MINI PROJECT REPORT ON

ARROWGRUB

(Online Table Reservation)

MINI PROJECT- CSS300

Submitted in partial fulfilment of the requirements for the award of the degree of

BACHELOR OF SCIENCE

Submitted by

ABISHEK T A	**224171003**
BHARDRINATH N	**224171015**
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Under the Guidance and Supervision of

Mr. R. VENKATESAN, ASSISTANT PROFESSOR-I/CSE/SRC

SASTRA

ENGINEERING · MANAGEMENT · LAW · SCIENCES · HUMANITIES · EDUCATION

DEEMED TO BE UNIVERSITY

(U/S 3 of the UGC Act, 1956)

THINK MERIT | THINK TRANSPARENCY | THINK SASTRA

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Srinivasa Ramanujan Centre

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BONAFIDE CERTIFICATE

Certified that this project work titled **"ARROWGRUB"** submitted to Srinivasa Ramanujan Centre, Shanmugha Arts, Science, Technology & Research Academy, SASTRA Deemed to be University, by **ABISHEK T A(224171003)** Bachelor of Science, **BHARDRINATH N(224171015)** Bachelor of Science, and **SAJAN KUMAR S S(224171074)** Bachelor of Science, program in partial fulfilment of the requirement for the award of the degree of **BACHELOR OF SCIENCE**. This work is an original and independent work carried out under supervision, during the period **December 2023 – April 2024**.

Signature of Project Supervisor : R. Venkatesan

Name with Affiliation : Mr. R. VENKATESAN Asst. Professor/CSE

Date : 18/4/2024

Mini Project Viva Voce held on 18/4

EXAMINER I **EXAMINER II**

SHANMUGHA

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DECLARATION

We submit this project work titled **"ARROWGRUB"** was submitted to Srinivasa Ramanujan Centre, Shanmugha Arts, Science, Technology & Research Academy, SASTRA Deemed to be University, in partial fulfilment of the requirement for the award of the degree of BACHELOR OF SCIENCE. We declare that this work is carried out under the supervision and guidance of Mr. R. Venkatesan, Department of Computer Science, Srinivasa Ramanujan Centre, Kumbakonam.

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ACKNOWLEDGEMENT

We pay our sincere pranam to God ALMIGHTY for his grace and infinite mercy and for showing on us his choicest blessings.

First, we would like to express our sincere thanks to our honourable chancellor **Prof. R. Sethuraman,** Vice-chancellor **Dr. S. Vaidhyasubramaniam** and Registrar **Dr. R. Chandramouli** for allowing us to be a student of this esteemed institution.

We express our deepest thanks to our revered Dean **Dr. V. Ramaswamy,** SRC and our respected Associate Dean **Dr. A. Alli Rani,** SRC for all their moral support and suggestions when required without any reservations.

We exhibit our pleasure in expressing our thanks to **Dr. V. Kalaichelvi,** Associate Professor, Department of Computer Science and Engineering, Srinivasa Ramanujan Centre, for her encouragement during our project work.

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Without the support of our parents and friends, this project would never have become a reality. We owe our sincere thanks to all of them. We dedicate this work to all our well-wishers, with love and affection.

ABSTRACT

In modern days, most people find it difficult to bear to wait for a table and to order food in a restaurant. Almost all the restaurants have difficulties in taking and processing orders, which triggers inconvenience to the customers. To reserve a table to dine at a desirable time the customer needs to communicate with the restaurant to reserve the table. When multiple staff members handle reservations without a centralized system, there is a lack of a comprehensive overview of the existing bookings. In such a hectic and noisy environment, mistakes are bound to occur from noting down the wrong menu and date or hour to missing reservations entirely. This system will overcome these problems. The restaurant table reservation system is robust, and the menu-based options will be easier to operate. This system manages two main services, the first one would be available for general customers to view and book tables and to order their desired dishes from the available menu of the restaurant. Secondly, the admin manages the services within the restaurants listed in the locality. The proposed system will benefit restaurants by increasing their customer satisfaction, the number of food orders, and their revenue by reducing the customer's waiting time.

