

ECOFRIENDLY FOOD DELIVERY SYSTEM USING GPS SHORTEST PATH

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Abstract: The food industry is a complex, global collective of diverse that supplies most of the food consumed by the world's population. A Real-time online food ordering system for the customer is our proposed system. It overcomes the disadvantages of the traditional queueing system. Food can be ordered online in a hassle-free manner through our proposed system from restaurants. Also, the proposed system can recommend hotels, food, based on the ratings given by the customer, according to that the hotel staff will be informed for the improvements along with the quality. The payment for orders can be made online or pay-on-delivery as per customer choice. For security purpose we maintain separate accounts for each user by providing them an ID and a password.

General Terms: Internet, Cloud Computing.

Keywords: Online food ordering system, Internet of things, Smartphone, Dynamic Database Management System

I. INTRODUCTION

In the proposed food ordering system online food menu is set up and customers can easily place the order as per they like. Also tracking system is provided with the help of GPS for tracking orders to online customers. Motivation is needed for the designing of this system and this motivation is provided to us by restaurants. Another motivation is provided as the increasing use of smart phones by the customers, so that any users can easily use this system without any difficulties to get all the benefits and services.[1] Also one more motivation can be considered as the system will be designed to avoid users doing fatal errors, users can change their own profile, users can track their food items through GPS, users can provide feedback and recommendations and can give ratings, it will give appropriate feedbacks to Restaurants. Initially Input will be taken by the user using graphical user interface. The major attributes such as name, address, emailId, mobile no, other personal related values will give input to the dataset. The User/Customer's Order, Bill, Feedback and Recommendation will provide the output.[3]

II. PROBLEM STATEMENT

The online food ordering system sets up a food menu online and customers can easily place the order as per they like. Also, the online customers can easily track their orders. The management maintains customer's database, and improve existing food delivery service. Our proposed system also provides a feedback system in which user can rate the food items. Also, the proposed system enables restaurant owners to setup the system in wireless environment and update menu presentations easily.[6] The payment can be made online or cash or pay-on delivery system. For more secured ordering separate accounts are maintained for each user by providing them an ID and a password

III. LITERATURE SURVEY

In [1] an automated food ordering system is proposed which will keep track of user orders smartly. Basically, they implemented a food ordering system for different type of restaurants in which user will make order or make custom food by single click only. This system can be used on platforms like Android, PC's, smart phones etc. The front end was developed using HTML, Android and at the backend JavaScript was used and for connectivity ExpressJS is used.

In [2] Customer using a Smartphone is considered as a basic assumption for the system. When the customer approach to the restaurant, the saved order can be confirmed by touching the Smartphone. The list of selected preordered items shall be shown on the kitchen screen, and when confirmed, order slip shall be printed for further order processing. The solution provides easy and convenient way to select pre-order transaction form customers.

In [3] there was an attempt to design and implementation of digital dining in restaurants using android technology. This system was a basic dynamic database utility system which fetches all information from a centralized database. Efficiency and accuracy of restaurants as well as human errors were improved by this user-friendly application. Earlier drawbacks of automated food ordering systems were overcome by this system and it requires a one time investment for gadget.

In [4] an application of integration of hotel management systems by web services technology is presented. Ordering System Kitchen Order Ticket (KOT), Billing System, Customer Relationship Management system (CRM) are held together by the Digital Hotel Management. Add or expand of hotel software system in any size of hotel chains environment was possible with this solution.

In [5] research work aims to design and develop a wireless food ordering system in the restaurant. Technical operations of Wireless Ordering System (WOS) including systems architecture, function, limitations and recommendations were presented in this system. It was believed that with the increasing use of handheld device such as PDAs in restaurants, pervasive application will become an important tool for restaurants to improve the management aspect by minimizing human errors and by providing higher quality customer service.

In [6] 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 [7], 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 [8], 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 discussed in this paper. This system implements wireless data access to servers.

In Paper [9], this research works on efforts taken by restaurant owners also 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.

IV. PROPOSED SYSTEM

To overcome the limitations of above system, an Online Food Ordering System based on Internet of Things is proposed. It is a wireless food ordering system using android devices. Android devices have gained immense popularity and have revolutionized the use of mobile technology in the automation of routine task in wireless environment. Android is a Linux based operating system for mobile devices such as smartphones and tablets. To develop a reliable, convenient and accurate Food Ordering System is considered as a general Objective of the study. To design a system that can accommodate huge amount of orders at a time and automatically compute the bill is one of the key objectives. One of the important objective is to evaluate its performance and acceptability in terms of security, user-friendliness, accuracy and reliability. One of key objective is to improve the communication between the client and customers. In the proposed system it uses steel tiffins rather than plastic containers as plastic containers are hazardous to human health as well as environment.

As the delivery is allocated with a tiffin and an address where delivery boy has to locate the address in the GPS to deliver the tiffin. We are giving customers 12 hrs time to customers to return the tiffin to delivery boy.

While collecting the tiffins the delivery boy can relocate the address using a traker device that is embedded in steel tiffins.

The figure.1 represents the simple system architecture of the proposed system: -



Fig.1: System Architecture

V. Software Quality Attributes:

Our software has many quality attribute that are given below:-

- **Adaptability:** This software is adaptable by all users.
- **Availability:** This software is freely available to all users. The availability of the software is easy for everyone.
- **Maintainability:** After the deployment of the project if any error occurs then it can be easily maintained by the software developer.
- **Reliability:** The performance of the software is better which will increase the reliability of the Software.
- **User Friendly:** Since, the software is a GUI application; the output generated is much user friendly in its behavior.
- **Integrity:** Integrity refers to the extent to which access to software or data by unauthorized persons can be controlled.
- **Security:** Users are authenticated using many security phases so reliable security is provided.
- **Testability:** The software will be tested considering all the aspects.

