DEVELOPMENT OF CROSS-PLATFORM ONLINE FOOD ORDERING MOBILE APPLICATION

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Abstract: The proposed system is a cross platform online food ordering system which allows user to order food from various restaurants in preferred location. Customers don't have to wait for hours in queue and travel miles when they can get desired food from the desired restaurant in door steps. It can be achieved through this mobile app. This app is built using react-native which is compatible for both iOS and android. This app provides list of restaurants or cafes for every location. User needs to search for their preferred location and can order food from their preferred restaurant or cafe. Different icons for different types of restaurants are displayed to distinguish between restaurants, cafes, lounges. Restaurants status whether it is currently running or is it closed is also made visible to customer. Favorite section has built to allow users to add their favorite restaurants or cafe to this section which helps customers search their restaurant at ease when visit back to the app. Users can also search restaurants from maps. All the restaurant and location data are collected through google maps API

Keywords: Food ordering, mobile app, iOS, android, Cross platform.

I. INTRODUCTION

Improvement in technology lead to rapid changes in every business sector. Mobile applications are in the top priority as they have become easy to use and rapid rise in development of smartphone sector. Mainly everything is digitalized now a days hence food ordering or delivering business do need mobile application. And above all that, users have gained more interest in digital delivery application [2].

Development in technology also lead to ease in developing mobile application. There are many frame work and tools available to develop apps. Though there are not many advantages of cross platform compared to native but cross platform apps will save both time and money. There will no difference between performance of cross platform and native app unless the app is very complex. In this proposed system a cross platform tool React native is used to develop the application which is compatible for both android and iOS.

The main aim of this proposed system is to improve food ordering service and make customers easy to order food online. This app doesn't only have list of restaurants but also has different types of food services like café, lounge, mess and more and they can differ using icons. Customers will also get to know whether the restaurant is open or closed and closed restaurants will not display the menu. Google firebase is used to add authentication. Users can register and login to app using this authentication. To make searching restaurants easier this app also allows users to search restaurants using map, iOS use apple maps while android use google maps. There is also favorite feature to users add their favorite restaurants or café which will be easy to find out next time when they login to app.

II. LITERATURE SURVEY

In [1] Adithya R et al. have developed an online food ordering system restaurants and mess for android device on the goal of improving the method of food ordering. Their proposed system had online menu for food and tracking facility of their order. Users can feedback or ratings on their orders. They also built recommendation system to recommend hotels and restaurants using geo hash algorithm. Likewise, [2,3] is also a food ordering application where Neel Shah et al. have also developed an online local system for local vendors such as hawkers, restaurants, tiffin services and more. They allowed local vendors to register online their restaurant or food center and customer order through online from their nearby restaurant. Their system also had recommendation for health issue people. Android studio, ASP.net and SQL server were used to build the system and Lim Kai Yee et.al have developed food ordering app with calorie count feature. They used Android studio and java for developing the app. The calorie count feature of them as helped users to track

their daily calorie intake. Application even has rating or feedback feature. While in [4] Anjali Chouhan et al. talks about users interests on digital food delivery applications. They talk about consumers facing factors during ordering through these apps, consumer needs, satisfaction in online food service and online destination in consumer mind. They helped to service providers get idea on consumers need and work based on that. In [5] N. Thamaraiselvan et al. has stated the result of the study on how digital food delivery application are grown over the years and how it is impacted food market over the years in India. They have listed the growth drivers, business portfolio, technology in power, new trends and challenges in food industry. They also spoke about impact of digital food delivery apps on the profit of food industry, and their growth rate. In [6] Jyotishman Das talks about perception and expectation of consumer towards online food services. This research aims on the analysis and study of data collected from users who are using these services. It also states about various online food services portal. This survey was based on 153 responses hence they used non probability sampling method.

