

Online Food Ordering Portal with Data Analytics

R P Rajeshwari¹, SG Vaibhav², DM Tejaswi³, Spurthi Kulkarni⁴, Harshith TJ⁵

Department of Computer Science and Engineering^{1,2,3,4,5}

Rao Bahadur Y Mahabaleswarappa Engineering College, Ballari, Karnataka, India

Affiliated to VTU Belagavi Karnataka India

Abstract: *Foodizz is an android application which acts as a platform between the restaurants who want to sell their food items online and the end users who want tasty and delicious food items to their doorstep. By the data gathered from the users we can set a proper analysis which helps small scale food business stalls to shift to that demanding place or place a new shop.*

Keywords: Online Food Ordering

I. INTRODUCTION

The Foodizz project aims to develop a delivery-oriented order management system that allows users to order from multiple restaurants simultaneously and helps the work of the delivery personnel in tracking the orders.

This is an optimized platform that is when the end user opens the application for the first time, he/she needs to register in which some basic information will be collected like Name, Phone number and location. Once the end user registers him/herself with our database they are good to go, they will be able to view a list of restaurants around them. They can select a restaurant of their choice and they will be redirected to an e-menu of that particular restaurant where one can see the number of food items that particular restaurant is offering. After that they can select food items they want to order, once they complete selecting, they will be redirected to the bill and payment section with different payment methods, they can select an appropriate payment method and complete the payment process. Once they are done with the payment process that particular restaurant will get details about the order and they will start preparing those food items. The delivery executive will be assigned for safe delivery of the order from the restaurant to the end user doorstep. In short, end users can get food items of their wish to their doorstep in just a few clicks.

As an admin view, one can view the analysis of different kinds of data gathered and interpreted from customers and restaurants. Here different kind of data include in a particular area which type of food item is ordered more, which restaurant is getting more orders, in which occasions the customers are ordering more, impact of discounts on customer's ordering habits and much more data would be gathered and with the help of MACHINE LEARNING all the data is analysed and displayed in the form of pie-charts, Bar graphs, etc

There are many applications for food ordering from local restaurants in particular cities. Some systems support group orders too, but these are usually restaurant-oriented: an order can only contain items requested from a single restaurant. This model works well where the delivery can be solved separately by the restaurants, but there are settlements (e.g. small towns) where multiple restaurants are working together with the same delivery company.

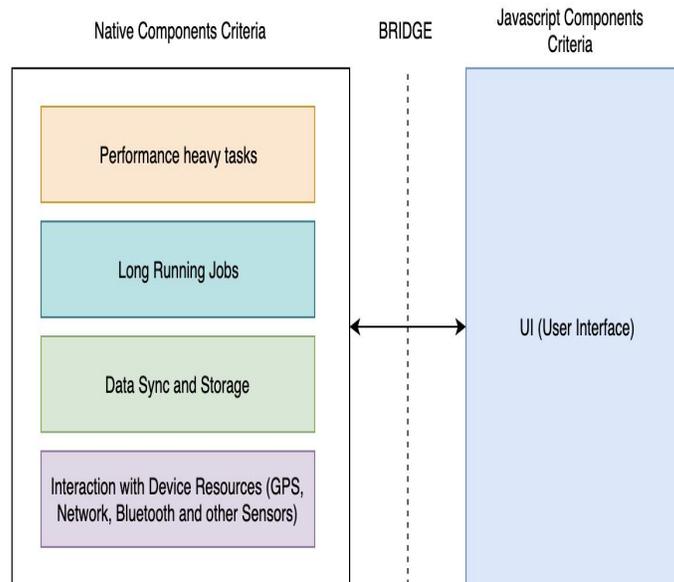
II. PROBLEM STATEMENT

One of the main problems in the existing system is lack of information provided for the end users due to which the restaurants would be placed in a wrong location which leads to decline of their sales and the customers would be struggling to find the food items they wish to order in the restaurants nearby. And another drawback is that there is no proper utilization of user's data present.

