Reserve your table: A mobile application for reservations in a restaurant

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Abstract

Today's visitants have little anticipations while reserving a table in the restaurant of their choice. They expect a smooth experience that begins with the reservation of the table till the end of their visit, parking, with fewer dealings, real-time waiting lists, analyses from the visitors, and commendations from them that helps them plan their selection accordingly. By means of an online restaurant reservation system, a visitor gets the liberty of making a booking each and every time they like devoid of making calls. Visitors will be enticed by the ambiance and set menu offered on the customized interface and can make stress-free reservations and know they'll be instantly alerted of any alterations in the reservation. Visitors will be able to make their specific selections and specify any inclinations using the appropriate features on the application. For the restaurant, such reservations applications signify a colossal lifting of tasks from the managing staff and ensure a significant improvement in the routine processes. Floor occupancy, visitors expected, available parking slots, and their dining choices respectively for each table can be easily retrieved. This is essential in this special COVID-19 pandemic time. Additionally, the visitor's contact details can be saved to be integrated the latest discount programs for your regular visitors. It will aid the restaurant management ineffective management of the visitors, occupancies, services, and waiting lists. This application will help in reducing errors and improving returns. Real-time details related to availabilities will be accessible on the app for all the stakeholders thereby eliminating waiting queues at the counters. This App offers online reservations with inexpensive software, downloadable from Play Store. The app will provide the visitors with better reservation experiences, and allow the restaurant to build connections with the visitors. The app will be designed using Android Studio and data will be stored on FireBase. A survey was also done with around 50 people to find out the interests of the people in such online restaurant booking apps and the expected requirements.

Keywords − Restaurant reservation mobile application, booking a table, visitor inclinations in bookings, restaurants, Visitor anticipations.

Introduction

People need to change their daily lifestyle, so they resort to restaurants to eat various meals and drinks and spend some time entertaining with their friends and family. Where the multiplicity and diversity of services provided by restaurants is the main factor that helps them go to restaurants on an ongoing basis And through the restaurant reservation application, which helps and facilitates the customers and reduces the time they need to go to restaurants and from the services provided by this application they can choose the dining table easily with knowing the price and shape of meals, and they can reserve the table, whether with or without a view there is also a feature in this application that the customer can reserve a parking lot for his car and he can pay through the bank or in cash Moreover, they can know the number of people that are received in restaurants to avoid crowding due to the presence of the COVID-19 virus. In the event that the customer cannot go to restaurants, this application provides a delivery service, and customers can order food and be delivered to them among the advantages of this application is to make it easier for the customer to know the location of the restaurant and reduce time and effort for customers and restaurant workers And the customer can easily book in the restaurant without any problem facing him, whether he is reserving a table, food, or parking for his car, which makes this restaurant get a high reputation and increase the demand for it, thus the restaurant benefits and the financial return increases.

Methodology:

The investigators have used variegated examination approaches in this study. Both the quantitative and qualitative approaches have been used. These approaches are meant to get data about the work under concern. The quantitative approach was realised by using online questionnaire. This approach is intended to support the study of the objectives for the work and analyse the underlying problem. The qualitative research approach was used for related research article reviews. This approach helps to get the additional information on what should be the

application of technology in this problem domain and also helps in identifying the existing gaps in the recent applications of the same nature.

Literature review

The online reservation system is one of the things of great importance for all businesses and other businesses As it has been applied to many activities with the aim of increasing profits, and all institutions must identify technologies that can increase their profits and sales And resort to using the applications available on the Internet because people have faced terrible use of the Internet recently Because it helps to increase the efficiency of the business that commercial activities work on and it works to facilitate all people's work. And this article talks about booking via the Internet that helps get rid of the manual reservation method And directed to book online now that it helps to reduce the time they need in the reservation and helps the customer to make reservations quickly without any problems they face.

