Canteen Food Ordering System and Management

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ABSTRACT: The persistent problem circulating around various university canteens has always been about high crowd density during lunch hours. To efficiently tackle this issue, a platform called "Smart Canteen" has been developed that integrates an online food ordering system, a virtual queuing system. It also improves the way of handling the payments by using the Unified Payment Interface (UPI). Another major problem is wastage of food and insufficient food. By using machine learning, we can dig the data of ordering and collections of orders to provide the canteen admin to predict the food for tomorrow. Therefore, it reduces the wastage of food and supply on-demand. This improves the admin dashboard to next level and makes use of this software in high-extend.

I. INTRODUCTION

The project "Canteen Automation System" enables the end users to register online, read and select the food from e-menu card and order food online by just selecting the food that the user want to have using **mobile** application. The results after selecting the food from the E-menu card will directly appear on the screen near the Chef who is going to cook the food for you. By using this application, the work of the staff is reduced and we can also say that the work is nullified

II. SCOPE OF PROJECT

The scope of this paper is to reduce overcrowding in restaurants, canteens, hotels by implementing a queuing system in an online food ordering platform that includes cashless payment.

III. EXISING SYSTEM

- The project online canteen system helps the users to book their food earlier. The users have to book their food on the e-menu card.

- As soon as they book their food the order will be sent to the chef for preparing it. The present system consists of the manual system that involves the paper work of the billing system and maintaining the files too.

- In the proposed system the payment is online and the e-menu will be available for the user. The users will have the username and the password through which they can book.

- This project will help in demonstrating the route from adapting materials to developing an online environment. This brings all necessities in one place that benefits both the user and the canteen owner smartly.

IV. PROPOSED SYSTEM

Over-crowding:

- The persistent problem circulating around various university canteens has always been about high crowd density during lunch hours.

- To efficiently tackle this issue, a platform called "Smart Canteen" has been developed that integrates an online food ordering system, a virtual queuing system, together with a machine learning-based crowd estimation system.

- Smart Canteen aims at reducing queuing time when ordering food, and allowing users to know the estimated crowd density in a university canteen in real-time.

- The crowd estimation system has been developed using a multi-column convolutional neural network (MCNN).

Handling Payments:

- It also improves the way of handling the payments by using the Unified Payment Interface (UPI).

- Easy way to accept and make secure payments. All digital and pay on delivery (POD) is added to the app.

V. PROPOSED SYSTEM CONDITION

Voice-based ordering:

- Using natural language processing to make order using the microphone which provides super cool user experience.

- Comparing to the regular ordering experience it allows faster experience.

Food-demand Prediction:

- Another major problem is wastage of food and insufficient food.

- By using machine learning, we can dig the data of ordering and collections of orders to provide the canteen admin to predict the food for tomorrow.

- Therefore, it reduces the wastage of food and supply on-demand.

- This improves the admin dashboard to next level and makes use of this software in high-extend.

VI. SYSTEM ARCHITECTURE
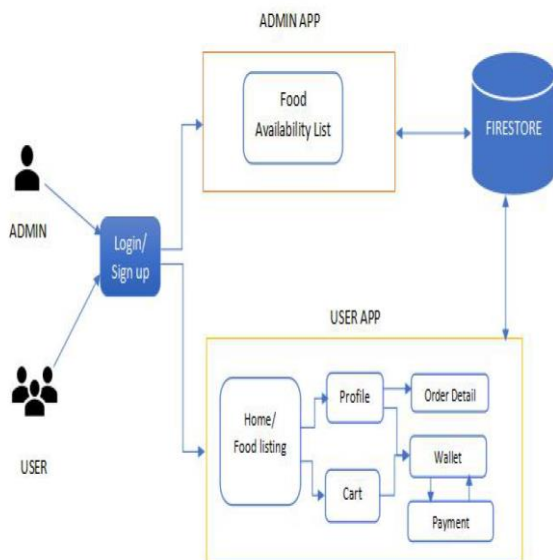
VII. MODULES

The proposed system is divided into separately named and addressable components called modules that are integrated to satisfy problem requirements.

The following are the main modules that has been incorporated in our system:

- User Authentication Module

- Admin Dashboard Module

- Voice Ordering Module

- Fetching Data Module

- Report generation for Admin Module

- Cart Module

- User history Module

A. User Authentication Module

User authentication is a module of identifying the user and verifying that whether the user is allowed to login to the application or not. The main aim of this module is to authenticate the user and give access to the application to view or to search the medicines for their needs. Firstly, The user should register their details and then using their username and password they will access to the application.


B. Fetching Data Module

The purpose of this module is to fetch the data. The data that has been collected from the previous module will be given as the input to this module. This module will search for the related things based on the given input. when the user search for some medicines the system will fetch the data related to the users need.
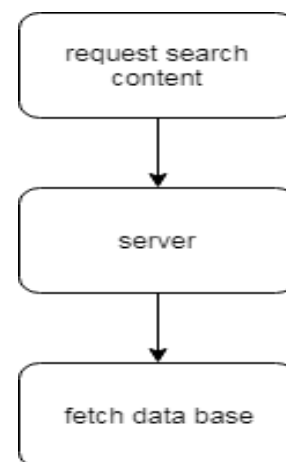
C. Voice ordering Module

The purpose of this module is to fetch the voice. The incoming voice is turned to Speech-To-Text and then used in the system.
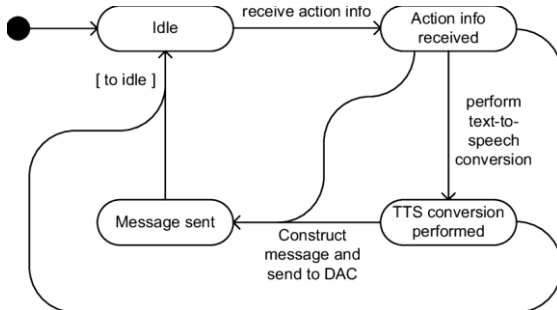
D. Admin Dashboard module

Admin dashboard is given for the canteen management for analyzing the report of the entire system.

E. User history Module

User history module is used for to generate the history of recommendation of the food for the users and to find the favorites of the users.

F. Cart Module

Cart module is to add the food to be ordering in the queuing system to add the food in the bucket and perform the checkout operation.

G. Report Generation Module

Report generation module is for the admin to generate the report for the week and perform future food based on the prediction algorithm

VIII.   CONCLUSIONS

- We have proposed a system for maintaining the canteen system and also regulate the orders in ease.

- The major problems of over-crowding and on-demand food supply are solved using this system.

- This system also improves the efficiency and all problems comes under one solution.

- This is a win-win solution for both the user and the admin.

IX. REFERENCES

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