

Online Food Ordering System

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Abstract— Online food ordering system is mainly designed primarily function for use in the food delivery industry. By this method different hotels, restaurants and cafés can increase their food orders and getting a proper platform for them to deliver the food. The customers can select any food at any quantity and order it from different sources and have various payment methods in it like COD, online transaction and many more with it. One of the major problems with existing application are that they are not providing that comfort and safety to the customer that we are giving them with this system.

Keywords: Online Food Ordering System, Food Delivery Industry

I. INTRODUCTION

An online food menu is set up by the proposed food ordering system and as per their will, customers can easily place the order. As we can see nowadays the online food delivery is important and most secure way to get the food. Most studies on online shopping focus on the implications and benefits of e-commerce. As we can see COVID-19 pandemic is spreading day by day and this leads to increase in online delivery of food as we need to maintain social distancing which will prevent us from getting infected. Usually, people used to find this way very convenient, time saving and cost saving. Online portals provide some offers and free delivery to customers. Another motivation can be considered as the increase in the use of smart phones by the customers, so that any user of this system get all services of the system. As we are living in the 21st Century where digital world is gaining a huge amount of success by providing ground breaking technologies like Machine Learning and Artificial Intelligence and Web technologies.

II. BACKGROUND DESCRIPTIONS -

Before beginning the conceptual analysis with literature review, a broader background discussion is needed. Practically, the broader background constitutes: e-commerce platforms, consumer preferences and attitudes, marketing approaches, packaging and delivery considerations. By using the online ordering, we can increase the electronic payment methods more often.

III. LITERATURE REVIEW –

Online food ordering web app provide user the convenience of ordering food online from the comfort of their home. The user gets the feature of time independence services, as they can order at any hour. The industry of e-commerce has expanded a lot through past years. The effect of online food ordering services has benefitted not only the famous restaurants and hotels, but they have been helpful to small scale food vendors. These services played a great role in the pandemic year of 2019-2020, they provided food services

when it was dangerous for people to go out. This automated food ordering system keep track of user orders smartly. This makes user to order food by one click on any device like tablet, PC's, mobile phone etc.

There was an attempt to design and implementation of digital dining in restaurants using web technology. This system was a basic dynamic database utility system which fetches all information from a centralized database. This application improved the accuracy and efficiency of restaurants as well as human errors. Earlier drawbacks of automated food ordering systems were overcome by this system and it requires a onetime investment for gadgets.

After studying about these different web apps, we found there was a room for improvement and update, to provide user with new interface and services. In this web app we are using latest web technologies to provide a fast and responsive behavior. We are using basic web-based languages like HTML and CSS and programming languages like JavaScript, also we used frameworks of JavaScript like NodeJS and ExpressJS. We designed the UI using Figma tool, using the outline we converted our design into working model. This web app also contains database and latest APIs related to online food ordering system.

Our web app will contain every covid related details both about the restaurant and delivery person. We would provide user to pick restaurant based on both the food quality and hygiene. This would be revolutionary in the field of online food ordering system. Also, our smart search algorithm will provide results related to users' preference. We will also provide subscription-based ordering to provide smart meals. For example: people who are doing gym have a different diet routine than a normal person, bachelors who are away from home and are living on their own etc.

Customer using a Smartphone is considered as a basic assumption for the system. The list of selected pre-ordered 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.

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.

Bear in mind, though, that this increased control may not be attractive to all customers, particularly those who desire personal contact. In designing a self-service system, one must focus on the issue of customer control, since your customers will most probably be using the system without the presence of an employee. Perceived convenience of a self-service system also leads to an increase in both adoption and

satisfaction. In this instance, the definition of convenience is related primarily to access convenience and transaction convenience.

The downside of self-service technology occurs with people who have technology anxiety and those who need human interaction. Customers who evaluate service quality based on interactions with employees won't want to use self-service ordering. Similarly, customers who are uncomfortable with technology may be reluctant to try an electronic self-service site because they may be afraid of getting tangled up in the technology.

These services are growing exponentially as new competitors are launching each year. To fully utilize the potential of these services we need to study and perform on the user need and their preference. Ordering food online is one thing but making it more effective is another level of achievement.

IV. PROPOSED METHODOLOGY

This online application enables the end users to register to the system online, select the food items of their choice from the menu list, and order food online.

Also, the payment can be made through online made or at the time of home delivery depending upon the customer's choice and convenience. The selection made by the customers will be available to the hotel reception or to the person handling work assignment.

Now this same person will assign the orders to the specialist chef to be completed within a fixed duration of time.

