Food Delivery System

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Abstract—The"Food Delivery System"has been developed to override the problems prevailing in the practicing manual system. This software is supported to eliminate and, in some cases, reduce the hardships faced by this existing system. Moreover, this system is designed for the particular need of the company to carry out operations smoothly and effectively. The latest feature introduced in it is the sharing cart feature using which the application is reduced as much as possible to avoid errors while entering the data. It also provides an error message while entering invalid data. No formal knowledge is needed for the user to use this system. Thus, by this all, it proves it is user-friendly. Online Food Ordering System, as described above, can lead to error-free, secure, reliable, and fast management systems. It can assist the user to concentrate on their other activities rather than concentrate on the record-keeping. Thus, it will help an organization in better utilization of resources.

Keywords — Food Delivery, Online, Orders

I. *Introduction*

The new business models generated by O2O have drastically changed the food and beverage industry's consumption patterns and market growth. Instead of going out to eat physically, many students and professional workers order food through the online delivery services, and this demand leads to the rapid growth of food delivery services.Food delivery services have existed for a long time, but were limited only traditionally to takeaway restaurants. The workers who deliver the food for these restaurants are usually direct-hires, similar to the service staff working directly in the restaurants. However, this work structure has changed significantly. Food delivery people working for online platforms or agency companies are now receiving food orders directly from mobile apps and delivering food from restaurants into the hands of consumers. Restaurants now have the golden opportunity to expand beyond their limited capacity and expand in the city.

The apps act simultaneously and play multiple roles as transaction mediums and organize restaurants, customers, and delivery companies together. The delivery apps and websites have helped food delivery services to expand and become an industry. Particularly, due to lower cost in labor and high metropolitan population concentration,the food delivery platform system is well developed in the world. In this food website we bring the facility to choose your friends and add their favorites in the same cart simultaneously in the same cart.

II. *Literature Review*

We have read a lot of research papers based on the content of our field and project.[1,2,5,7] We came across various problems which were faced in the early food delivery systems which were run only by the restaurants themselves privately but over the years the enhancements in the people using various internet platforms have emerged as the game changer in the field of delivery of food of whichever restaurant located in whichever locality. The online food delivery system increased even with the sharper rate during the covid-19 people were unable to get out of their home and visit restaurants. There was a sudden exponential rise among the people referring food deliveries to their home through various apps like swiggy Zomato which led to a huge increase in the profits of such food delivery companies because that was the safest measure of eating food from a restaurant during this pandemic your people prefer to keep themselves safe and sound and also enjoy the delicious cuisine of various restaurants

According to the reports in 2017 42% of the orders related to food delivery were online through websites and apps.

In modern generation with the increasing trend of online payment in India through the initiatives of honorable Prime Minister Narendra Modi through the scheme of Digital India India is ranked no.1 in the amount of transaction of money done through online mode that was nearly ₹7442 crore this is also one of the major reason for the boost in the online food delivery system but those who can't also have the feature to make payment through cash as well.

There are certain advantages of food delivery system mainly:

1.Always open for service 24/7
2.Time Saving
3.Delivery at your footstep
4.Easy Communication
5.Easy Payments
6.Customer reach increases etc.

With Certain advantages comes few disadvantages as well:

1. Increase in health issues as eating frequent fast foods.
2.Sometimes customers have to wait for a long time .
3.Food can get cold due to late deliveries.

Food Delivery System is about the connection of Restaurants with the customers for that we should have a good database connection of the details of the customers and the food restaurants as well .

The food websites are also promoting a particular section for the fitness freaks where

they can have an option of ordering healthy food and not the fast foods Usually healthy foods includes the salads and non oily food which is good for the health so the websites like Zomato swiggy are now promoting and Advertising separate section in their websites on the applications especially for the specially for those who are health conscious and they avoid eating oily or street food.

[3,8]Nowadays most of the web applications are basically designed to various Technologies using a term known as 'stack'. basically the static are of two types that are MEAN and MERN. MEAN Stands for mongo DB Express JS Angular JS and node JS whereas modern stands for the use of mongo DB Express JS react and node JS. Using this tag is beneficial than using the basic html or CSS discuss these contribute in improving the efficiency and reducing the cost of of the website or the application In today's what the customers believe in using the websites which are more rich in User experience and gives treat to their eyes in terms of visual and features the of we prefer using the Technologies like react and Angular JS which provides more facilities of making our websites look rich in terms of visual and providing more facilities and not and also fascinates the customers to visit the websites again and again By providing dynamic features. Two ways resources it was found that for setting up big enterprise websites the basic standard languages like HTML CSS and JavaScript Were not proven to be sufficient for a long run therefore using these stack Technologies proved out to be an exact short solution to meet the demands of today's web audience.