Keywords: Surge price framing model, Ubiquitous web interface, Human computer interaction enabled system, Online table reservation system.

ABBREVIATION

HTML – Hypertext Mark-up Language

CSS – Cascading Style Sheet

JS – Java script

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SYSTEM REQUIREMENTS

Name of the Component	Specification
Development Framework	HTML, CSS
Language	Java
Database	PHP, MySQL
Operating System	Windows 10

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1. INTRODUCTION

The Online Table Reservation system is a training system that is a convenient self-service table and menu booking system. The booking process could be adjusted, managed restaurant reservations. The services provided are table and menu booking. The main objective is to provide seat reservation and ordering services to the customer. The major intent of the task is for the owner of the restaurant to directly deal with the clients. The idea is caught by keeping in mind the reality that the clients think it is difficult to go to the restaurant, because of the delicate amount of time required to book the table and menu. In a restaurant, the manager needs to analyze many paper receipts to check the customer-ordered menu, so the proposed system may help to reduce these kinds of problems. The customer needs to signup/login then only he can access the booking process. The customer can see the availability of seats at a desired time and book their seats without making a phone call to the restaurant.

LITERATURE SURVEY:

During the last few years, clients have wanted to look for an uncomplicated system to reserve tables and menus in their desirable restaurants. With the growth of modern technologies, people expect a system that satisfies their needs even more. They want to evade step to the corresponding restaurant or contact by phone call or reserve through a middle person. So, it concentrates on elaborate a website for booking tables and order menus. Online reservations can increase the accommodation by the customer information about the reservation availability and allowing them to make their reservation at any place and any time. The website gives more information about the restaurant than what they gained by calling the restaurant. Customer satisfaction increases when the seats are allocated according to their personal preference. The whole has been executed as a website used for laptops, personal computers, tablets, and mobiles. The program that handles the frontend utilizes HTML, CSS ,and JavaScript. The backend utilized by PHP. In this project, you can book a table and order a menu from an e-menu card online. It helps the chef to prepare food accordingly. So, food is ready by the time customers reach there. but there is no guarantee that the customer will come to the restaurant or not. However, the restaurant also needs a system that increases their profit and dining experience which in turn is not only an advantage for restaurant industries but also for customers to choose the restaurant of their choice and location. It not only benefits the restaurant but also benefits the clients.

2. WEBSITE DEVELOPMENT PROCESS

2.1 Various steps consider developing a website

Analysis: Firstly, better understand the website requirement creation, including website Design and Website looks and feels, the Web pages uses, website content and for suggestion and discussions, a proper space available on a web site for easily approachable.

Design & Development: Invention and Development is a significant role plays in Web Development. The Interface looks and feel according to most impressive and efficient way, Graphical elements required for design are appearing more impressive, for this use colour and image.

Content Writing: Writing of contents is a significant part of development of web pages and plays an important and necessary step in optimization Engine, a well-defined or easy content is utterly necessary to fall in internet site users. Content written by a more professional requires more pure, easy and accurate content.

Testing & Security: Testing as well play an important role in website development, testing is done for browser compatibility, broken links and can check the speed of loading pages and loading speed of images. We can also check validation of HTML code, validation of CSS, checking of spelling and build alterations to rectification of mistakes and can perform test of functional on processes of websites like Booking, Order menu, Signup, Login, Admin side, etc., these checks as per requirement.

2.2 Actual Implementation:

In our project we created an Online Restaurant management System website which having the complete information of items and the restaurant table. This Website shows the exact interior table view of the restaurant and which is develop with some ideas and portability purpose that may help some fresher to look around it and may show some interest against the restaurant management by doing some enquiry through these websites. Here the data is arranged properly by which its updating will be easier in future as the requirement or demand increase towards the website. It contains updated and useful for data for the online restaurant management. We have used platform HTML, CSS, JS for frontend and PHP, MYSQL for backend in our restaurant management.

