Fork-It Restaurant Table Reservation System

Project report submitted for

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in

Department of CSE and DSAI

By,

Anand Bachker (201000005)

Vikalp Kumar Tripathi (201020258)

Yathin Prakash Kethepalli (201000060)

Dr. Shyama Prasad Mukherjee

International Institute of Information Technology, Naya Raipur

(A Joint Initiative of Govt. of Chhattisgarh and NTPC)

Email: iiitnr@iiitnr.ac.in, Tel: (0771) 2474040, Web: www.iiitnr.ac.in

CERTIFICATE

This is to certify that the project titled “Fork-It Restaurant Reservation System” by “Anand Bachker (201000005), Vikalp Kumar Tripathi(201020258), Yathin Prakash Kethepalli(201000060)” has been carried out under my/our supervision and that this work has not been submitted elsewhere for a degree/diploma.

(Signature of Guide)

_____

Guide Name

Dr. Santosh Kumar

Designation of Guide

Department of CSE

Dr. SPM IIIT-NR

February, 2022

Declaration

I declare that this written submission represents my ideas in my own words and where others' ideas or words have been included, I have adequately cited and referenced the original sources. I also declare that I have adhered to all principles of academic honesty and integrity and have not misrepresented or fabricated or falsified any idea/data/fact/source in my submission. I understand that any violation of the above will be cause for disciplinary action by the Institute and can also evoke penal action from the sources which have thus not been properly cited or from whom proper permission has not been taken when needed.

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Anand Bachker(201000005)

Vikalp Kumar Tripathi(201020258)

Yathin Prakash Kethepalli(201000060)

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Keywords Density

One Word	2 Words	3 Words
system 3.29%	table reservation 0.98%	table reservation system 0.46%
table 2.54%	reservation system 0.75%	android web application 0.23%
order 2.49%	ordering system 0.75%	viewing customer details 0.23%
restaurant 2.37%	android app 0.52%	functional requirements system 0.23%
food 1.85%	reserve table 0.4%	page users fig 0.17%

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Abstract

Most restaurants currently use a manual reservation system, and customers are eager to locate a convenient application for booking tables or other services, rather than walking to the hotel, calling, or reserving through a middleman. The goal of the current study was to create a client/server application for table reservations and an online booking system. Fork-It Restaurant table reservation system is an android and web application that can help users enhance their restaurant table reservation system by giving them direct access to management. Through an android and web application, it has provided the benefits of an effective booking of food priorly or the ability to hold their accessible table without holding up. Our application entailed the use of two applications that were linked to each other, as well as the usage of three modules: reservation, order you can book, and contact us. The primary purpose of this work was to allow the administrative representative of a restaurant's organization to deal directly with customers. Additionally, it can post client requests for free tables based on their own requirement for a specific number of seats in their preferred region. This app can help you avoid wasting time at the restaurant by reducing the amount of time you spend there. The administrator can keep track of the ordering schedule for items and foods. The use of this application can enhance the popularity of restaurants among their intended customers coupled with speedy and direct service availability. Flutter, React, Express, Bootstrap, NodeJS, MySQL are the technologies utilized to create the project. This project will make the duties of hotel guests and employees (admin) much easier. This project could be expanded in the future by adding a home delivery module.

KEYWORDS: Android, Mobile Application, Table Reservation, Food Order, Customer, Restaurant Management, Web Application.

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CHAPTER 1 INTRODUCTION

Introduction

As we all know, manual table reservation systems are gradually being phased out of well-known restaurants as people transition to the digital era of restaurant reservation, and suppliers weigh the pros and downsides of using a digital system. Typically, the restaurant tables reservation system should include tools to help you plan and execute your restaurant appointments in a timely and efficient manner. Effective table management suggests that a restaurant can increase the possible usage of their lounge area and, as a result, should increase supplier advantages. A table reservation system for any restaurant should have complete permeability and control over their seating plans, which can be accessible by customers at any time and from any location via a mobile or online application at a certain day and time and that is the goal of this project is to allow clients to submit questions and receive services online by supplying the necessary information via the Fork-It Android app and website. Users can use this app to reserve a table and order food for a specific date and time while sitting anywhere. The administrator can be kept up with the details of ordering tables and foods.

Motivation

People use several applications for restaurant ordering, ride booking, hotel booking, and much of their daily job in the current circumstances. So why not create an app and website for them that will allow them to reserve their favorite seat in their preferred restaurant without having to get there, saving them time, energy, and money. Furthermore, the inspiration stems from the fact that some of us have faced this issue of non-availability of seats on reaching a restaurant and sometimes waiting for so much time for the food.