RoundMenu is an app that allows you to reserve the most opulent eateries in the Middle East. Abdulla, Hannah-Farah (2012). It is a mobile application that offers a provision that aids in locating eateries in many Arab countries and cities. This application is available for both, the iOS operating system and the Android operating system. The best important feature of it is that it provides you the opportunity to take advantage of bargains that are planned in finest dining spaces in the Arab countries. You can select one of the suitable options to book the table or take away the parcel. The offers and bookings are available from different restaurants. The reservation at the restaurants is made easy that way and offers more options to the customers. Bookings can be confirmed with small payments made with the credit or debit cards and later the discounts can be availed at the restaurants counter.

My Table Restaurant Reservations App: Ahmad et al., (2019) talks about an application that can not only assist the customers in booking the table at a selected restaurant, but also to get a view of the restaurant to select the most cosy and comfortable table for their family and friends. The information displayed on the app is fetched in real time and hence the customers always gets an updated list of the table/menu etc. It also helps the management of the restaurant to predict the inflow and manage their services effectively. The application is also supported with an online chat to help him do the bookings with ease.

Reserveout restaurant reservations simplified: Khalil Shadid,(2009)says that this platform is available for all the Android devices as well as IOS. The restaurants can be searched, booked and accessed through this app. States of UAE, Jeddah, Amman, Beirut, Doha and Manama are available in this app. Sitting at home you can browse through multiple options, this way crowds can be avoided and the suitable place can be searched within no time. This is also an effective tool for the management of the restaurants to improve their services and prepare in advance for the customers. This will help them improve their business. It can also serve as a tool for marketing and reach out to them globally.

In order for a project to be created, it is necessary to plan and monitor all aspects that are required by the project to help achieve the goal of the desired project and many programs are used, for example Ms Project which is used to draw and represent the project plan. Where the benefit from this article is that Ms Project helps in planning and drawing the project plan in detail and is distinguished by that it is easy to work in it and is used to start the project in order to create the plan on it.

Using UML star makes high-resolution designs easy and is a fast, passed open source program that gives high-quality results and it is used for projects because it is the ideal language that shows project details.
Through the article it is clear that the use of UML star helps in drawing application diagrams because it makes designing applications easy, accurate and fast, in addition to that it is open source.

Firebase helps developers create high-quality applications and is used to create mobile and web applications it is fast to use and provides a tool that helps group formats on Android and iOS.
And it is clear from the article that Firebase helps in creating and maintaining the database and makes applications characterized by their high quality and speed of use.

Problem definition

The increase in demand for restaurants during this period, the customer faces many problems in how to book in a manual way As there are many difficulties facing such as not knowing the location of the restaurant and being late in obtaining the order and the lack of organization and arrangement in the provision of services and the large number of crowding in restaurants and the lack of knowledge of the number of people present in the restaurant this makes it easier for the Covid-19 virus to spread.

Data Collection:

Data collection is the one of the methods to collect the information related to the research and analyze it for clarification on the requirements and expectations of the stakeholders. Numerous tools are there for this purpose, like: interviews, questionnaire, observations, site visits etc. Here we are using questionnaire to have a good sample size and uniform responses.

Questionnaire

A questionnaire was made on Google forms and shared online with respondents. It consisted of 10 questions and the link is provided below:

