicking on a canteen, the admin is seamlessly directed to the login page associated with that particular establishment. This login page serves as a secure gateway for accessing that particular canteen's order management dashboard. After successfully logging in, the admin gains access to a comprehensive overview of the orders received by the selected canteen. Within the order management dashboard, the admin can view detailed information about each order, including the items ordered and customer details.

5.6 Order Confirmation and Notification Feature:

Within the mobile application, administrators have access to an "Accept" button for each incoming order. Upon reviewing the details of an order and confirming readiness for processing, the admin can click on the "Accept"

button. This action triggers the generation of an order confirmation email, which is promptly dispatched to the respective student. The email includes essential information such as the order ID, serving as a reference for tracking and identification purposes. Additionally, the email assures the student that they will receive further notifications once the order is prepared and ready for pick-up.

Upon the completion of order preparation and its availability for pick-up, the system automatically sends out another email notification to the student. This email serves as a prompt, informing the student that their order is now ready for collection. By providing timely updates and notifications, the system ensures clear communication between the canteen administration and the students, facilitating a smooth and efficient ordering process. This feature enhances user satisfaction and contributes to the overall effectiveness of the order management system.

6. CONCLUSION AND FUTURE ENHANCEMENT

5.1 Conclusion

The Food Preordering and Orders Monitoring System presents a promising solution to enhance efficiency and convenience in the food ordering process. By providing students with a user-friendly platform to pre-order meals, the system reduces waiting times and streamlines the overall dining experience. Real-time updates, facilitated through a dedicated mobile application for canteen owners, contribute to prompt order processing and efficient communication between students and canteen staff. The centralized management capabilities of the admin dashboard, allowing for menu modifications and order adjustments, further ensure a consistent and coordinated food service. As the system introduces these advancements, it also addresses the disadvantages of existing traditional methods, such as long queues, manual order processing delays, and a lack of real-time communication, offering a more modern and efficient alternative for both students and canteen operators.

5.2 Future Enhancement

The future of the Food Pre-ordering and Orders Monitoring System holds vast potential for growth and improvement. By developing a dedicated mobile application, integrating with campus smart card systems for seamless transactions, enhancing analytics capabilities for data-driven decisions, and incorporating AI and ML for predictive features, the system can offer a more convenient and personalized experience. Expanding the vendor network, strengthening security measures, and integrating with Student Information Systems will further enhance its functionality and reach, catering to the evolving needs of students and administrators alike.

7. REFERENCES

- [1]. Kirti Bhandge, Tejas Shinde, Dheeraj Ingale, Neeraj Solanki, Reshma Totare, "an offer system for a Touchpad Enabled Meal Ordering gadget for Android," global magazine of advanced studies in laptop science technology (IJARCST 2015).
- [2]. Varsha Chavan, Priya Jadhav, Snehal Korade, Priyanka Teli," making use of malleable Beat the use of web Grounding Operations," Global ultramodern Wisdom Magazine, Engineering Generation (IJSET) 2015.
- [3]. Resham Shinde, Priyanka Thakare, Neha Dhomne, Sushmita Sarkar, "Designing and Implementing Digital Eating Cafe using Android ", a global magazine for development exploration on known - style and operation of computer technology 2014 study.
- [4]. Ashutosh Bhargava, Niranjana Jadhav, Apurva Joshi, Prachi Oke, SR Lahane, Digital Food Ordering System Placemat Android,A Global Journal of Science and Research Publications (2013).

- [5]. Hairunnisa, Ayob J., Mohd, Helmy A. Wahhab, M. Erdi Ajob, M. Izwan Ayob, M. Af Ayob, "Wi-Fi Meal Ordering System Operation", MASAUM Journal of Computer Science 2009.
- [6]. Noor Azah Samsudin, Shamsul Kamal Ahmad Khalid, Mohd Fikry Akmal Mohd Kohar, Zulkifli Monday, Mohd Nor Ikhazan, "Customizable Wi-Fi mess Ordering Device with rearmost client commentary," IEEE Symposium on Wireless Generation and Packaging (ISWTA) 2011)
- [7]. Serhat Murat Alagoza, Haluk Hekimoglu "Study on Tom Analysis of Beat Buying Stations", Elsevier 2012.
- [8]. Patel Krishna, Patel Palak, Raj Nilali, Patel Lalit "Automated Food Ordering System", Global Journal of Engineering Research and Improvement (IJERD) 2015.
- [9]. Mayur D. Jakhete, Piyush C. Mankar, "Inspection of clever dining areas with menu cards," Worldwide Journal of Smart Restaurant 2015 PC Package with E-Menu Card, Global Journal of PC Package 2015"2015".