Problem Statement

In today's world, time and energy are more valuable than anything else. Rather than wasting time and energy on reserving seats by visiting the specific site ahead of time, we can develop an app and website that would help customers save their precious time and also add a feature of pre-booking of food from the menu list so that users do not need to wait for its order. As a result, our main issue statement is to develop a system that can be used to reserve tables for customers at a restaurant and also book their food orders in advance. Making it user-friendly so that customers can make reservations fast is a huge challenge. The main goal will be to construct a restaurant seat reservation web as well as an android application utilizing Flutter, React, Express, NodeJS, Bootstrap, MySQL.

Problem Objectives

The main goal of this project is to allow a restaurant's management administration and staff to grip clients in order to make orders and identify available tables based on the number of seats they require. Our app and web application will allow users to access and manage table and food arrangements. The overall goal of our program is to provide a table reservation system that will aid workers in resolving basic concerns with their manual reservation method, such as time, cash, and vulnerability.

Some specific objectives which we will focus on are:

- Calling in a hurry is easy.
- User-friendly.
- To reduce the amount of time and effort required by the client to save.
- Perfect for last-minute reservations.
- To improve customer-administrations communication and shorten the time it takes to make a request.

Need of the Project model

As far as we know, the existing system for booking is a manual one, in which everything is done on paper and there is no automated system in place to keep track of the data in the restaurant. The menus available in the restaurant are printed on paper. The server has taken a paper-based request, and the bill that is generated is also paper-based. We noticed that this paper-based system is easily subject to being affected for a variety of reasons, resulting in a variety of issues, such as waiters being unable to keep organized client information. Furthermore, it results in a waste of time and paper.

On the other hand, if minor adjustments to the menu are required, the supervisor must print the full menu cards, resulting in a waste of paper and money. Because it's impractical to print the complete menu over and over due to minor modifications. Supervisors may need to inspect the records before approving the request on rare occasions. The former technique of booking was cumbersome because a handler had to sit tight for receiving orders, recording requests, and following up on already rented halls. As a result, we'll need to make some changes to the current system to address the difficulties mentioned above. And, as a result of the aforementioned challenges, our proposed model is required.

Contributions

Our project solves the above-discussed problem in an easy manner and also helps the restaurants to keep records of their clients . Hence our project benefits both the customers as well as restaurants in their respective use. With the help of this project, we are also saving time, energy as well as paper by providing the menu option which can be displayed in the application and the user can also pre-book his food if he wants to. So, in this way, our system is contributing towards society's needs and restaurant demands.

CHAPTER 2 LITERATURE REVIEW

Literature Review

Various apps concentrating on this subject have been developed over the last ten years. The Android smartphone application [1] was used to construct the core work of the digital table booking and ordering system for restaurants. They created an ordering system that allows customers to book food online. Customers may now place orders and pay bills online using a digital ordering system that allows them to do so from anywhere in the world. Three apps were created to manage the kitchen order, customer service, and invoicing system, respectively. The implementation of an ordering system has proven to be both effective and cost-efficient in terms of prospective appeal. A previous meal ordering system was reported to have a similar project to eliminate the errors of a human ordering method[2]. AOSRTF (An automated ordering system with real-time feedback) was created by them. Wireless technologies and an Android smartphone are used in this ordering system. This ordering mechanism also improved output efficiency by reducing the burdensome load of manual work. The digital ordering system outperforms the traditional paper-based ordering and reservation system in terms of cost. For online food order booking, a touch and dine app was created[3]. Customers praised the implementation of e-ordering of food and the website.

WOS (Wireless operating system) was created with the intention of creating a meal ordering system [4]. Customers can buy food online using a simple design that ensures high-quality service. They used developing technology and personal digital assistants (PDAs) to facilitate communication between service providers and their customers. They also indicated that, with little modifications, these automated management systems could be used in hospitals to handle their data recorders. Another attempt has been made to improve the dining experience by utilizing e-technologies [5]. They also proposed using multi-touchable e-management for restaurant systems as a more successful method. They use an automated system to control the sequence of food preparation, packing, and billing. For business transactions, another project was created employing advances in information and communication technology[6]. They looked at the effectiveness of mobile technologies in terms of business determinants and uptake. To improve the usage of e-technology and mobile applications for a successful business, a fit viability model can be used.

As a result, contemporary trends are focusing on the usage of android applications in their businesses to minimize input costs while increasing profits.