As soon as the chef prepares the food, the later person forwards the parcels to the delivery persons assigned with the location and customer identity of the customer along with the bill status.

Also, there will be chances that the waiters are unavailable as they are busy in handling others, so the customer can directly order the food to the kitchen online by using this application, by checking the seat availability in the restaurant.

V. SYSTEM AND SOFTWARE DESIGN

A. Approaches of the Project:

1) Stage 1. Discovery and research of the project

In this first we see the working of the food delivery app by reading some of the article online and get brief use of the operations used in food delivery app.

2) Stage 2. Wireframes and prototypes creation

First, we made the UI of the web app on FIGMA and by using this app we get the basic outlook and the working of the app. Then, we create the HTML structure of the web page and then we styled it with CSS and CSS pre-processor known as SASS.

After getting the basic frame of the project, we integrated some JavaScript libraries to make web page more dynamic and user interactive.

3) Stage 3. Design

In the designing part, we first create the frontend using the basic design format which are used on most of the web app

these days and we used the latest tools for the design phase of the web page.

Using the star UML app we create the use case diagram, activity diagram, sequence and for the database part we create ER diagram.

4) Stage 4. Providing feedback to users

According to this rule, we made all of our feedback messages specific, understandable and professional. We also displayed messages on top of the screen and follow consistency every time.

VI. IMPLEMENTATION OF MODULES: -

We divided our project into several modules and worked on them individually. Each person was assigned to complete certain percentage of a module in a time limit and was responsible to upload it as soon as it was completed. The description of the module are given below: -

- 1) We complete the design module using FIGMA and Adobe XD. We worked on giving the best user interface and user experience, using the latest tool in FIGMA we corrected the contrast of our web app, size of the fonts, picture quality, latest UI format etc. This design phase helped us in development of our basic HTML code.
- 2) We designed the HTML skeleton and styled with CSS. We used CSS pre-processor SASS to develop our style sheet quickly. This helped us in developing our first web page which was very friendly to the user.
- 3) The next part was to make the web app dynamic and responsive. This was achieved JavaScript and its libraries; we used several libraries to make it dynamic and control the responsiveness. We also gave the web app some interesting animations like parallax effect and smooth scroll animation.
- 4) The ER diagram tells us about the database part that how we create the database, which entity and attributes should be there and with the same other UML diagrams tells about the workflow of the project.

VII. TECHNOLOGIES USED -

A. Front End

1) HTML (HyperText Markup Language): -

HTML is the foundation of web pages; it is used for webpage development by structuring websites and web apps

It is used to design web pages using a markup language, this language is used to annotate (make notes for the computer) text so that a machine can understand it and manipulate text accordingly. Most markup languages (e.g., HTML) are human-readable. The language uses tags to define what manipulation has to be done on the text.

Features of HTML:

- It is easy to learn and easy to use.
- It is platform-independent.
- Images, videos, and audio can be added to a web page.
- Hypertext can be added to the text.
- It is a markup language.

Advantages: -

- HTML is used to build websites.
- It is supported by all browsers.

- It can be integrated with other languages like CSS, JavaScript, etc.

2) CSS (Cascading Style Sheets): -

Cascading Style Sheets, referred to as CSS, is a simple language intended to make web pages presentable. CSS allows you to apply styles to web pages. More importantly, CSS enables you to do this independent of the HTML that makes up each web page.

Reason for using CSS:

- CSS saves time: You can write CSS once and reuse the same sheet in multiple HTML pages.
- Easy Maintenance: To make a global change simply change the style, and all elements in all the webpages will be updated automatically.
- Search Engines: CSS is considered a clean coding technique, which means search engines won't have to struggle to "read" its content.
- Superior styles to HTML: CSS has a much wider array of attributes than HTML, so you can give a far better look to your HTML page in comparison to HTML attributes.
- Offline Browsing: CSS can store web applications locally with the help of an offline cache. Using this we can view offline websites.
- CSS is added to HTML pages to format the document according to information in the style sheet. There are three ways to insert CSS in HTML documents.

3) JavaScript: -

JavaScript is the most popular lightweight, interpreted compiled programming language, It is well-known for the development of web pages, many non-browser environments also use it. JavaScript can be used for Client-side developments as well as Server-side developments.

Applications of JavaScript -

JavaScript is a widely-used programming language. Given below are some domains/products that can be built using JavaScript:

- Websites: JavaScript helps us to add behavior of our website. It helps users to interact with the website. For e.g., clicking on buttons, saving details, uploading details on the website, etc.
- Web Servers: We can make robust server applications using JavaScript. To be precise we use JavaScript frameworks like Node.js and Express.js to build these servers.
- Game Development: In Game Development industry, JavaScript is used widely. With the addition of HTML5 Canvas, it's now possible to make 2D and 3D games in JavaScript very efficiently.