https://docs.google.com/forms/d/e/1FAIpQLSd9NR13zOOWs1kQPD6HFiMpdyfYBpIC2yU8pe_AJup2QGEZ ow/viewform?usp=sf_link
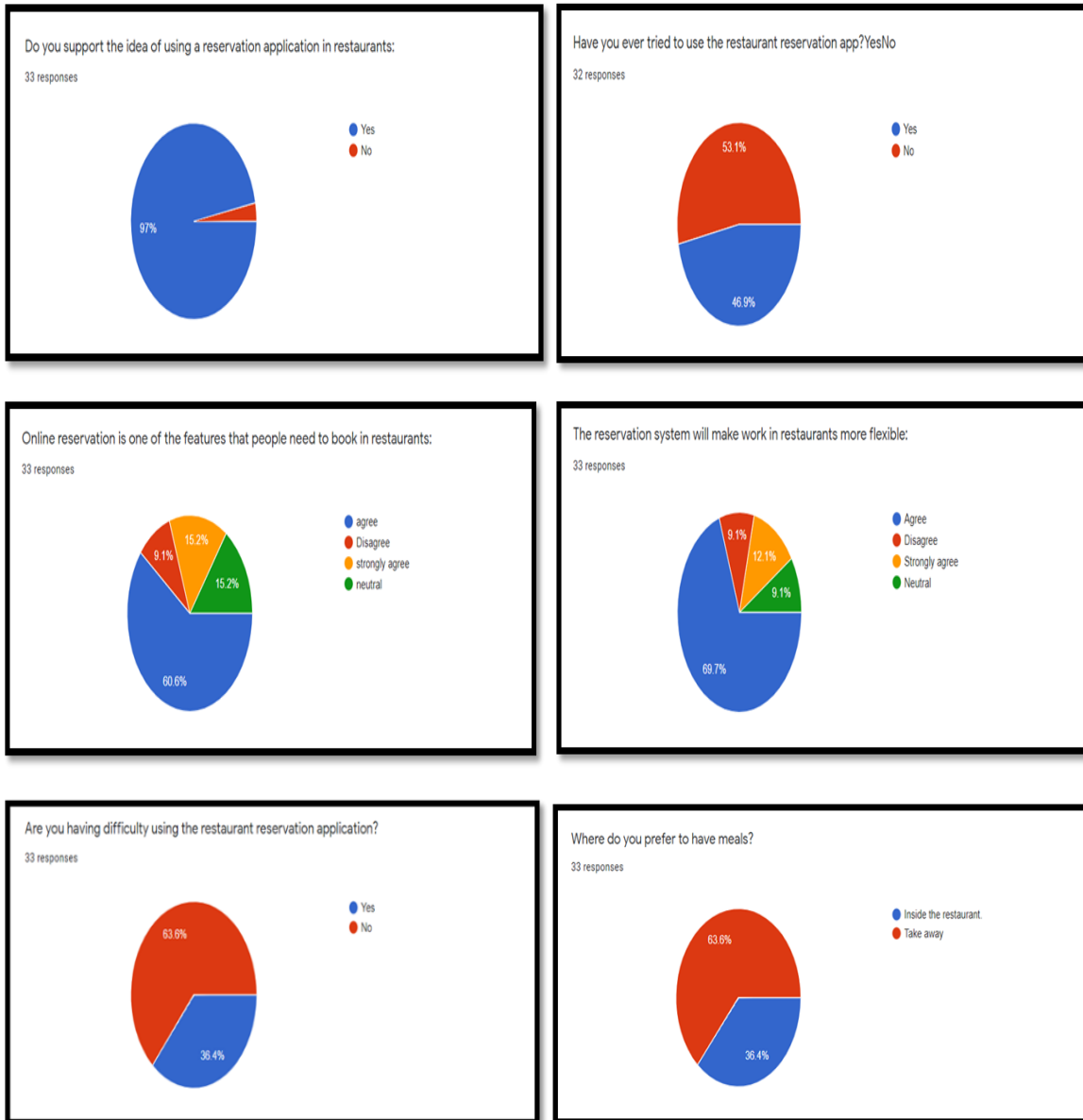
Figure 1 *Questionnaire Results*

Analysis

Q1: The percentage of people who chose yes is 97% as it is clear that all people supported the idea of requesting reservations in restaurants because it helps them reduce the time they need in booking.

Q2: According to our results, 47% use restaurant reservation apps.

Q3: According to our findings, 61% agree that booking via the Internet is one of the things that people need to book in restaurants.

Q4: 70% agree that the restaurant reservation application makes the work of restaurants more flexible. Therefore, the restaurant reservation application will help restaurants operate in less time and on a regular basis.

Q5: We find a rate of 64% they answered without saying that they find some difficulties in using the restaurant reservation application, so this application will be designed in a simple and easy way so that it helps all groups use this application with ease.