The mean stack is a combination of over open source components all together which includes mongo DB Express JS Angular JS and node JS. Angular JS is actually JavaScript based open source frontend application which is maintained by Google if one wants to create Complex applications he can prefer using AngularJS various advantages of AngularJS are that it is dynamic in terms of data binding It helps the website application to fetch the data from the server quickly it also create deep links. various disadvantages of AngularJS are that sometimes it could be Complex and mastering angular there sometimes is not proven to be that simple as it seems to look like it has got a very poor scalability also.

Express JS is a Framework for node.js it provides many features that can make a website run fast and easy it is designed basically using note this module various advantages of Express JSR it is very easy to configure and customize it can support error handling various databases like my SQL mongo DB can easily Get Connected using Express JS.

nodeJS is a JavaScript Runtime environment that is basically used for the backend purpose of a website. The advantages of nodeJS are it is very fast, it supports real time development and enhances the overall productivity of a website. It is open source so anyone can use it and it is scalable.

various disadvantages related to node JS han it showcases a poor performance when it comes to large scale applications and it also has Comparebly poor performance with relational databases.

Open source database language which is a kind of no SQL it does not uses rows and columns to store data at their uses ki is various advantages of mongo DB are that it uses less schema,joining two tables is easier, it is very highly scalable it supports nested or deep queries.Various disadvantages of mongo DB it is less flexible it is used in size at the moment of mapreduce it is not fast.

Mon is a tool that helps in building up Universal applications using mongo Express

react and node JS on comparing modern and mean the only difference which comes is between react and angular react is a JS library which is used for building up UI it is maintained by Facebook Instagram and various other community of developers it enables in loading a data without refreshing the page thereby enabling the high speed of the app providing better surfing experience.

various advantages of react JS are it provides a better performance it has got a One Direction of data flow and not multi direction easy to use. shortcomings are the limitations of react JS are it need some extra tools like external support for web application.

Many developers believe that mean stack is not a very good option for building a web applications and mostly they prefer using modern stock the basic differences between angular and react are in terms of performance react is arguably the best in compared to Angular JS in terms of architecture react is more flexible since it gives the Independence to the developer to decide how the app is going to be organized it can you make the code harder to maintain as compared to Angular JS according to the latest trends angular was in trend until 2014 but in today's time majority of the people are shifting their interest towards using react over Angular JS.

There are various measures according to which a developer can decide which stack must be used for making their websites. various measure are

Security

Latency

Code Abstraction

Performance

Table below showcase various measures on the basis of which React and Angular are compared:

MEAN STACK VERSUS MERN STACK		
Attribute	MEAN	MERN
Churn	Reduced	High
Tooling	Low	High
Design	JS in HTML	JS only
JS Fatigue	Less	More
DOM	Regular	Virtual
Complexity	High	Low
Packaging	Weak	Strong
Abstraction	Weak	Strong
Failure	Run time	Compile time

[4]When we compared bout the front end tools like react in Angular JS there is also a comparison between the back and tools that are mongo DB and my SQL mongoDB is a non relational database while my SQL is a relational database since nowadays most applications have thousands of users which are using the website simultaneously one needs to execute more than one operation at a time Therefore for this purpose mongoDB database fits very well typically when we have got thousands of users which is MongoDB performs operation parallel in a fast pace.

After conducting various tests it was interpreted the the query which were generated using mongo DB takes lower time in execution as compared to the queries which were written in my SQL therefore we can choose mongoDB instead of my SQL when the application has got thousands or lacs of users visiting the website and are performing various operations simultaneous because mongo DB can handle large amount of data much sufficiently as compared to my SQL.

