Orderista

- An AI-Based Food Ordering Application

Tejas Raibagi, Ashwin Vishwakarma, Jahnavi Naik, Rujata Chaudhari, Geetanjali Kalme
Department of Information Technology
A.P. Shah Institute of Technology
Thane (M.H), India

Abstract--In today's world, with people hustling for their jobs all the time, a huge count of people don't have the time to actually prepare their lunch and here canteen plays a major role. But then again people are in a rush and don't have much time to spend in the canteen as well to place an order or wait until their order is ready.
This project is based on an AI-based cross-platform application that focuses on automating all the major canteen functionalities. It enables the user to register online, browse and choose from an E-menu card followed by placing the order and receiving confirmation after successful payment. With the help of this app, students and faculties can order food beforehand and can receive it during the break to ensure that the time spent in ordering and collecting the order is as low as possible.
The app also docks in AI, which will help the users to get personal recommendations and food items which are popular amongst others. The objective is to reduce the manual paperwork as the app digitalizes every factor and provides a graphical representation of daily sales and allows comparison for weekly, monthly and annual sales. The feedback system allows the admin to monitor the app and make changes based on the user feedback.

Keywords: Food Ordering, AI Recommendations, Automated Ordering System.

I. Introduction

In today's age of fast canteen automation, many canteens have chosen to focus on quick preparation and speedy delivery of orders. Until very recently, all of this delivery of orders were placed over the phone, but there are many disadvantages to this system, including the inconvenience of the customers needing to have a physical copy of the menu or the bill, lack of visual confirmation that the order was placed correctly, and the necessity for the canteen to have an employee answering the calls or taking the orders.

This application is developed with the motive to optimize the entire canteen process within the college. It will help the college in numerous ways right from every student to the management at a broader end. This application helps automate the daily functionalities of the canteen in a faster way, accurate manner, and also to reduce the manual burden.

During regular college working days, the main issue in our college canteen is not too spacious to accommodate enough students all together to have lunch at the same time. Since, this is specific to our college canteen, where many students visit the canteen only during their break so they have limited time to eat. So, this application helps

them save time and order food beforehand, and have it wherever locations are already in existence but this project is unique and developed based on the technology and the way of implementing the application. The most unique part is the AI Recommender feature. By fetching real-time data from the placed orders, this feature enables the user to have their Personalized recommendations along with the Most enjoyed dishes or frequently ordered by others.

The application mainly consists of three major domains with the targeted users namely the administration, canteen management, and users (students and faculties). The main advantage of an online ordering system is that it greatly simplifies the ordering process for both the customer and the canteen. Once an order is placed on the web page, the same data is stored in the database and later retrieved in much real-time by the desktop application of the canteen. This allows the canteen to quickly fulfill the orders with minimum delay and confusion. The main objective of our application includes making it convenient for those who have less time. It allows users to give their orders beforehand makes them save time and enables them to eat wherever they like. To avoid complications, the user interface is kept simple and uncluttered for users' easy understanding. To make it cost-effective as online transactions are far more secure. This application being cross-platform has the same base code because of which any modifications can be easily adjusted in near future as per the requirements.

II. literature review

The article titled 'Canteen Automation System' was published by authors Sanil Sharma, Panchal Jain, Rinshi Jain, and Roshni Gupta. It was published in fulfillment of the degree of BACHELOR OF ENGINEERING in COMPUTER SCIENCE ENGINEERING from Gyan Ganga Institute of Technology and sciences, Jabalpur(M.P) in Dec(2016). A few notable findings related to our project is the Canteen Automation system, where customers order their food and receive food in the canteen without any delay as they can go directly and collect the ordered food without waiting. The system requires very fewer time factors as compared to manual. The system will provide a fast and efficient automated environment instead of a slow and error-prone manual system. The system will have a GUI interface and very little training is required to learn the application. The main key advantages of this system were related to Time efficiency, user-friendliness, and flexibility. Apart from that, a few disadvantages found were complexity for developing as it follows three-tier architecture.

The main objective behind creating this application is to target college students. Here, most of the food delivery applications target a variety of different audiences. The college students usually prefer to have meals from their canteen as it is budget-friendly, unlike other apps that provide food delivery

from various price ranges. Having the ability to directly order from the canteen at a specific time or getting it delivered to the local delivery spot makes our app feasible among college students.

III. Proposed System

Orderista provides a complete digital solution for ordering food online across campus, improving ordering and service time drastically. It provides systems to help Admins and Canteen owners to monitor their progress and sales and improve their service with the help of user feedback. The app also docks in AI services to provide curated menus based on user preference to help order food. Alongside personal recommendations, AI can also provide a weekly accurate menu that a client can follow for a variety of choices to enjoy over the week.

The technology stack of choice is Flutter for front-end development, NodeJS, and PostgreSQL for the back-end. The stack was selected due to its efficiency in development and performance quality. Flutter helps to create stunning UIs for both iOS and Android via a single code base hence making the overall process simpler. NodeJS and PostgreSQL provide faster communication and help retrieve data quicker and reduce the load on the server.

Security is one of the aspects that was given utmost importance while creating the application. Upon Login JWT token is generated and is stored on the device. The token is useful to authenticate the user asynchronously when the user opens the app for the second time. This provides an immersive experience for the user. The JWT token can be only decrypted by the server to retrieve the data hence making the contents of the token secure. The flow of various entities is explained below.

