Online Food Ordering Application Using ML and Android Studio

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***Abstract*— Restaurants are becoming increasingly popular these days. As a result, the number of eateries is increasing. The Online Food Ordering System's main purpose is to maintain track of information such as Item Category, Food, Delivery Address, Order, and Shopping Cart. It keeps track of information about the Item Category, the Customer, the Shopping Cart, and the Item Category. Only the administrator gets access to the project because it is totally built at the administrative level. The project's purpose is to develop software that will cut down on the time spent manually managing Item Category, Food, Customer, and Delivery Address. It saves the Delivery Address, Order, and Shopping Cart information.**

Index Terms: **Android studio, Machine earning, Java, Firebase, Android XML.**

I.INTRODUCTION

My motivation for creating this app stemmed from the fact that my family works in the fast food industry, and I dislike waiting in lines or having to call ahead to place an order, especially during peak lunch or dinner hours. In addition, I value my current knowledge of the Java and JSP programming languages, as well as understanding how strong and dynamic they are when it comes to web design and application development. Because I found them to be highly beneficial when working on the technologies, I used JavaScript, JSP, HTML, and Java to develop this application on the client side, and Oracle database on the back end.

The technology we recommend is an easy-to-use online food ordering system for customers. It overcomes the disadvantages of traditional queueing systems. Our system is both a convenient way to order food from restaurants and a mess service. The procedure of taking a customer's order is made easier with this technology. Customers can place orders fast utilising the online meal ordering system, which generates an online menu. Customers can also use a meal menu to keep track of their orders. Users can also rate the food goods using this system's feedback feature. In addition, based on the user's ratings, the proposed system can recommend hotels and meals, and the hotel staff will be notified of any quality changes.Payments can be made either online or through a pay-on-delivery mechanism.

II.RELATED WORK

2.1 Existing System

Other types of restaurant applications exist. They do, however, provide information on hundreds of thousands of establishments. Online eateries are few and few between, with many of them relying solely on websites to take orders. We've designed an application that the user may download on his Android smartphone and use to order his favourite meal in a matter of minutes.

At that time he will have to enter his details and choose an email and password. The password must be at least 6 characters long, and the user cannot leave any fields blank while registering in a certain section. He will also be prompted to provide further information such as his name, state, city, suburb, email, phone number, and so on. If the user is already a registered user, they must login with their username (email or phone number) and password. This user ID and password will be matched to the firebase database by the same user at the time of registration. The user will then be taken to a menu page where they must choose at least one item. User cannot proceed without selecting at least one item from the menu (applicable for chef section).

An alert box appears while placing an order to confirm the menu. The total payment will then be displayed, and the user will be prompted to input the address to which the meal should be delivered. The address is required, and the user will be unable to progress without it. Customers can also save their home address for future orders to save time. After that, the user can choose a payment option such as cash on delivery, debit or credit cards, and so on. Customer cannot order a second food item until the first is safely delivered to his home. For security reasons, whichever choice he selects, the information from the preceding menu will be cleared.

2.2 Literature Survey

Given below are the research papers used for our analysis whilst considering various approaches.

In [1] along with customer feedback for a restaurant a design and execution of wireless food ordering system was carried out. It enables restaurant owners to setup the system in wireless environment and update menu presentations easily. Smart phone has been integrated in the customizable wireless food ordering system with real- time customer feedback implementation to facilitate real- time communication between restaurant owners and customers.

In Paper [2], the purpose of this study was to investigate the factors that influence the attitude of internet users towards online food ordering in Turkey among university students. A Technology Acceptance Model (TAM) developed by Davis in 1986 was used to study adoption of Web environment for food ordering. Trust, Innovativeness and External Influences are added to the model as main factors along with TAM.

In Paper [3], there search work aims to automate the food ordering process in restaurant and also improve the dining experience of customers. Design implementation of food ordering system for restaurants were discuss in this paper. This system implements wireless data access to servers. The android application on user's mobile will have all the menu details. Kitchen and cashier receive the order details from the customer mobile wirelessly. These order details are updated in the central database. The restaurant owner can manage the menu modifications easily.

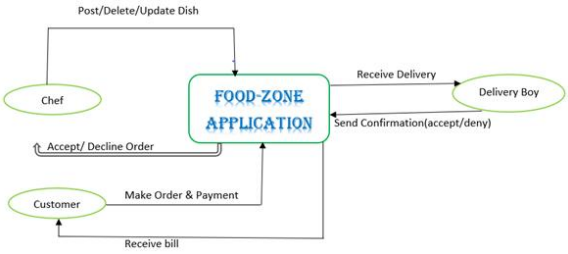
In Paper [4], this research works on efforts taken by owners of restaurants to adopt information and communication technologies such as PDA, wireless LAN, costly multi-touch screens, etc. to enhance dining experience. This paper highlights some of the limitations of the conventional paper based and PDA-based food ordering system and proposed the low-cost touch screen- based Restaurant Management System using an android Smartphone or tablet as a solution.