switching from relational database to non relational database can be challenging but it completely depends on the developer which database he or she should prefer for developing his application or a website.
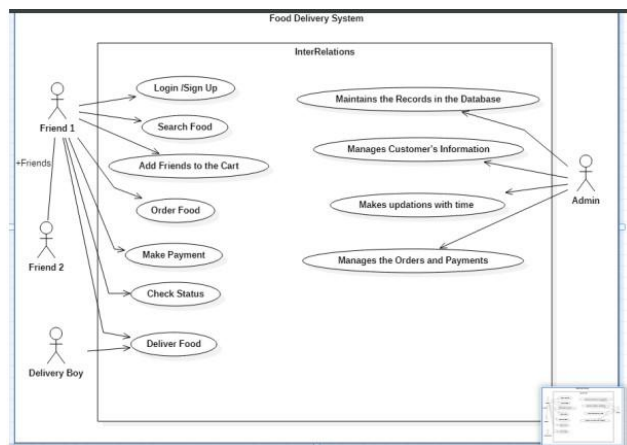
[9]Delivery routing Optimisation is one of the most important factor that in food delivery website or an application company works on that this they should use certain algorithm through which they can reach to their destination in the minimum amount of time

Most commonly used algorithm is traveling salesman problem (TSP) But now since Google Map itself prefers route Optimisation most of the websites can use Google maps in order to Tu to track the location and deliver the food this saves time in working on optimizing any algorithm based on finding the shortest route to reach the destination.

III. Problem Statement

The manual method of taking the orders from different customers at the same time and delivering them at the same time is tough therefore we have tried to make a common cart where users can add their friends in the common cart and then all of them can add their cuisine in the same card and can order it all together at once. Sometimes it is also difficult to track the the best optimized route to deliver the food order so we may need such an algorithm that helps in improving and providing the best shortest route possible to the one who delivers.
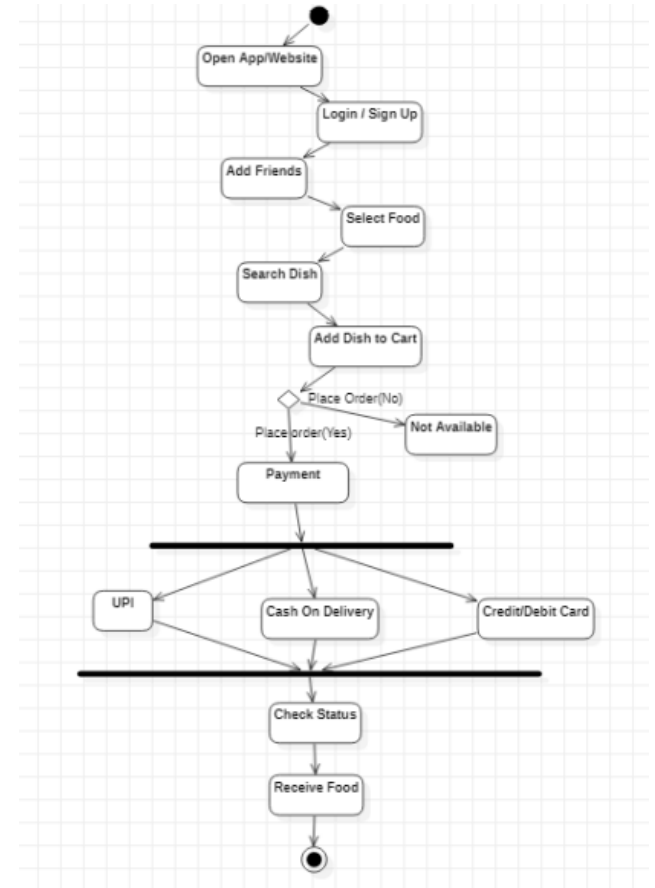
IV Problem Solution

The above use case diagram Explains how a user can login or sign up in the system,can search for the food, can add friends to the cart simultaneously, many users can add their food

in the cart and can order the food and also can make the payment.

The below diagram describes about the flow of the process in the project through the activity state diagram

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VI. Conclusion

The conclusion of the proposed system is based on the users need and is user centric the system is developed considering all the issues which were related to the users keeping all the problems in mind this website has been made a wide range of people can use this website on various devices like laptop some smartphones the various issues related to mess and tiffin services which have been resolved specially for college students in this website The food web applications made for restaurant and mess can help rest friends and mess in receiving Orders and modifying the data and it is also made for admin so that it help admin and controlling all the food systems maintaining the data of the customers as well as the restaurant has been made easier and possible show the latest technologies which were used in making this website those were the monster truck such websites helps the restaurants as well as the running in various locations of the country in increasing their revenue as they are available 24/7 despite having lower setting capacity one can continue dealing with more and more number of customers just by delivering their orders to directly to their home rather than making them visit their restaurants.

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