A. Admin

Figure 1: Admin Portal

1. Users need to login into the app via a unique admin id and password which are encrypted and stored in the database.
2. If credentials are not matched, the admin can try again or proceed to reset the password.
3. If credentials are matched, the admin is presented with a dashboard.
4. The dashboard allows the admin to view newly added Feedbacks.
5. Admin is provided with the Activities module to post any important information about the canteen which will be sent to the user via notification.
6. In the activity's module, the admin can add or remove a canteen owner.
7. Analytics will provide a graphical representation of positive/negative reviews for a day, week, month, and year. This helps the admin to consider every detail before making an important decision.

B. Client

Figure2: Client/User portal

1. Users need to login into the app via a unique college id and password which are encrypted and stored in the database.
2. If credentials are not matched, the user can try again or proceed to reset the password.
3. If credentials are matched, the user is presented with a homepage.
4. The homepage allows the user to navigate through the menu and add items to the cart.
5. The favorites tab will let the user directly order their saved item.
6. Order History will let users check and re-order items from older purchases directly.
7. Cart module contains all food items the user wants to order and can modify the cart list to his needs.
8. Once satisfied, the user can move to a payment gateway where the user can make payment via UPI/Card or can use an integrated wallet made available in the app.
9. Profile module will help the user to update their password, add money to the wallet for future use, and to give generic feedback if needed.
10. AI recommendation module will pick the user an item based on their previous orders and personal likings which will be provided while setting up the AI assistant.

C. Canteen Owner

Figure 3: Canteen manager portal

1. Users need to login into the app via a unique canteen id and password which are encrypted and stored in the database
2. If credentials are not matched, the canteen owner can try again or proceed to reset the password.
3. If credentials are matched, the canteen owner is presented with a dashboard.
4. The dashboard allows the canteen owner to view daily reports of the order and is updated in real-time.
5. The owner has an order list where all the orders made by the users are listed in real-time.
6. Once the order is fulfilled the owner can update its status and the list and report are automatically updated.
7. Analytics will provide a graphical representation of positive/negative reviews and total orders of a day can be compared which also helps AI to recommend specials to their users.

IV. RESULT

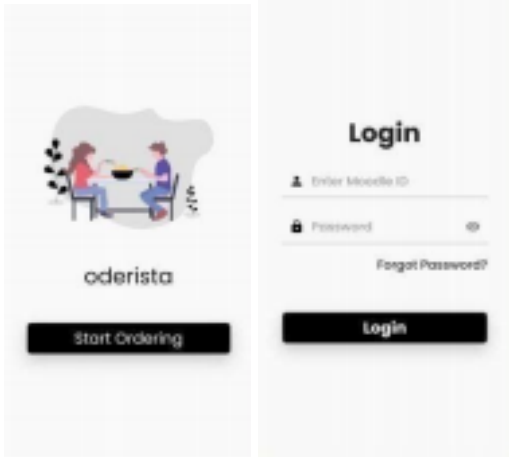

Figure 4: The login screen helps the user to enter the appropriate username and password.

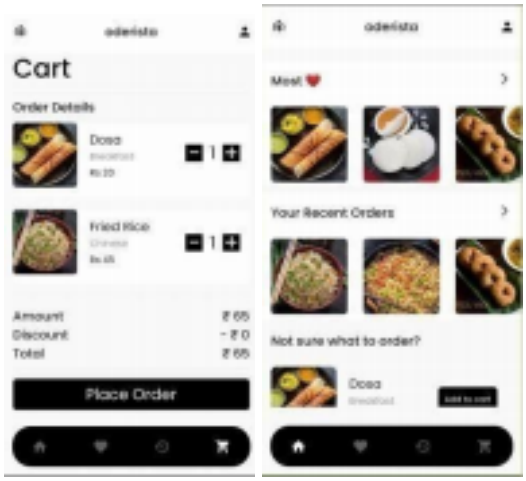

Figure5-

On the homepage, where the user can finalize the cart and can access the menu, proceed with the payment via a wallet or add other items to the cart available for later payment.

V. CONCLUSION

In the proposed system, an AI-based cross-platform application is developed to automate the daily canteen functionalities. This ensures to enable the end-user to register online, select the food they plan to have for their lunch from the e-menu card, and place the order online by selecting the food that aims to reduce the load in the canteen. Here, the entire process of taking the order and serving the food, which is automated utmost time in our day-to-day life.

ACKNOWLEDGEMENT

We would like to express our gratitude to Prof. Rujata Chaudhari and Prof.Geetanjali Kalme for allowing us to do this work. Finally, we would like to thank our college A.P. Shah Institute of Technology for providing us with such a huge opportunity.

REFERENCES

[1] en.wikipedia.org
[2] www.google.com
[3] https://www.freeprojectz.com/project-report/1778
[4] https://www.studentprojectguide.com/php/online-food-ordering-system

[5] http://career.infotechmantra.com/project/Canteen_Automation_System.PDF
[6] https://www.ijitee.org/wp-content/uploads/papers/v9i7/G5095059720.pdf
[7] http://www.ijsrd.com/articles/IJSRDV7I20481.pdf
[8] Flutter.dev
[9] www.irjet.net
[10] http://ijirt.org/Article?manuscript=147528
[11] http://www.ijsrd.com/articles/IJSRDV7I20481 .pd f
[12] https://nevonprojects.com/canteen-automation-system
[13] https://www.slideshare.net/100008381806318/canteen-automation-system-updated-revised
[14] https://phpgurukul.com/food-ordering-system-using-p hp-and-mysql
[15] http://ijarcet.org/wp-content/uploads/IJARCET-VOL9-ISSUE-3-91-97.pdf