III. SOLUTION

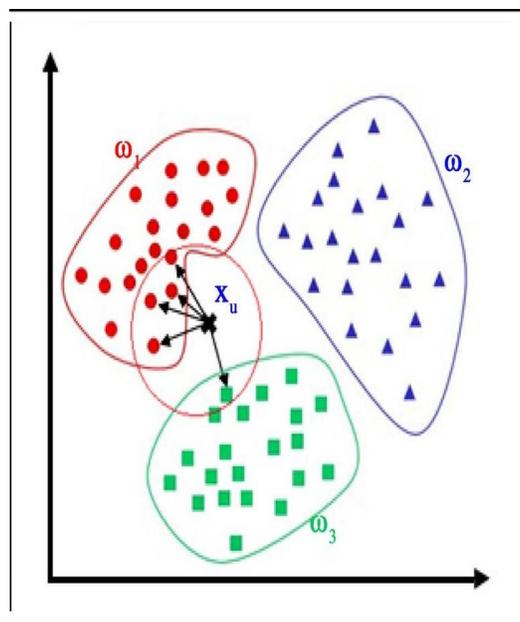
Online food ordering portal with Data analytics provides all the required information in the form of statistics which helps the restaurants owners to place their restaurants or cafeterias in proper location with the most selling food items in their menu list. For the customers it would help through the advertisements and favourite food items suggestions.

IV. ARCHITECTURE



V. K NEAREST NEIGHBOUR ALGORITHM

- K-Nearest Neighbor is one of the simplest Machine Learning algorithms based on Supervised Learning technique.
- KNN algorithm assumes the similarity between the new case/data and available cases and put the new case into the category that is most similar to the available categories.
- This means when new data appears then it can be easily classified into a well suite category by using KNN algorithm.
- K-NN is a non-parametric algorithm, which means it does not make any assumption on underlying data.



VI. FUNCTIONAL REQUIREMENTS AND NON-FUNCTIONAL REQUIREMENTS

6.1 Functional Requirements

Customer Requirements

Customer shall be able to view nearby restaurants (Specified Distance) and shall be able to choose their favorite restaurant or restaurant they wish to order food. Customer shall be able to view menu and categories and subcategories involved and will be able to order foods and add to cart and modify the cart. Customer shall be able to navigate between menu and can add items to cart and shall be able to finalize payment through various online payment methods or cash on delivery.

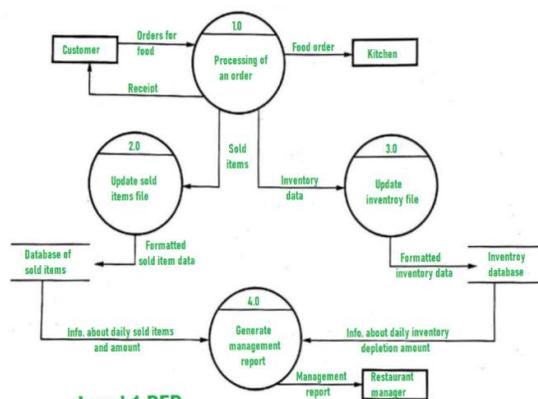
VII. RESTAURANT REQUIREMENTS:

Restaurant shall able to CRUD items from menu and shall be able to receive orders from customers and shall be able to view the orders which has been ordered by customers they can accept or cancel order depends upon the order received and availability of order. Restaurant shall be able to assign delivery boy to deliver order and they shall be able to receive acknowledgement from Delivery Boy, Restaurant shall be able to view the payment status. Restaurant shall able to receive notifications once order delivered.

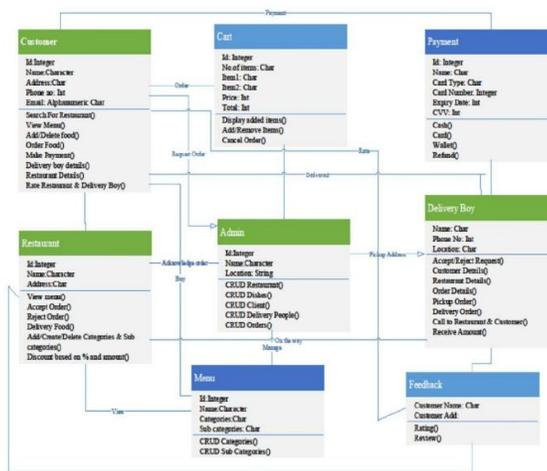
7.1 Compatibility and Security

The system shall able to use the app in different platforms like different versions of OS/Mobiles. The system shall able to do authentication process for login and payment through bankcard. The user can be able to do payment with secured bank payment mode. The system shall able to do encryption and decryption of data for password which is given by user for login.