Q6: The percentage of people who prefer to take away food is 64%, according to our findings.
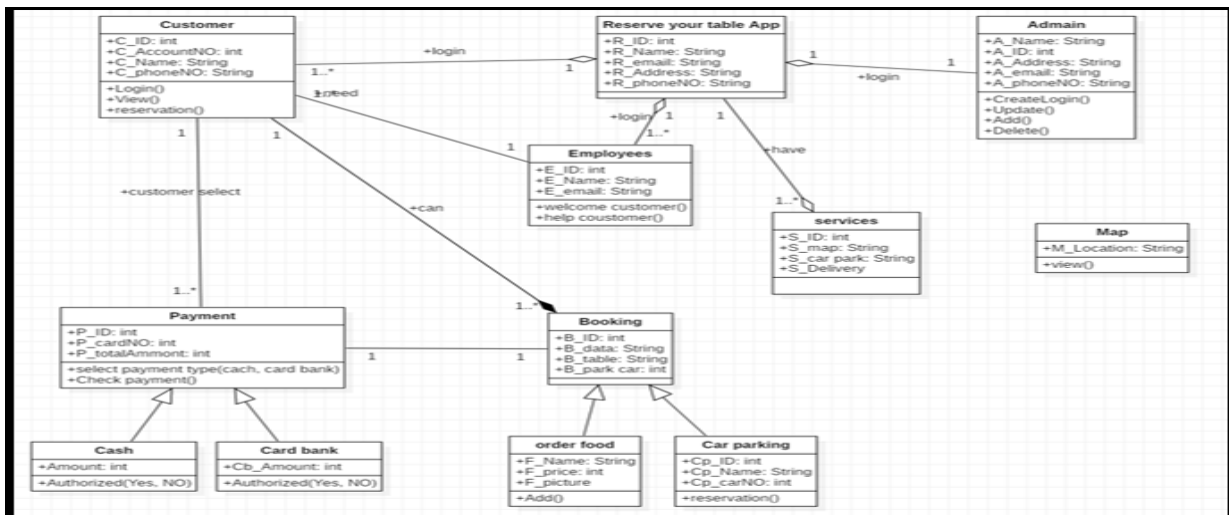