VI. ARCHITECTURAL DESIGN

To overcome the limitations of above system, an Online Food Ordering System based on Internet of Things is proposed. It is a wireless food ordering system using android devices. Android device shavagain dimmense popularity and have revolutionized the use of mobile technology in the automation of routine task in wireless environment. Android is a Linux based operating system for mobile devices such as smart- phones and tablets. . One of the Objective is to design a system that is able to accommodate huge amount of orders at a time and automatically compute the bill. To evaluate its performance and acceptability in terms of security, user-friendliness, accuracy and reliability is an important objective. Delivery provides delivery services as well as marketing and order services, allowing it to provide food from restaurants that do not normally provide delivery services.

It makes this application much easier for users to use. In another word, it has a good usability. Environment safe online food ordering system that I am proposing here, greatly simplifies the ordering process for the customer. This system presents an interactive and up-to-date menu with all available options in an easy to use manner. Customer can choose one or more items to place an order which will be added in the Cart. Customer can view all the item details in the cart before checking out. At the end, customer gets order confirmation notification.

Service Consumer, Owner of Mess/Restaurant, and Employee of mess. Open the app and click on menu list users will see a drop- down list of possible menus that may be searched which shows the number of these types of restaurants. Then he/she will search and select restaurant or home-based food service based on his category and as well as service that is veg or non-veg. Here the main function is, in what pattern user will search the service so for that purpose a part

of Geo-Hashing Algorithm is used, and GPS system should be on. Person can have the facility to search service by location that is home location of the person is detected with GPS and according to selected option location of nearby service get searched. Another way for searching is by cost.

User can also search by rating. Search can be done by accepting distance from user in which user need to search and displaying service provider within that distance.

The system implementation contains 3 main users: -

Service Customer, Proprietor of Mess/Restaurant, and Worker of mess. When a person moved to new city he must find source for clean and superi or food, so he/she will explore and select restaurant or mess, or tiffin service based on his category.

The pattern in which user will search the services for a purpose GPS system should be on and a part of Geo Hashing Algorithm is used. Person can have the facility to search service by location that is home location of the person is detected with GPS and near by service get searched according to selected option location. Searching by cost is another way.

Search by rating is al so possibleb your system. List of service is given if matched by the user given ratings when the services that has ratings are checked with it. The search can be carried out by accepting distance from user where it needs to search and displaying service provider within a distance. It makes this application much easier for users to use.

In another word, it has a good usability. Environment safe online food ordering system that I am proposing here, greatly simplifies the ordering process for the customer. This system presents an interactive and up-to-date menu with all available options in an easy to use manner. Customer can choose one or more items to place an order which will be added in the Cart. Customer can view all the item details in the cart before checking out. At the end, customer gets order confirmation notification.

VII. REQUIREMENTS DEFINITIONS

- New Order: New Order is the main feature of the customer side application that will be used to make orders.
- Order History: Customer's order history is shown by this feature namely orderhistory.
- Restaurant Profile: Restaurant's profile is shown by this feature. Through this feature customer can make call to the restaurant directly.
- Order: Order list which has been done by each restaurant is shown by thisfeature.
- Menu: Menu list of each restaurant is shown by this feature. Through this feature admin can also alter each menu.
- Courier: Courier list of each restaurant is shown by this feature. Through this feature admin canal so amend each courier data.
- Customer: Customer list in this application is shown by this feature. Through this feature admin can also modify customer profile.

VIII. SYSTEM AND SOFTWAREDESIGN

Using the storyboard design, we construct the application design workflow for restaurant, customer, courier and admin side; the user experience design. The use case, class diagram, sequence diagram, activity diagram and database structure design are comprised in the Unified Modeling Language.

- Storyboard design: Designing the user interface is done by storyboard design which includes each interface description.
- User experience design: When interacting with the application, designing the totality of end user perception this design is used.

- UML design: The UML design contains use case to define the system function from each actor perspective then accomplished by explanation in use case narrative, to draw the process of each actor in diagram activity diagram is used, to draw object or class of system with its relationship class diagram is used and to draw the message interaction with its objects base on its order of time sequence diagram is used.
- Database structure design: By the result of class diagram, database structure design is made. Classes that need to be saved in database and its relationship are drawn by this design.

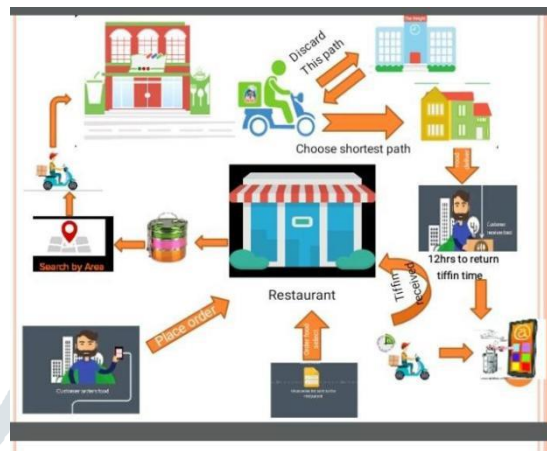


Fig.2:- Software and System Design

IX. RESULTS

The customer can track his order through the Tracking Interface provided in the GUI of the application. The restaurant/mess owner as well as customer can track the order in our system application. The pre view of the tracking system is shown below



Fig.3:- Results

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