Data Flow



Class Diagrams



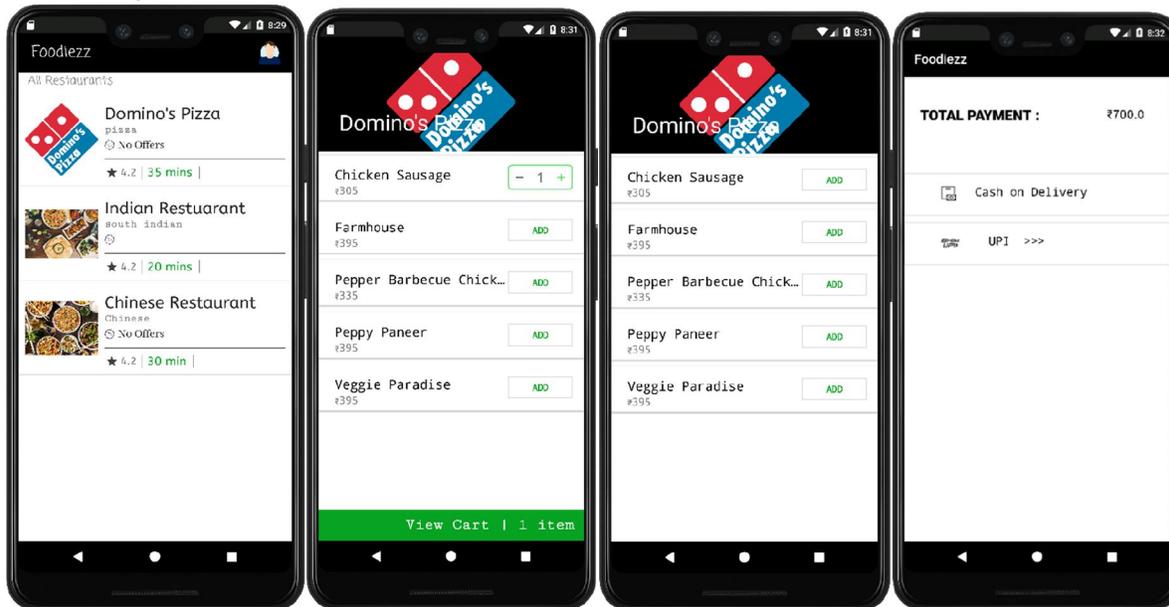
IX. FUNCTIONALITIES

The server has two main tasks: to serve the client requests and to communicate with the database. It is connected to a web and a mobile client application. The communication between the peers are implemented by a RESTful API. The data is stored in a database.

The users and the administrators can log in to the system through the user interface, with a Facebook account or using a registered username.

On the opening page of the application the menus are displayed along with the today’s special. The date can be changed, and other food categories can also be accessed from the menu. The food items can be added to the shopping cart. Users can modify the cart (add or delete). After specifying the delivery address and the phone number an order can be placed. The whole content of the shopping cart will be visible for each participant. State indicators are displayed and updated when the members finish their orders. When all the participants finished, the order can be placed. Additional features are also available for the clients: they can view the orders that are already submitted, the restaurants related to the delivery agent, they have the option to edit their profile, and System administrators can view the orders received on a selected date. They can manage (add, delete, modify) foods, restaurants, categories, user roles (the client role can be changed to delivery or administrator). The mobile application helps the delivery personnel to manage the incoming orders. Only users with delivery role can use the application. After a successful login, the orders are displayed for the current date. Both individual and group orders can be accepted partially, by selecting individual items from the corresponding list. Orders that have been already accepted can be viewed in a separate list, where the information required for the delivery is also displayed, including the customer’s phone number, which can be called directly from the application. The system can be notified after the completion of an accepted order.

Within the foodiz project a software system has been developed for helping restaurants and food delivery companies. Users can create individual or group orders through the web interface. The menus, restaurants, users, and orders can be managed by the administrators. The delivery process is supported by the Android application: the orders are immediately informed about new orders. They can accept deliveries receiving all the required information. And restaurant owners can directly manage their orders and customer will receive a message with the estimated time of delivery and Payments can be done through UPI or COD.



X. CONCLUSION

By the data gathered from the users we can set a proper analysis which helps small scale food business stalls to shift to that demanding place or place a new shop. Within the foodiezz App a system has been developed helping restaurants and clients. One of the things that helped us is that we have spent a lot of time in understanding and analyzing the demand in

particular areas. Thus, we make sure the partners move to the right locations. The data could also be used for advertisement etc.

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