Need of JavaScript -

- No need of compilers: Since JavaScript is an interpreted language, therefore it does not need any compiler for compilations.
- Used both Client and Server-side: Earlier JavaScript was used to build client-side applications only, but with the evolution of its frameworks namely Node.js and Express.js, it is now widely used for building server-side applications too.
- Helps to build a complete solution: As we saw, JavaScript is widely used in both client and server-

side applications, therefore it helps us to build an end-to-end solution to a given problem.

- Used everywhere: JavaScript is so loved because it can be used anywhere. It can be used to develop websites, games or mobile apps, etc.

B. Back End

MongoDB is a NOSQL database, it is an open-source document-oriented database

MongoDB currently provides official driver support for all popular programming languages like C, C++, Rust, C#, Java, Node.js, Perl, PHP, Python, Ruby, Scala, Go, and Erlang, MongoDB has been adopted as backend software by a number of major websites and services including EA, Cisco, Shutterfly, Adobe, Ericsson, Craigslist, eBay, and Foursquare.

Where do we use MongoDB

MongoDB is preferred over RDBMS in the following scenarios:

- Big Data: If you have huge amount of data to be stored in tables, think of MongoDB before RDBMS databases. MongoDB has built-in solution for partitioning and sharding your database.
- Unstable Schema: Adding a new column in RDBMS is hard whereas MongoDB is schema-less. Adding a new field does not affect old documents and will be very easy.
- Distributed data Since multiple copies of data are stored across different servers, recovery of data is instant and safe even if there is a hardware failure.

1) Machine Learning: -

Machine learning (ML) is the study of computer algorithms that can improve automatically through experience and by the use of data... Machine learning algorithms build a model based on sample data, known as training data, in order to make predictions or decisions without being explicitly programmed to do so.

2) Classification

Classification is the task of "classifying things" into sub-categories. But, by a machine! If that doesn't sound like much, imagine your computer being able to differentiate between you and a stranger. Between a potato and a tomato. Between an A grade and an F

3) Practical Applications of Classification -

- Google's self-driving car uses deep learning-enabled classification techniques which enables it to detect and classify obstacles.
- Spam E-mail filtering is one of the most widespread and well-recognized uses of Classification techniques.
- Detecting Health Problems, Facial Recognition, Speech Recognition, Object Detection, Sentiment Analysis all use Classification at their core.

4) Clustering -

It is basically a type of unsupervised learning method. An unsupervised learning method is a method in which we draw references from datasets consisting of input data without labeled responses. Generally, it is used as a process to find meaningful structure, explanatory underlying processes,

generative features, and groupings inherent in a set of examples.

Applications of Clustering in different fields -

- Marketing: It can be used to characterize & discover customer segments for marketing purposes.
- Biology: It can be used for classification among different species of plants and animals.
- Libraries: It is used in clustering different books on the basis of topics and information.
- Insurance: It is used to acknowledge the customers, their policies and identifying the frauds.

VIII. RESULT

After the order is placed, the end user will be capable of seeing the status of order placed along with its unique ID on the provided interface.

The end customer who has placed the order can see and track his/her order using the interface provided in the application Graphical User Interface for the tracking purpose.

The hotel / restaurant owner and the end customer can view and track the order in provided application's system.

After the order is delivered to the user, they will be asked to give their feedback. They may skip it for later purpose but they are given a choice to give their inputs regarding the delivery and the food delivered.

IX. CONCLUSION

The application is solely drew on end user's requirement and is centered towards the same. On condition that individuals know how to utilize a web browser, they can easily use this application.

This arrangement will resolve the various subjects related to Mess/Tiffin system. To assist, help and solve essential queries of people implementation and enactment of Online Food Ordering system is done.

This can be deduced that, based on the web application: Orders are produced easily by this system. Knowledge, details and figures needed in making order to end customer is given by the system. Collecting orders and altering its data is attainable through the application and it also assists admin in controlling and supervising all the Food system.

It also produces the searching provision based on numerous the Item Category, Delivery Address, Food, Customer. This web application also tracks all the details about the Delivery

The transactions are executed in off-line/ connectionless mode, hence on-line data for Item Category, Food capture and modification is not possible It covers all the detailed information and knowledge of Order, Customer, Food, etc.

This application also deals with the food information and displays the Item Category along with its description. This also presents the Delivery Address

It delivers the report on Food, Category, Customer along with the filter reports on Shopping Cart, Delivery Address, Order, etc.

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