CHAPTER 3 PROPOSED SOLUTION

Proposed Solution

The purpose of the suggested system is an android as well as a web application that allows consumers of the restaurant to enquire online and book for services by providing the essential details using an android app or website portal. The traditional table reservation system has been replaced by an online order system. Management can access reports at any moment to learn about the present condition in reserve and take the appropriate actions. Customers can reserve a table using their mobile phones with this Android and web application. Customers can use the system to view and check for available tables and book them all at once, as well as order food from the hotel's menu.

Functional Requirements

A. Table Reservation: The major function of this application is online table reservation, which allows users to reserve any table at any time and from any location.

B. Food Ordering: Users can also pre-order their food from the menu using this application by just filling out the form and they will receive it on their arrival.

C. Contact Us: Users can contact us any time using this application if they are facing some issue.

D. Gallery: Users can see all hotel updated images on their screen with the name of that hotel.

Advantages of Proposed System

The advantages of the suggested system are as follows:

- The manual table reservation system has been replaced by an online reservation system.
- During festive seasons, tables fill up quickly; in these circumstances, patrons can make advance reservations to take advantage of the ordering system.
- It saves time for clients who are seeking restaurants.
- It helps businesses save money and assets.
- By establishing a direct link between clients and their service providers, it discourages the use of a third party or middleman. It saves customers from having to pay a large commission.

Methodology

Customer and administration are the two elements that make up the complete project. Only registered users can access the program and log in. Each user can only have one account; duplicate accounts are not permitted. In this approach, users can order food and reserve a table using mobile as well as a web application. Food orders and table reservations can be viewed by the administrator.

A) ARCHITECTURE DIAGRAM

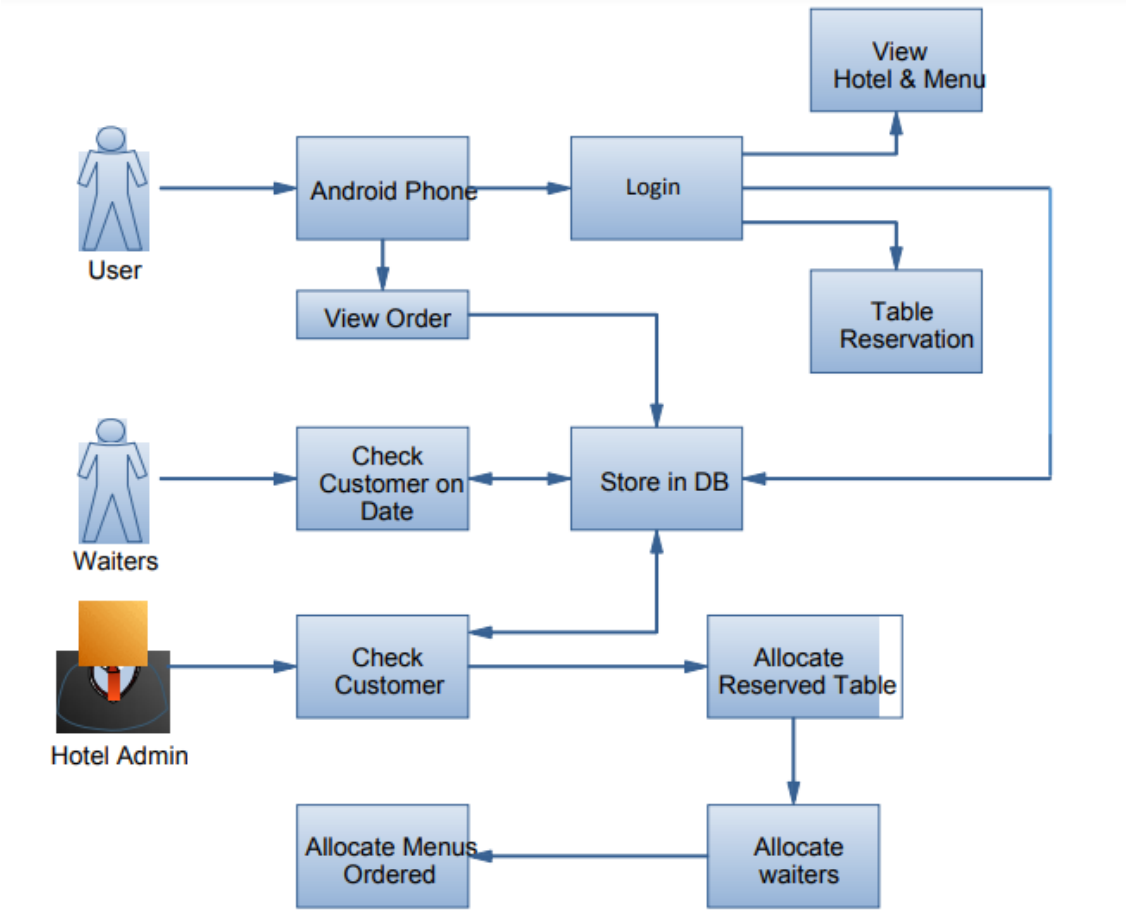

Fig 1: Overall Architecture Diagram of The System

The project's architecture design depicts the project's overall structure. This architecture design serves as a foundation for implementing jobs that will be scheduled in the cloud. Prediction and scheduling are the two most important components in this architecture