Design Illustrations
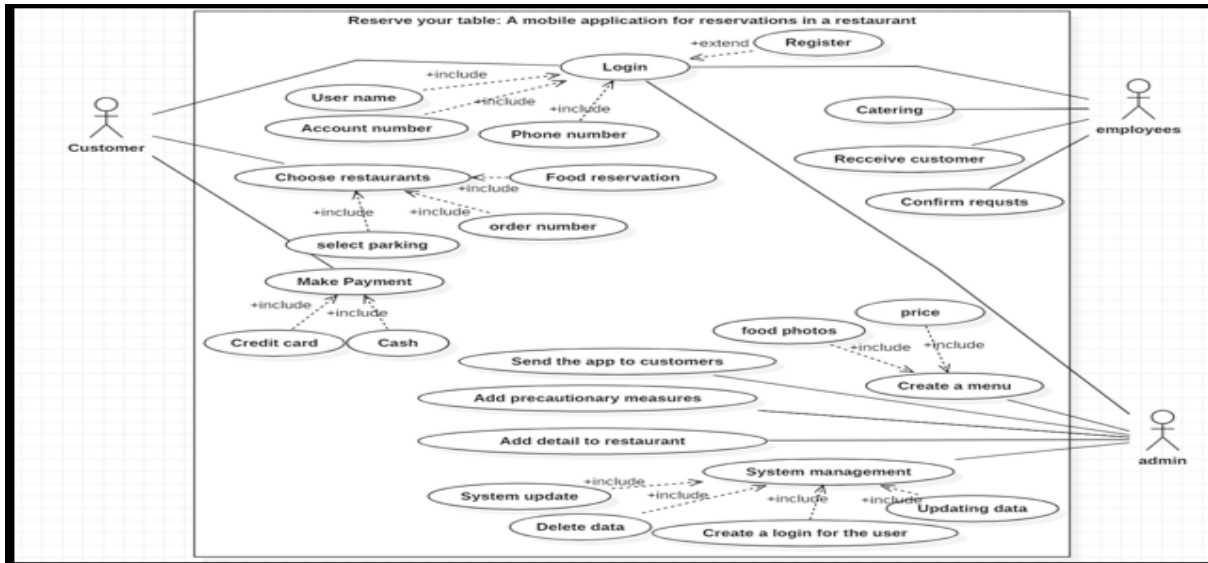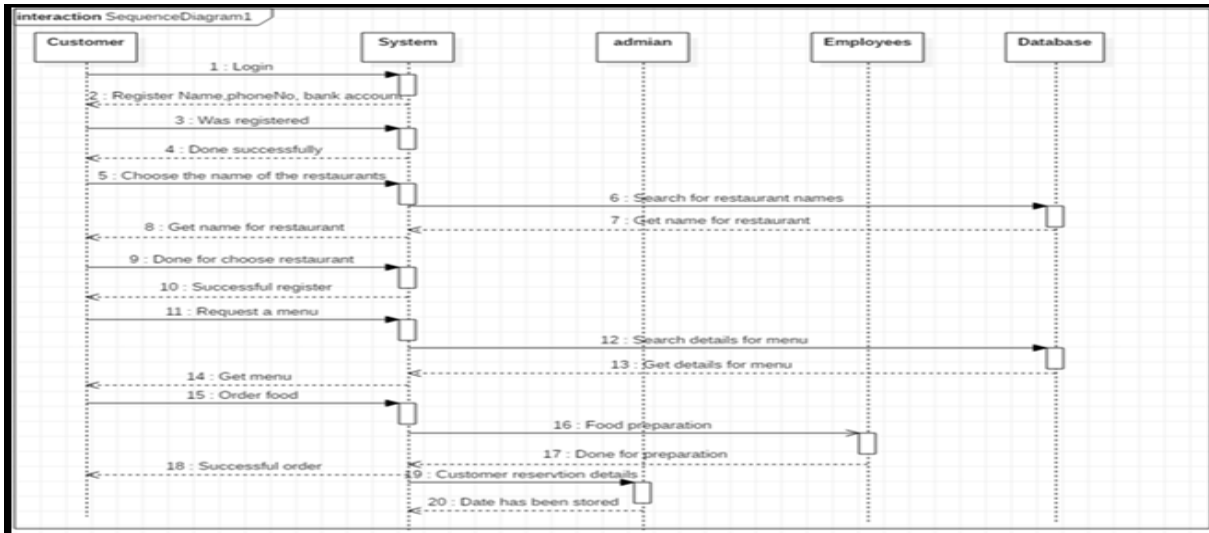