There are 5 modules in our project:

- First module is home module. In that home module we have given the Photos of restaurant and a search bar. When the customer opens website, it will open the home page.
- Second module is Restaurant overview. In this module we give the details of restaurant and owner words.
- Third module is Table view. In this module we show the exact table position and they can select and book the tables.
- Fourth module is Menu. In this module we insert the items which is available at restaurant like chicken burger, pizza, crab lollipop, etc.,
- Fifth module is Feedback, in this module customer can write and give rating from 1 to 10 of the given question.

3. ARCHITECTURAL DIAGRAM

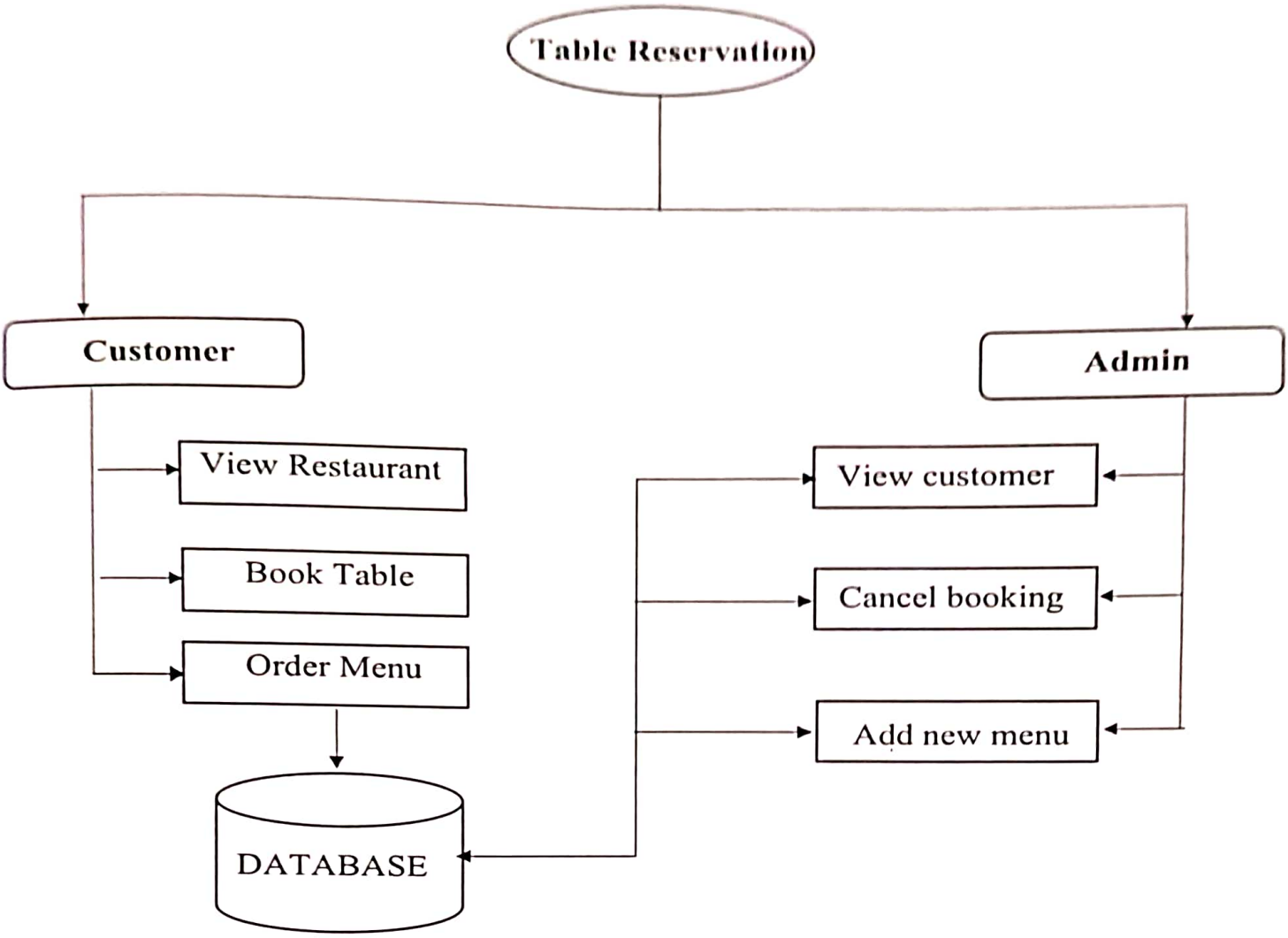

Fig 3.1. Architectural diagram

WORK-FLOW DIAGRAM:

The architecture diagram shows how the website works using MySQL, Java and HTML. Following below are the flow diagram to describe working.

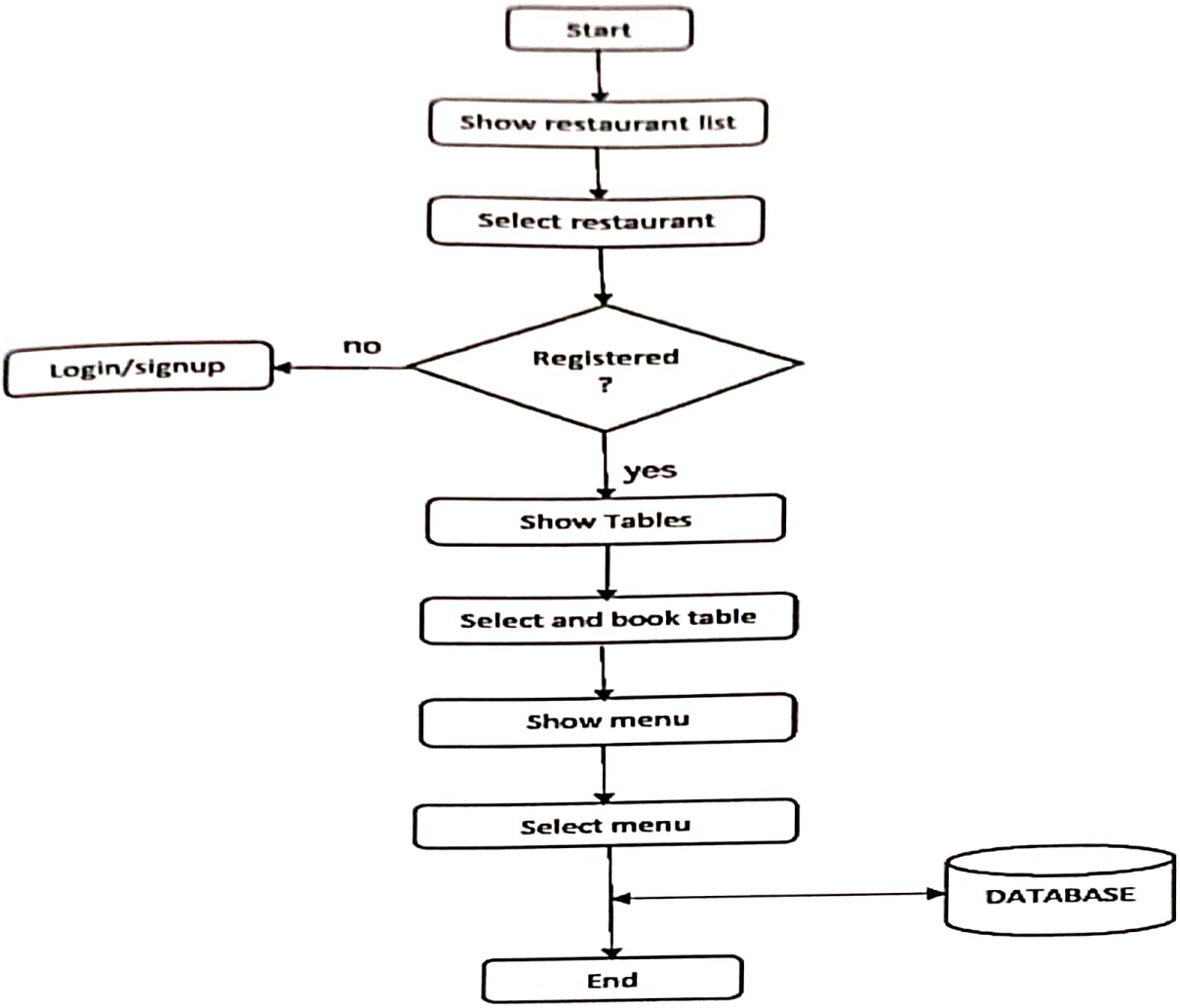

Fig 3.2. Workflow diagram

USE-CASE DIAGRAM:

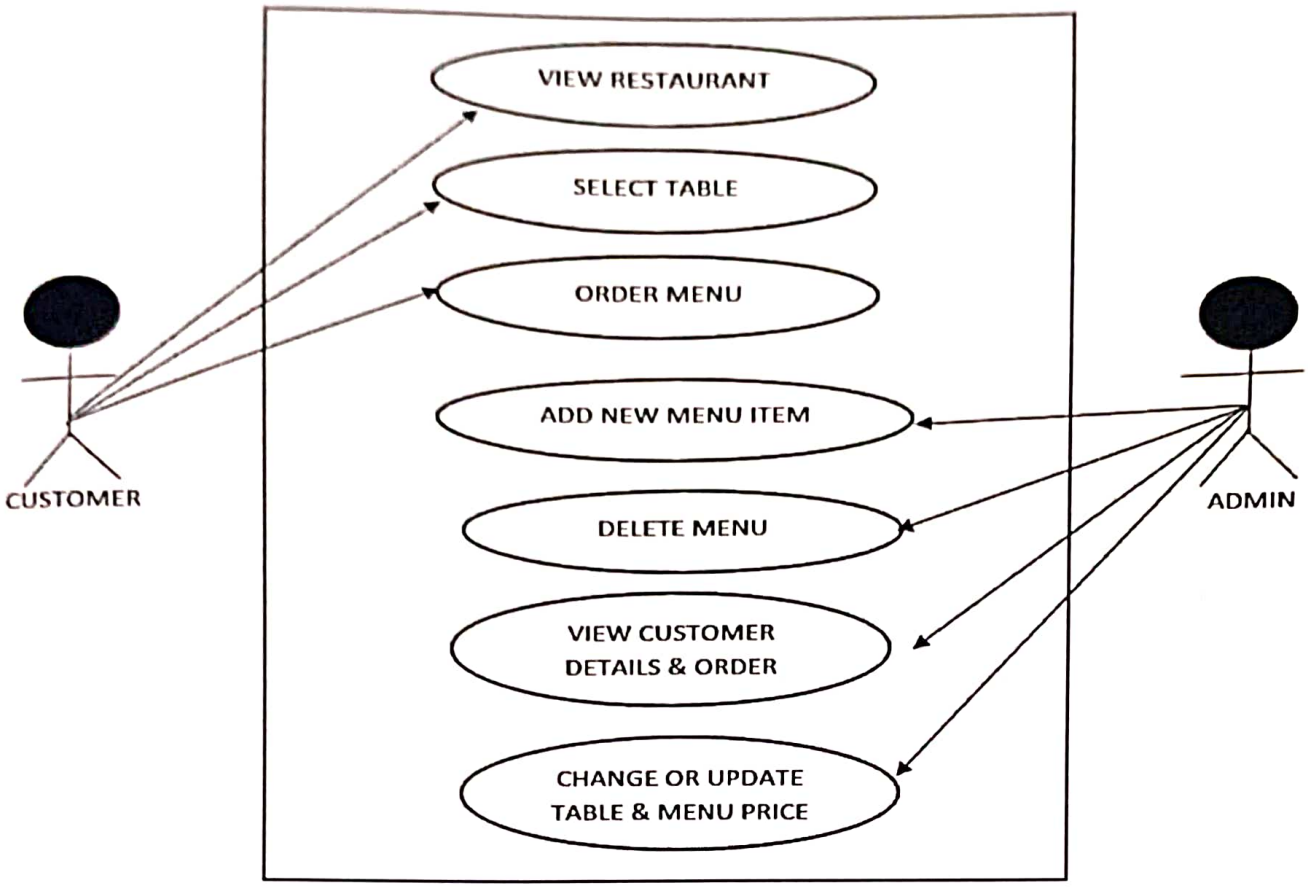

Fig 3.3. Use-case diagram

CLASS DIAGRAM:

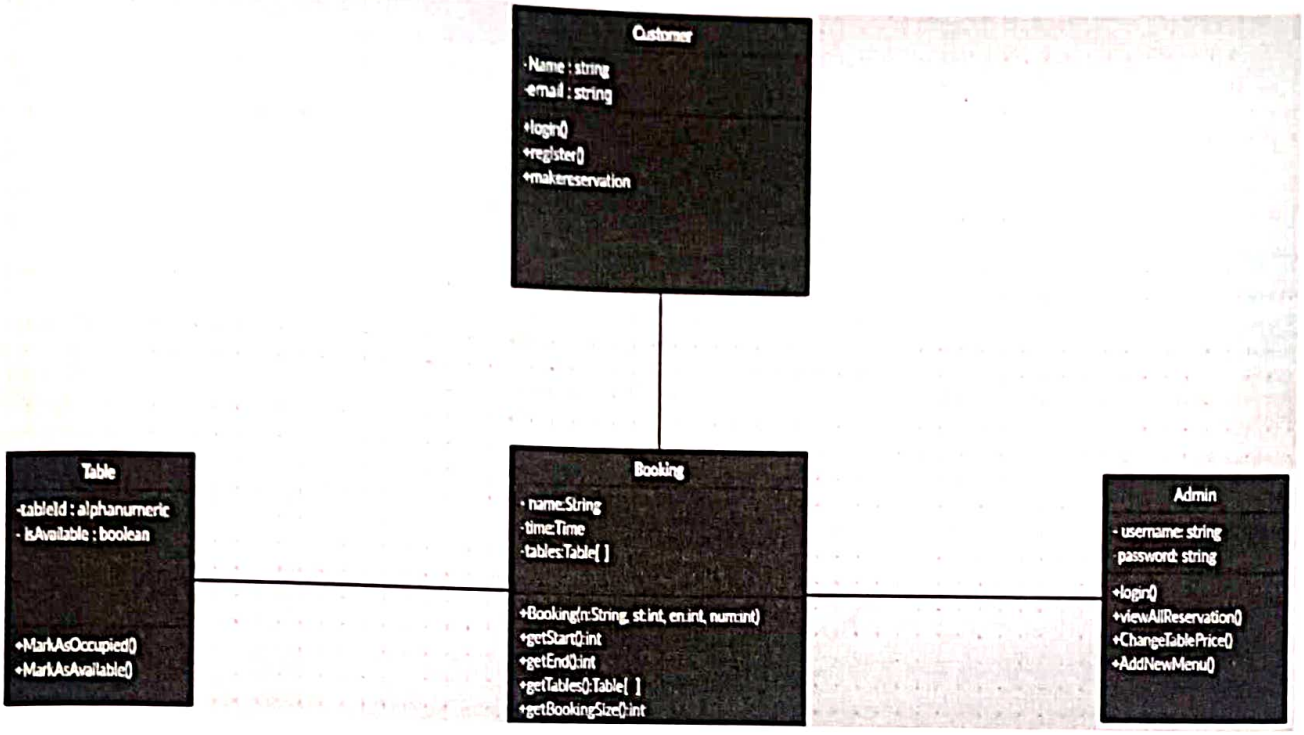

Fig 3.4. Class diagram

4. SNAPSHOTS:

Home Page:

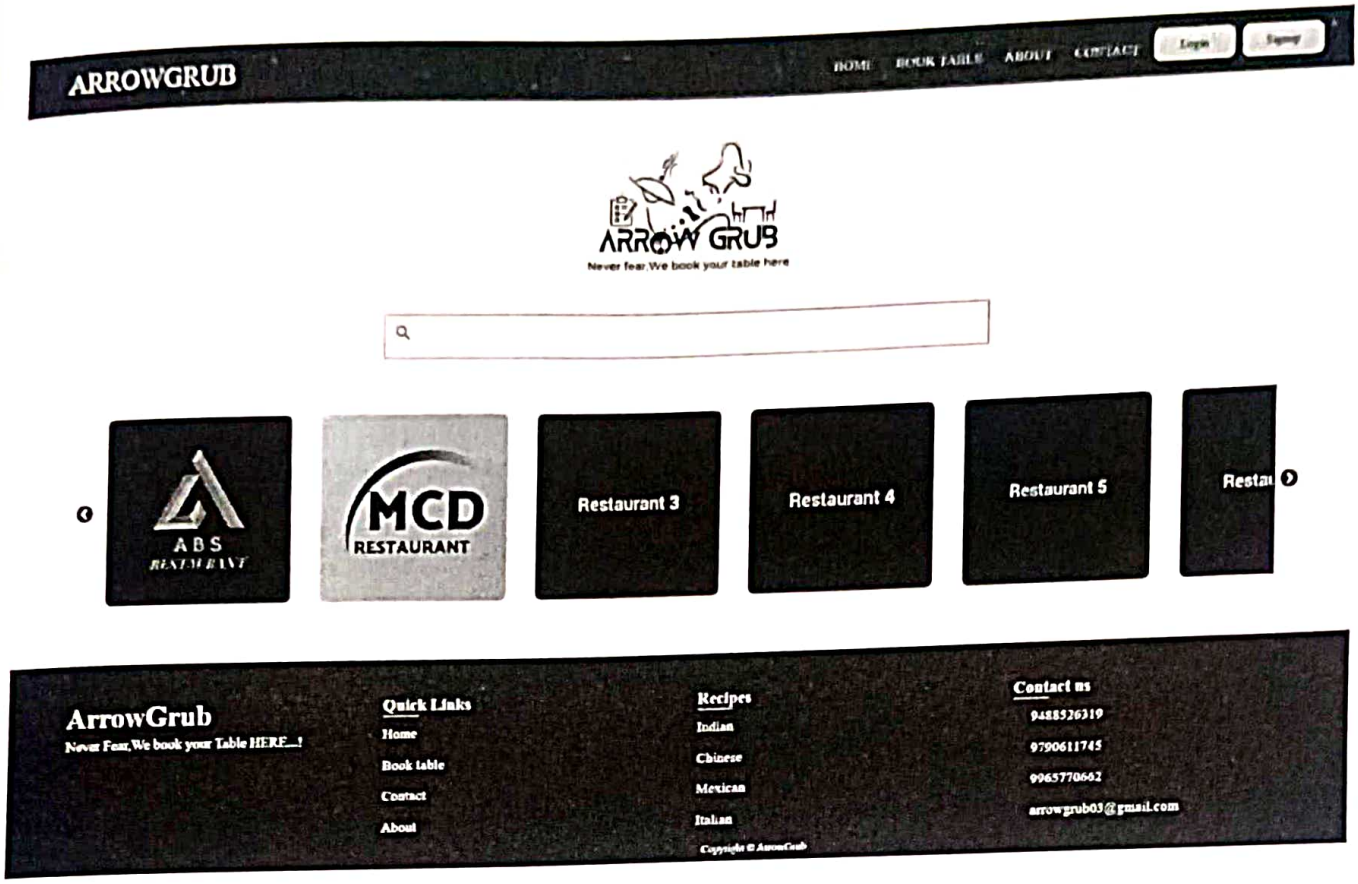

Fig 4.1. In this module, the customer can the list of restaurants given in the image carousal and they can also search their favourite restaurant in the given search bar.