B) Use case Diagram

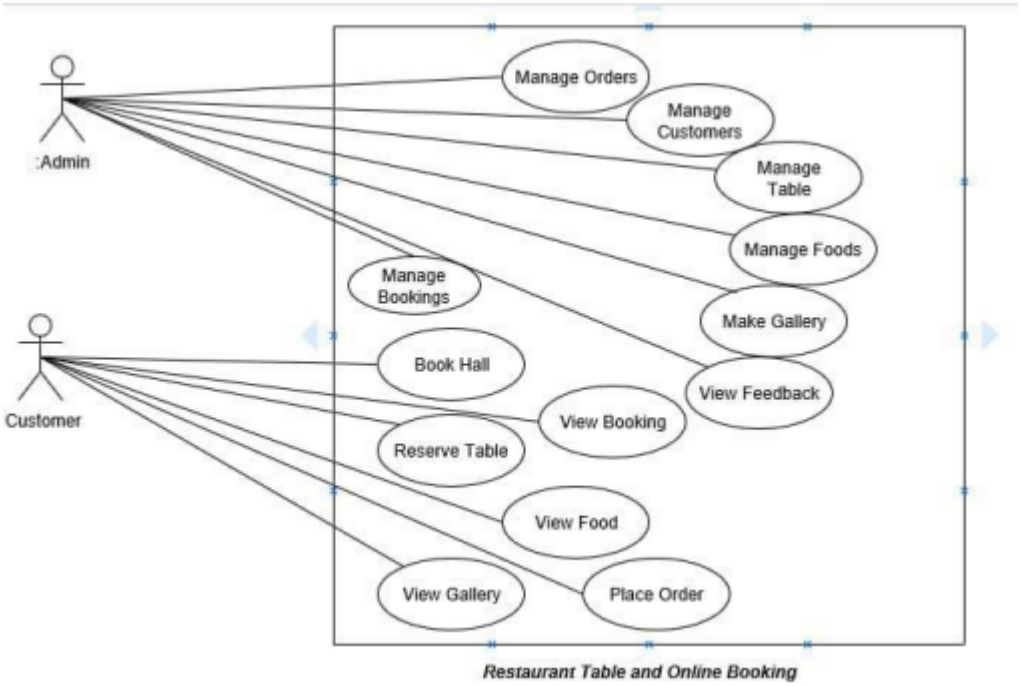

Fig 2: Functional requirements of the overall system

A use case model depicts a system's functional requirements. The system's fundamental needs are functional requirements; without them, the system cannot be finished and maybe rendered unusable. The first functional requirement is online table reservation; users can reserve any table through this application at any time; the second requirement is that users can order their favorite food through this application; the third requirement is that users can contact us, and the fourth requirement is that users can see all hotel updated images from the hotel profile.