In Paper [5], the purpose of the study was The application is based on user's requirement and is user cantered. All issues related to all user which are included in this system are developed by this system. If people know how to operate android smart phone wide variety of people can use the application. This system will solve the various issues related to Mess service. To help and solve important problems of people implementation of Online Food Ordering system is done. It can be concluded that, based on the application: Orders are made easily by this system; Information needed in making order to customer is provided by the system. Receiving orders and modifying its data is possible through the application and it also helps admin in controlling all the Food system.

III.PROPOSED SYSTEM

The main goal of the meal ordering and delivery app is to start a business. These apps connect clients with restaurants in both directions, and they may place orders straight through the app. They can also taste and share their food in a group setting. Gone are the days when ordering dinner required searching for restaurant flyers and making a phone call. The gap has been bridged by apps, which have aided new and existing eateries in succeeding and keeping in touch with their clients.

Another significant goal of the app is to ensure that customers can make payments without stress. They follow a method and guide the user away from the food ordering app and onto the bank's website, where they may make the payment immediately. Most applications, on the other hand, offer a cash-on-delivery option, in which the consumer can pay the delivery boy directly when he arrives home with the food item.



IV. IMPLEMENTATION

Customer, Chef, and Delivery Boy sections are the three modules that make up the system. The chef and admin modules are designed for use in a restaurant setting, however the delivery boy and client sections can be used anywhere with an internet connection.

Customer Module

The customer module is an Android application with a graphical user interface that is easy to use. This module allows the customer to place an order for a meal. This module contains information on the meal to be ordered, such as the menu price, ingredients, and a graphic representation of the food items. Special dishes (for example, the Chef's Choice) might be readily updated and edited by the admin/manager at any moment and shown. This module may quickly integrate any personalisation requested by the consumer in the food item. The customer module runs on a tablet, and the application for it is written in Java using Eclipse and Android Studio.

Chef Module

Anyone who wants to manufacture their own food and sell it to customers can use this section to join up or login. Ensure that the information provided by the user is precise and comprehensive when registration, as these credentials will be cross-verified using the Firebase authentication mechanism. Chefs can access services such as uploading dishes, determining the price of their dishes, uploading the correct image, revising dish prices, and receiving order information by using this section. The chef will be contacted if a dish is requested. And he'll be able to accept or reject the order.

Delivery boy Module

Anyone interested in delivering meals to a customer's doorstep can register here, or login if they are already a member. The data should be entered in the correct format and be accurate. This person is only responsible for delivering the food to the customer's location and collecting payment if the customer has selected the pay-on-delivery option. The chef can only deliver an order after it has been allocated to him.

FEATURES OF PROPOSED SYSTEM

- Using a machine learning model to reduce food fraud
- There is no need for the client to interact with the establishment.
- The entire ordering process takes place online.
- The customer may provide any address with which he is comfortable.
- There is a reduction in the amount of time spent.
- People are not required to wait in lines, especially during peak hours.

V. RESULT AND DISCUSSION

The main goal of our project is to reduce the amount of fraud that some rare chefs commit, such as uploading the wrong image of their food or any mismatch between the name of the food item and the image of the food item. In this case, we developed a machine learning model to predict the food and display it on both the chef and the customer side, so that customers can be alerted while ordering food.
When it comes to the database, we chose the Firebase database since it delivers analytical data about our application as well as authentication services that make the database and users more safe.

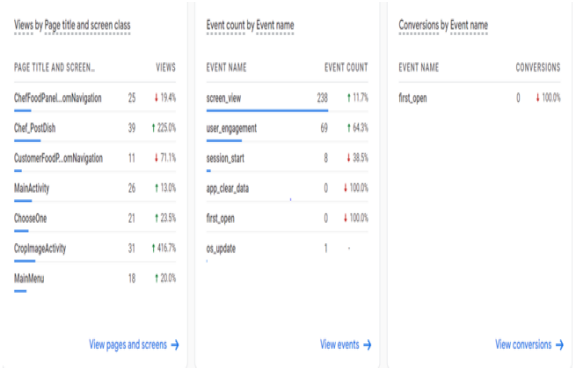


Fig. Analysis of application activity

Fig. User spending time

V. CONCLUSION

This application was created with the customer's convenience in mind. People nowadays do not have time to go to a restaurant, order food, pay for it, and then wait for further time to eventually receive their food due of their hectic lifestyles. This application is for the convenience of the consumer, allowing him to order meals from anywhere and have it delivered to the address he has provided. We'll sum up by noting that once implemented, this will be a really valuable tool that will save a lot of people time.

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