In [7] Anuj Pal Kapoor et al. aims to investigate OFAs - online food additives by proposing and rigorously evaluating a mobile app attribute modification model, to assess how mobile app features for online food compilers influence consumer purchasing decision and lead to conversions. It was based on research of 350 responses. In [8] Jiseon Ahn has pointed out customer experiences in compliant behaviour, and an important growing area for the tourism industry is explored. He talks about how the impact of perceived customer satisfaction and public presence in a positive attitude is obtained using data collected from online research based on good psychological and social service theory. While in [9] Sube Singh et al. made a study on how effect of covid 19 and lockdown is impacted on food supply chain. They have built a simulation model that can help build a strong and responsive food supply chain to meet a wide range of needs, and further assist in providing decision-making support for re-driving vehicles in terms of travel limits. [10] will provide further insights into the emerging technologies emerging in the restaurant industry and the strategies followed by the online food start-ups Zomato, Swiggy. They also state about various services offered by the apps that make consumers happy and satisfied. Their study conclude that consumers are happier on door step delivery and factors like reviews, word of mouth and bad experience affect online food delivery apps. Anupriya Saxena in [11] listed perfectives, opinions on cross platform mobile apps by emphasizing the popularity, discovery, and emerging issues related to the use of technology development tools. This survey is based on 101 responses and as a result of these responses some of the cross platform found to first choice for these responders. This study also states problem reported by responders on performance, framework and experience on different application development tools. In [12,13] Nikita Shevtsiv and Mika Kuitunen made research to determine the best methods and tools for the developing cross platform mobile application. They state all the advantages and disadvantages, working tools of React Native. They conclude that React Native provides high quality mobile development and can greatly increase the speed of development of mobile applications. React Native has critical developmental outcomes as it is always popular among application developers. In small systems the difference between the two is not revealed and in the most complex systems cross-platform technology does not really have many advantages compared to traditional technologies but cross platform has its own advantage.

III. METHODOLOGY

Methodology is a process or technique used to identify and analyze information on a topic. It allows to evaluate overall stability of the research. This section involves all the basic principles that govern the process of a program, on the other hand it is a systematic process of group work. Water fall model is used to produce this food ordering mobile application where development stage is divided into several stages. It logically will move on to next phase only after completion of previous phase. User/customer, restaurant and location are the three main modules of food ordering system. Location module is necessary to display restaurants in map. The process starts with user register/logging in to the app. Authentication is verified in the firebase database. After successful login the restaurant screen is displayed and user can search the restaurant using location. When the customer clicks on the restaurant he/she will have access to the menu of the restaurant. Then he/she will add the meals to the cart. In the cart all the order details with total bill will be displayed to the customer. He/she enters his details and process the order. The below diagram represents the system architecture of the proposed system. For data collection in this study the main source is google Maps API. All the information regarding restaurants, locations (latitude and longitude information) has been collected using Google maps API.
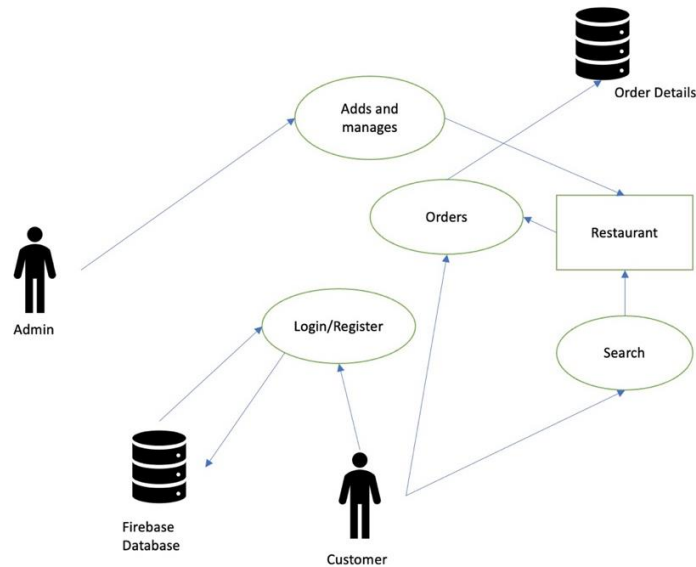
Fig. 1 System Architecture