C) Data Flow Diagram

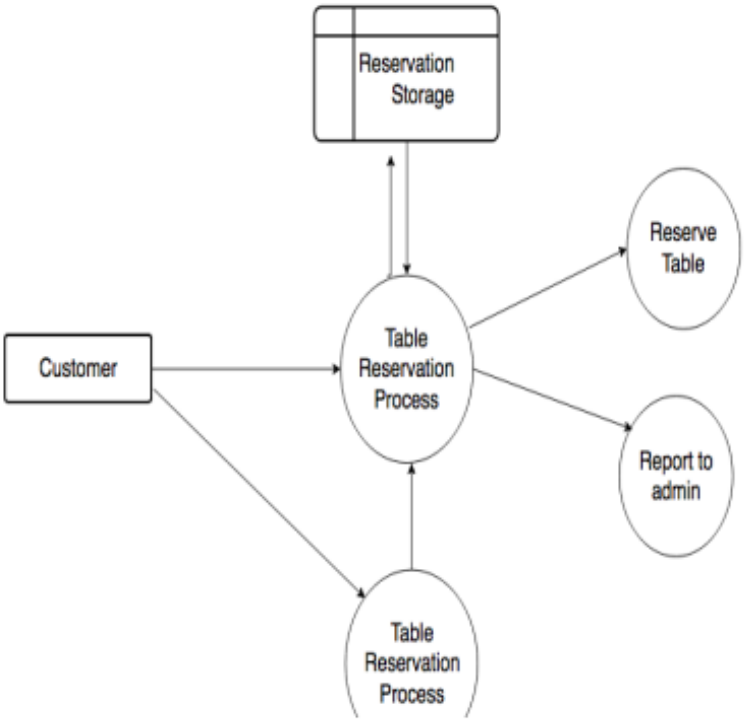

Fig 3: Customer reservation process

The processing of the system on Level 0 is depicted in the diagram. This is the system's abstract view, which depicts the client procedure for reserving a table, which is subsequently reported to the administrator.

CHAPTER 4 RESULTS

Results

The project user fills in the individual places of interest to create a record that should have been used in the Android app. The client is able to see the food. The client will be able to save a table, and the reservation details will be delivered to the client's email address. The following Figures show the results and output screens:

- **Website**

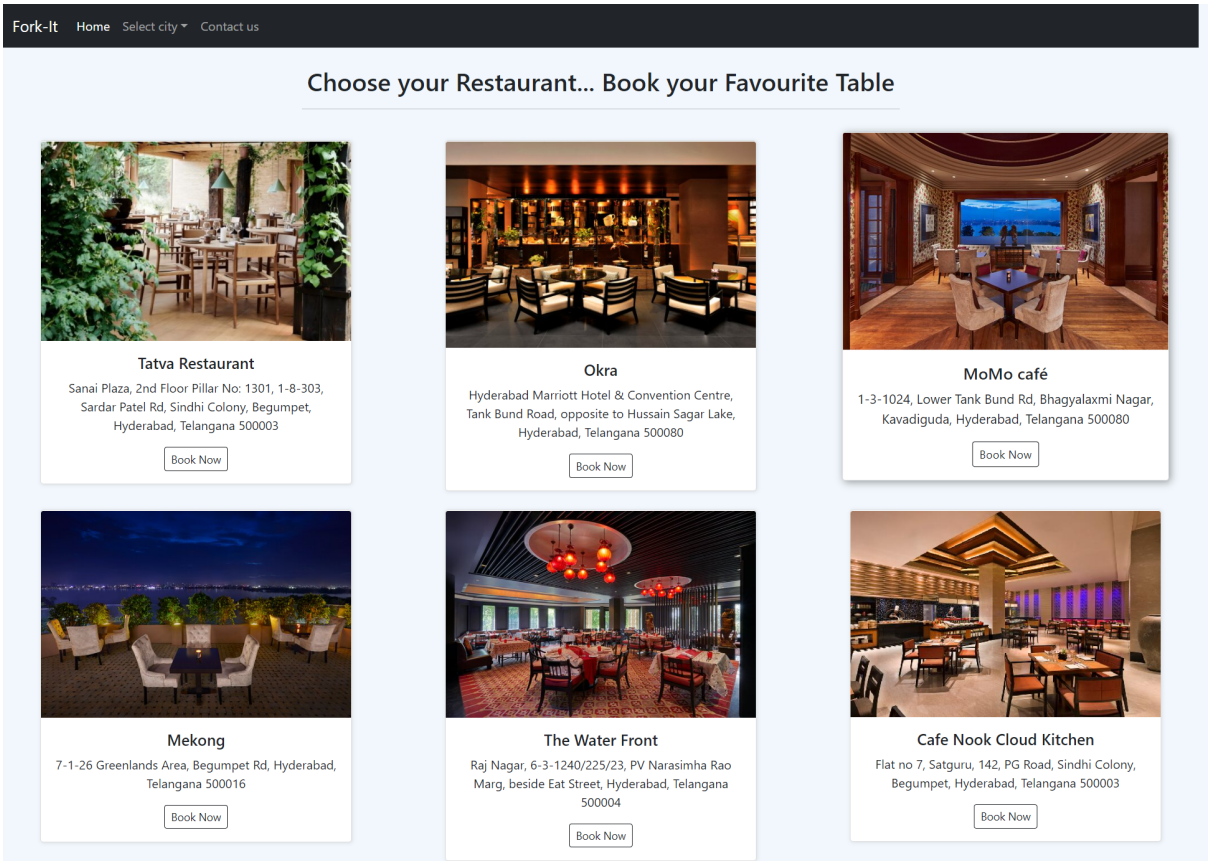

Fig 4: Home Page for Users

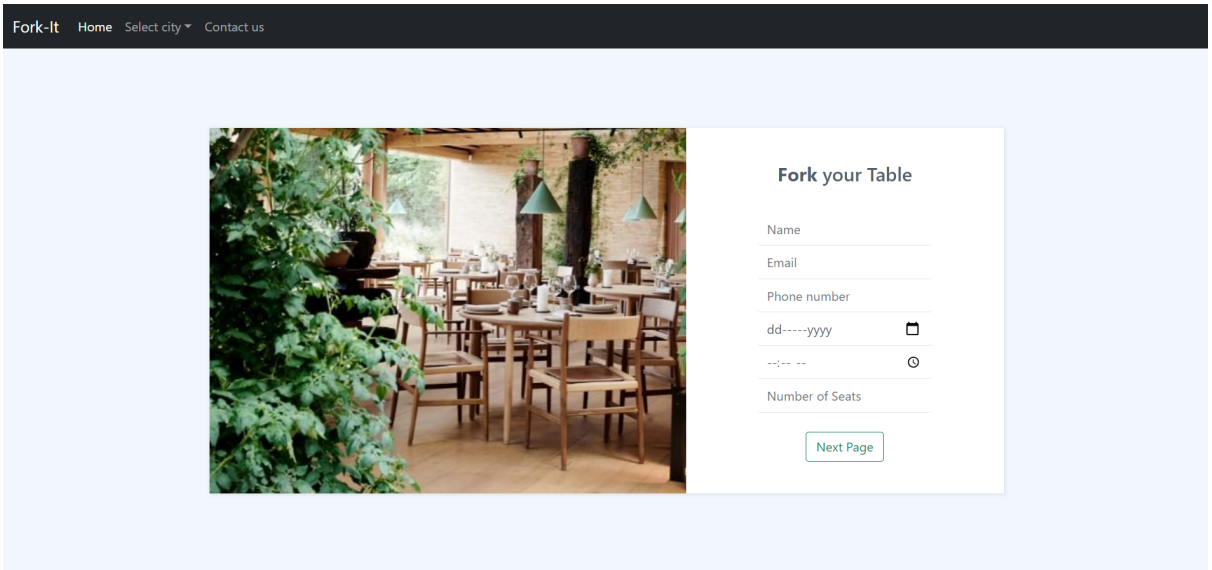

Fig 5: Reserving Tables Page for Users

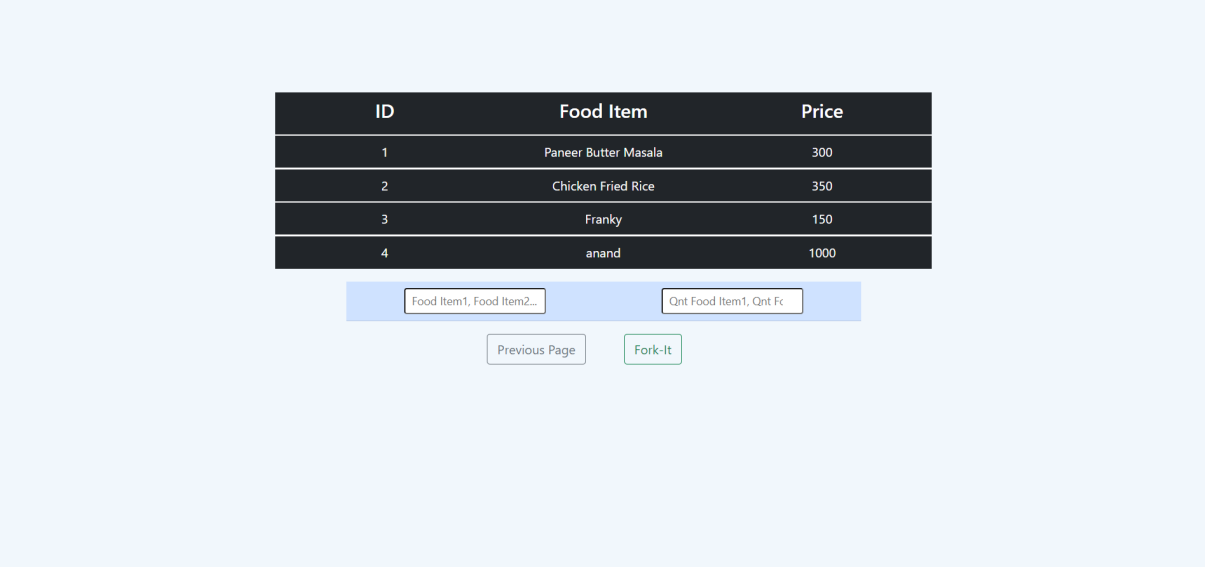

Fig 6: Ordering Food Page for Users

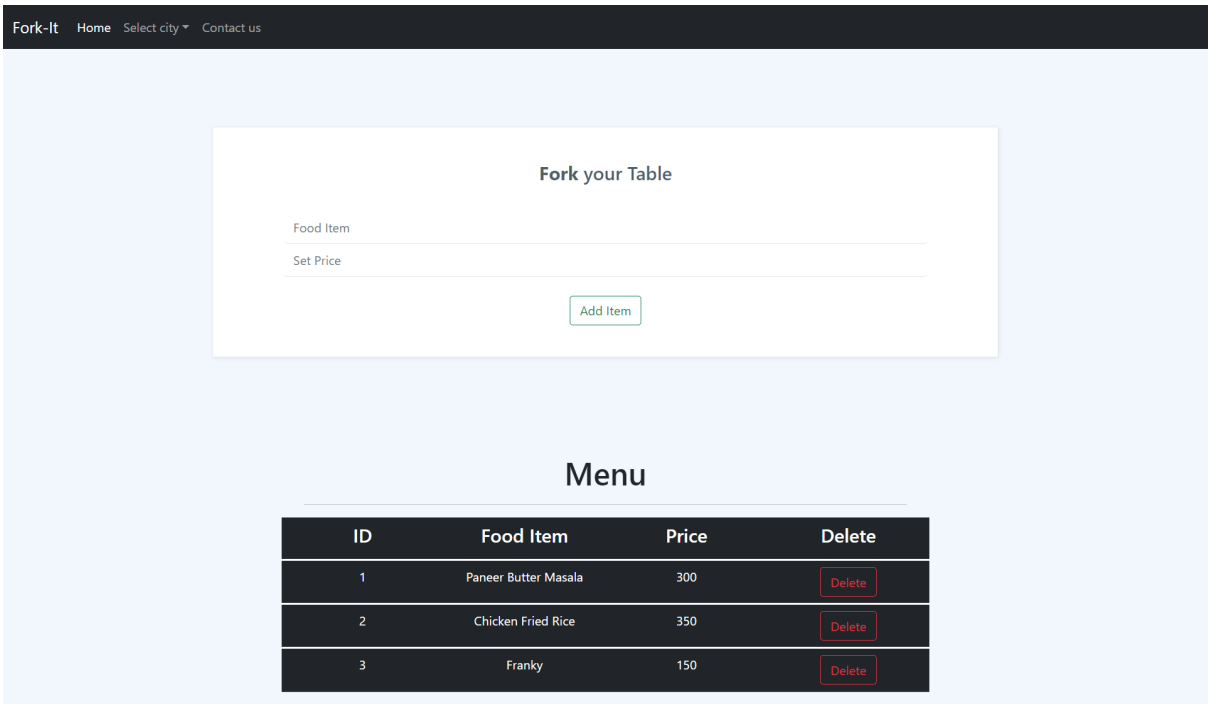

Fig 7: Setting up Food Items and Price Page for Restaurants

Fig 8: Viewing Customer details Page of Table Reservation for Restaurants

Fig 9: Viewing Customer details Page of Food Orders for Restaurants

- **Android Application**

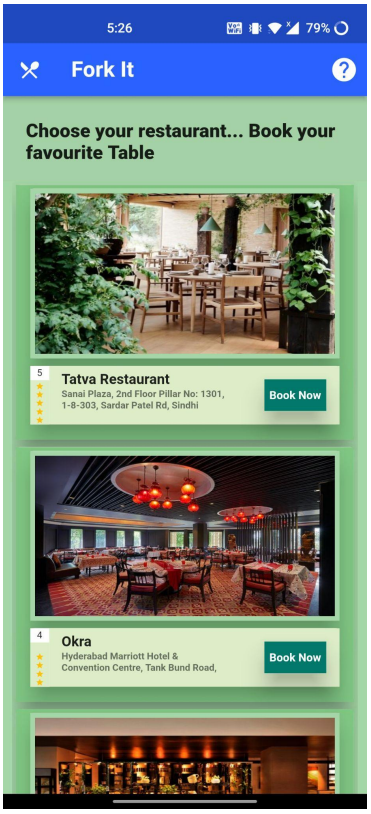

Fig 10: Initial App Screen

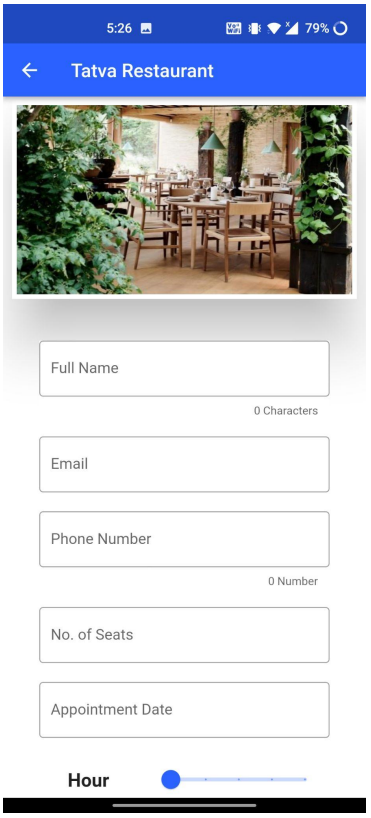