Figure 2 Use Case diagram
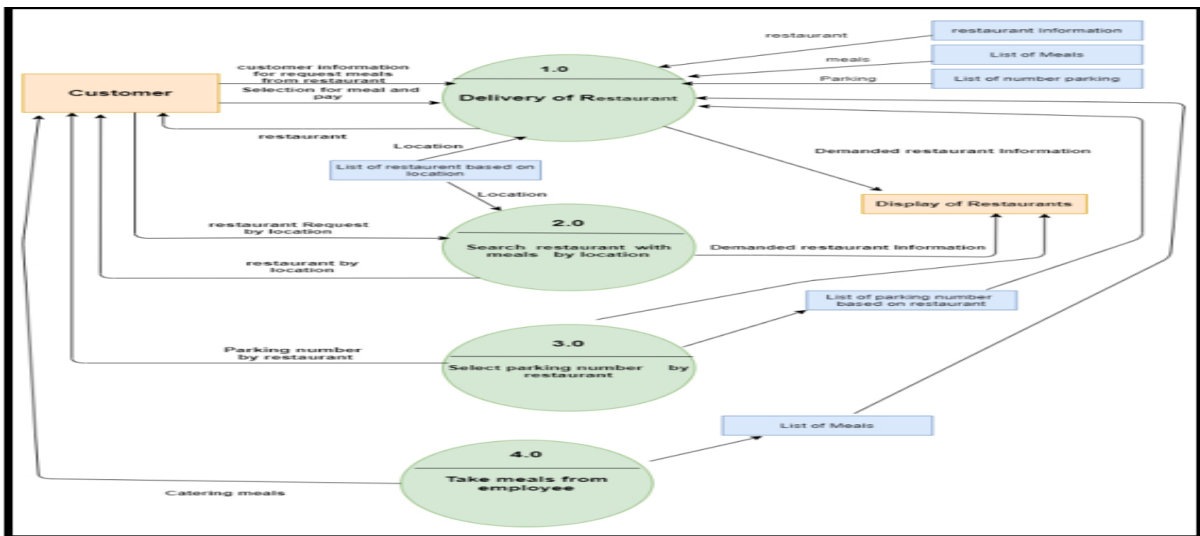

Figure 3 Class Diagram

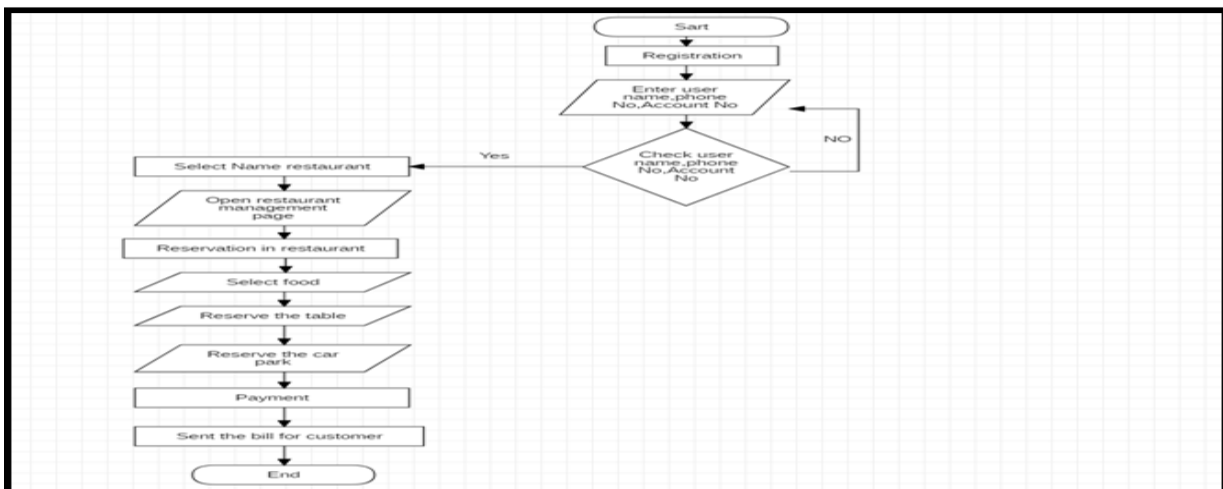*Figure 4 Sequence diagram*

Figure 5 Data Flow Diagram

Figure 6 Flowchart

Observations

This application is a restaurant reservation application that helps people in the way of booking restaurants in a fast and easy way without any difficulties they face, and this application contains three sections: The first section, the customer: can choose a restaurant, reserve a restaurant, choose food and drinks, know the number of people present in the restaurant, reserve a table, a parking lot, the method of payment, and a map that helps him know the location of the restaurants. A second section for the restaurant: Add food, tables, parking places, looking at orders, adding restaurants' location in the application, precautionary measures that must be followed by the customer. The third section, the person: it can add restaurants, a restaurant location, a contact number and a picture of the restaurant. It can detect data for people who have registered in the application and add precautionary measures in the presence of the COVID-19 virus.

The results of the application deployment will be available only later, after the testing completes and one of the restaurant is able to successfully deploy it for its clients.

Conclusion

This project is considered a project that serves customers and workers in restaurants, where customers can, through the application, book in restaurants with ease and not waste time In this project, an Android app for reservations in restaurants is being designed and combined with other features, Among the features of this application is it easy to reserve restaurants and choose food and drinks, and he can reserve a table and parking for his own car and know the location of the restaurant through the map in the application also he can pay through the application and this application provides a delivery service, Through this application, the reservation process in restaurants can become easy so that they can quickly find the services provided by restaurants through the application.

Acknowledgements

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