Minimato - Food Ordering Single Page Application with Json Web Tokens Authentication Using Pern Stack

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ABSTRACT: Now a day, it is a mandate for each and every person to maintain social distancing and to reduce people crowds due to the global pandemic, COVID. Our project brings up a solution for maintaining social distance and also automating the manual food ordering system in college canteens. The aim of this project is to digitize ordering of foods in the college canteen and eliminate the waiting time (approximately 5 to 8 minutes) in queues and the human to human contact. An online food ordering application - Minimato is specifically developed for college canteens. The students can browse through multiple canteens and their menus and orders can be placed in few clicks. Canteen owners can easily navigate to the user interface to update the menu and manage the incoming orders. The order history is well maintained and can use for future calculation purpose. This application mainly focuses on authentication part using JSON Web Tokens on both canteen accounts and student accounts. The system also uses Auto Suggestion for displaying the canteens based on the user input. By implementing this system the food ordering system is digitalized and the waiting time and human to human interaction is reduced.

KEYWORDS: Online Food Ordering Application, JWT Authentication, Canteen, JSON.

I.   INTRODUCTION

During this covid pandemic, it is necessary for us to minimize the human to human contact and stay safe. The aim of this project is to digitize ordering of foods in our college canteen. This project allows us to achieve this by eliminating the need to wait in queues and manually order food at a particular canteen. The system uses JWT Authentication for secure transactions and storing server data. Also, the system uses Multer for image storage and Twilio for sending text messages for the user. The user can take-away the food from the canteen.

[1]. JSON Web Token (JWT) is an open standard (RFC 7519) that defines a compact and self-contained way for securely transmitting information between parties as a JSON object. This information can be verified and trusted because it is digitally signed. It is an Internet proposed standard for creating data with optional signature and/or optional encryption whose payload holds JSON that asserts some number of claims. The tokens are signed either using a private secret or a public/private key.

[2]. Multer is a popular Node.js middle ware used for handling multi-part / form-data requests. It makes use of busboy to parse any data that it received through an HTML form. This greatly enhances its performance because the busboy module is unmatched when it comes to analyzing form data. It provides us control and flexibility when handling requests - we get detailed information about each uploaded file, the ability to add a custom storage engine, validation of files according to our needs, the ability to set limits on uploaded files.

[3]. A Twilio Messaging Service is a messaging application, usually specific to a use-case or campaign that is powered by a group of phone numbers that you select based on the needs of that use-case. It is an API to send and receive SMS, MMS, and OTT messages globally. It uses intelligent sending features to ensure messages reliably reach end users wherever they are. We can enable the messaging service and select phone numbers all within the Twilio Console.

[4]. The aim is to digitalize the manual food ordering system in the college canteens. Keeping in mind the covid pandemic, bustling

canteen can lead to more human to human interaction. The students have to wait in long queues to get their food. Paper work is needed to maintain the order history. Also humans are prone to making mistakes or errors in managing and tracking the errors. Every canteen needs an employee for taking the order and processing the order and the labor rates are increasing every now and then.

II. METHOD OF STUDY

This paper surveys the journals of recent years. The main objective is to contemplate knowledge regarding efficient online food ordering systems. The surveyed paper focuses on several works contributed to online food ordering. We looked at several databases like IEEE, ResearchGate, IEEE Xplore, and other journals.We have also considered each article's references to get relevant papers.

III. SYSTEM ARCHITECTURE
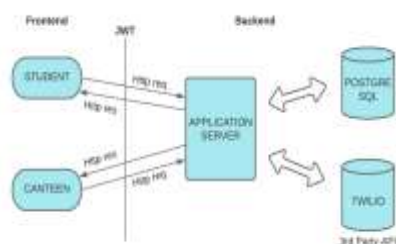
SYSTEM ARCHITECTURE

The student can register and login into the system and view the available canteens. After the login, a JWT token is generated for each student, which is stored in the local system. The student can view the menu and order food from one of the listed canteen and he/she can view the cart and proceed for checkout. The canteens can be registered using the Canteen login and the menu can be updated and the incoming orders are maintained. The system also using Twilio for sending text messages to the students after the food is ready.

IV. SYSTEM IMPLEMENTATION

In the system construction, we use PERN stack for developing the system. The web application is created using react and for the backend node js. The database operations are performed using PostgreSQL. The following are the modules used in the system and their associated processes.

A.USER LOGIN/ SIGNUP:

The user can either perform the login or the signup. The signup option can be used for the new users. This module uses the JWT Authentication for storing the username and password in the database. It also ensures that the password is stored in the database in encrypted form. And also JWT is used for user validation purpose.

B.SEARCHING THE CANTEEN

The student can search for the canteen that are available in the list. This module uses Auto Suggestion. By enabling the auto suggestion, all the possible canteens are displayed based on the alphabet typed by the student.

C. ORDERING FOOD

The students can go through the food menu available in different canteens Upon selecting the canteen, the students can either add or delete food items to the cart and also view the cart.

D. CHECKOUT

The students can re-view the cart and can further add or delete food items to the list and finally proceed for placing the order.

E. CANTEEN LOGIN/ SIGNUP

The canteen manager can either perform the login or the signup. The signup option can be used for registering the new canteens. This module uses the JWT Authentication for storing the username and password in the database. It also ensures that the password is stored in the database in encrypted form. And also JWT is used for canteen validation purpose.

F. UPDATE MENU

The canteen managers can login and can update their food menu by adding food items to the list or deleting food items from the list.

G. INCOMING ORDER

The canteen manager can login into the business account and maintain the incoming food orders. The canteen managers can either accept the order or delete the food order.

H. NOTIFYING THE USER

After the food is processed, the canteen managers intimate the students that their food is ready via a text message. Finally, the students make the payment using cash on delivery method and collect their food from the respective canteens.
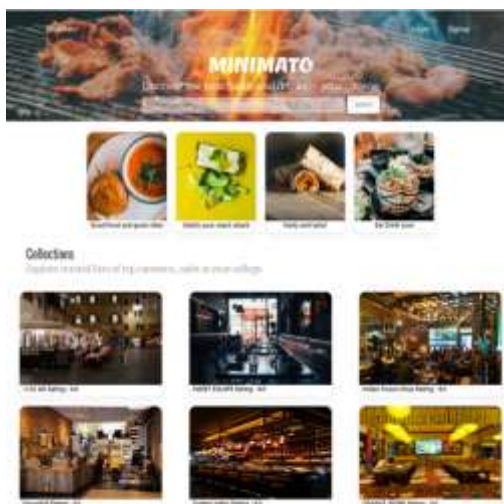
USER DASHBOARD

V.   CONCLUSION

A food ordering system has been developed for college canteens that effectively reduce the human to human contact. The system automates the manual food ordering process by allowing the users to order the food without physically going to the canteen. Users can create orders through the web interface. The menus, canteens, users, and orders can be managed by the canteen managers. The system effectively reduces the waiting time, which can be used in a productive way. Hence this system works towards achieving to minimize the human contact and the waiting time.

VI.   FUTURE ENHANCEMENT

Certain points of improvements on both technical and aesthetic fronts can be achieved in the future. An additional functionality of food recommendation system can be incorporated in the system. This would display the canteens based on the user's choice and interest. The payment system used in this system can be updated to an online mode payment. Lastly, based on the feedback from the user, the canteen ratings can be improved. Such enhancements and more are possibly to be implemented to make the system better and give a more intuitive experience to the user.

VII.   ACKNOWLEDGEMENT

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