Fig 11: Booking Page

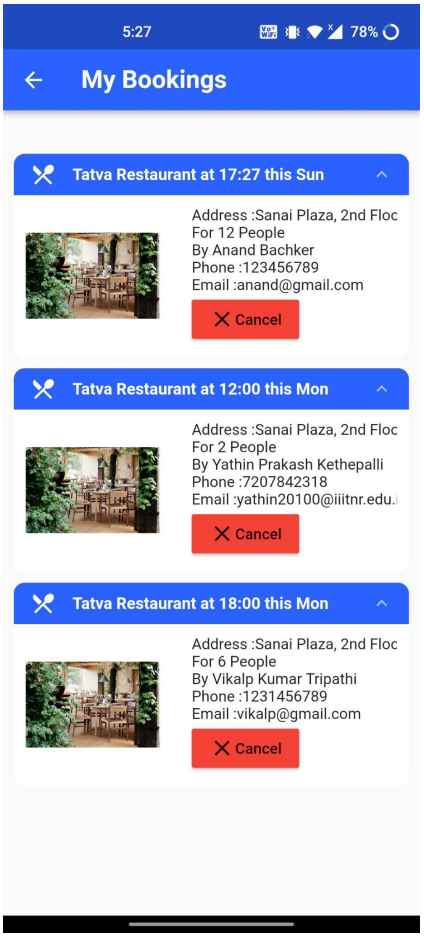

Fig 12: Bookings Screen

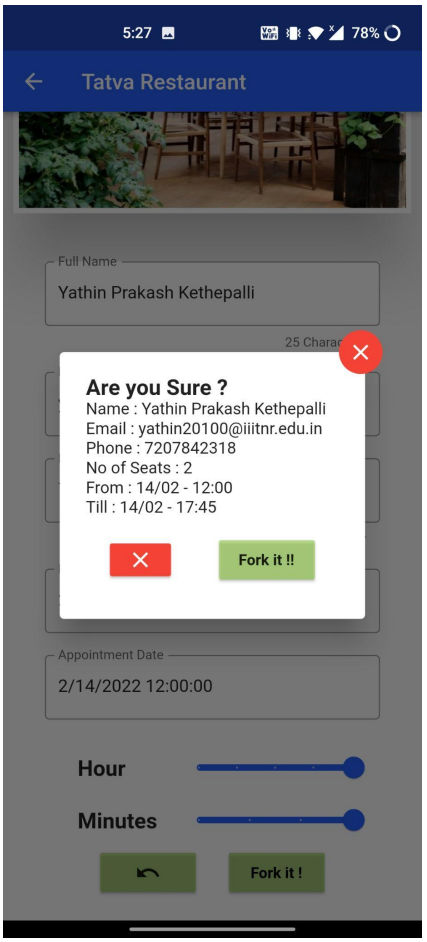

Fig 13: Confirmation for Booking

CHAPTER 5 CONCLUSION

Conclusion

The project has concluded that if a customer wants to visit a restaurant but there are no tables available for dinner or lunch, he or she will have to wait a long time. With the help of this software, users can choose the table's position based on their needs and preferences, for example. Tables can be rented based on the number of guests. Furthermore, you can quickly book food from the hotel's menu and view interior photos from the hotel's profile on the App and Website.

Considering the need for the proposed business, which offers a variety of services and allows customers to simply reserve their available table without having to wait using an Android app or Website. We tackled challenges faced by restaurants in this project by building the Fork-It app and website, which can be downloaded or browsed and then used to update one's personal information and gain access to the restaurant's current news and menu. This app will grow in prominence as more people become interested in Android and its fast-paced lifestyle.

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