IV.   PROPOSED SYSTEM

Majority of existing food ordering systems are only focused on Android. To give access to both iOS and android users this online food ordering system is built using react-native. React native is a cross-platform tool used to develop application for both iOS and android. To build applications using react native one doesn't need the knowledge of java or kotlin for android or swift or objective c for iOS. Knowledge on fundamental react, basics of HTML and CSS are enough [12]. The main objective of this study is to develop the application that will satisfy users or customers in all of the percept without compromising security, performance and accuracy. It will be difficult to search for restaurants especially when someone is new to that location. To make their job easier this system provides easy searching for restaurants or cafes. One has to just type in their location and will get the list of all the restaurants. To make users job much more easier restaurants can be viewed on the maps also. All the information of the restaurant or cafe will be available such as ratings, is it closed or opened, type. Hence customers can choose the restaurant of their preference and order from that restaurant. Users can register and can be logged in to the app. For the authentication google firebase is used. Users can also add their favorite restaurants to favorites section by clicking heart icon on top right corner of restaurant card. And these favorites can be viewed by clicking heart icon on the search bar. Registering will be important to retrieve favorites and checkout data of user when they visit back to the app. Customers will be able to see the menu of the restaurant when they click on restaurant card. Menu compromises of breakfast, lunch, dinner and drinks. They select the preferred meal of required quantity and add it to cart. In the cart screen they complete the order by providing their details like address, phone number.
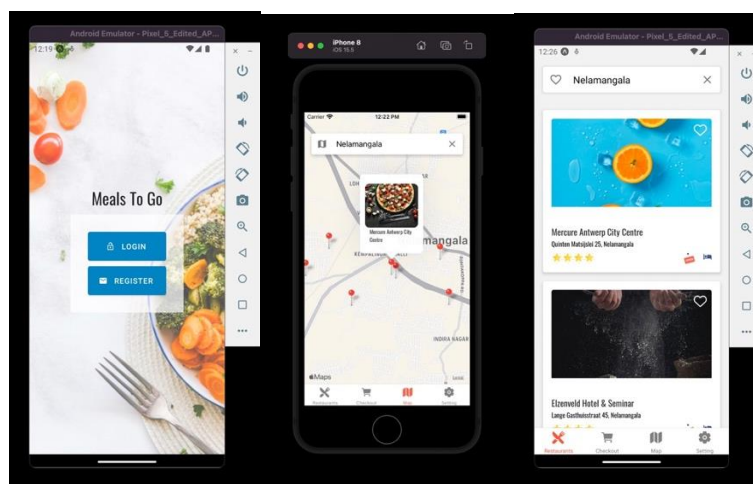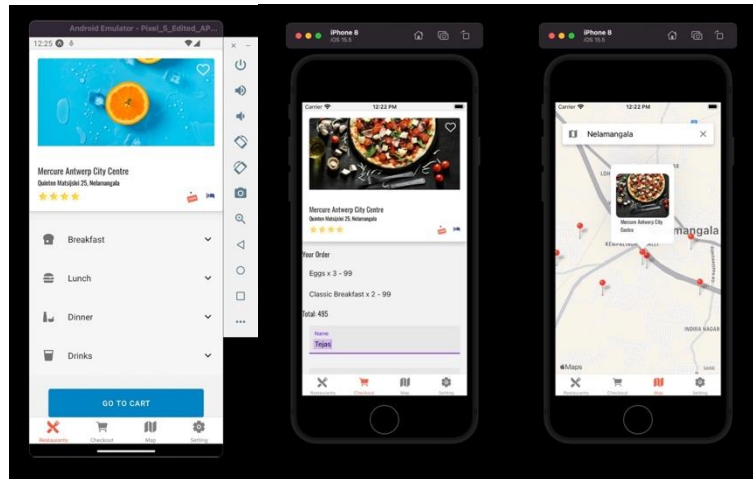
V. CONCLUSION

The main aim of this study is to develop a user friendly easy to use food ordering application for both android and iOS users. As the above studies suggest that people are more interested towards digital food ordering application and these apps help in the growth of food market. Based on result of this study, we can conclude that implementation of this system will help customers to order food in ease and will also help food services like restaurants, café to get more orders. Using react native will make the app both cost and time efficient.

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