Restaurant Overview:

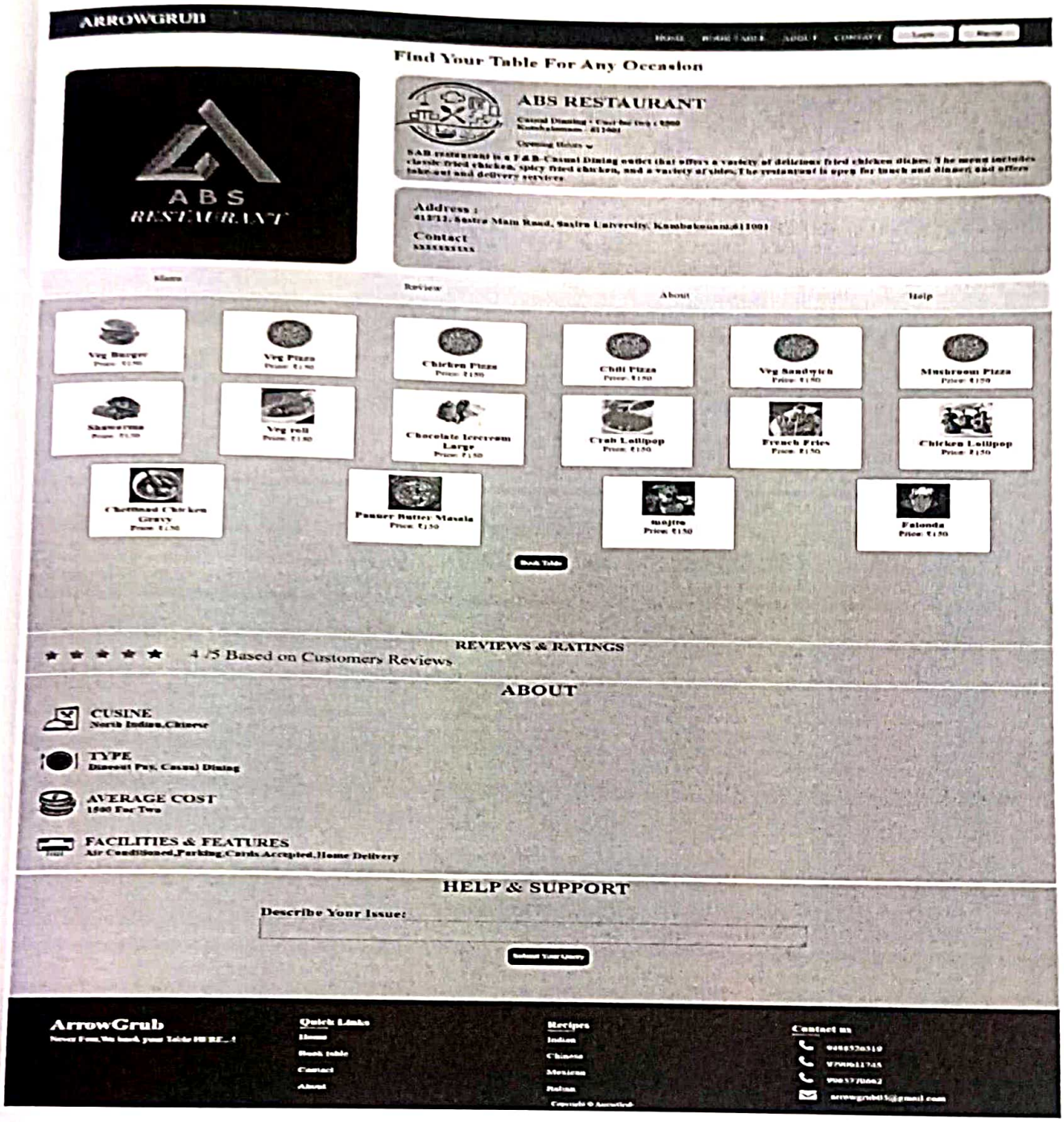

Fig.4.2. In this module, it contains the overall view of the selected restaurant.

Table Overview:

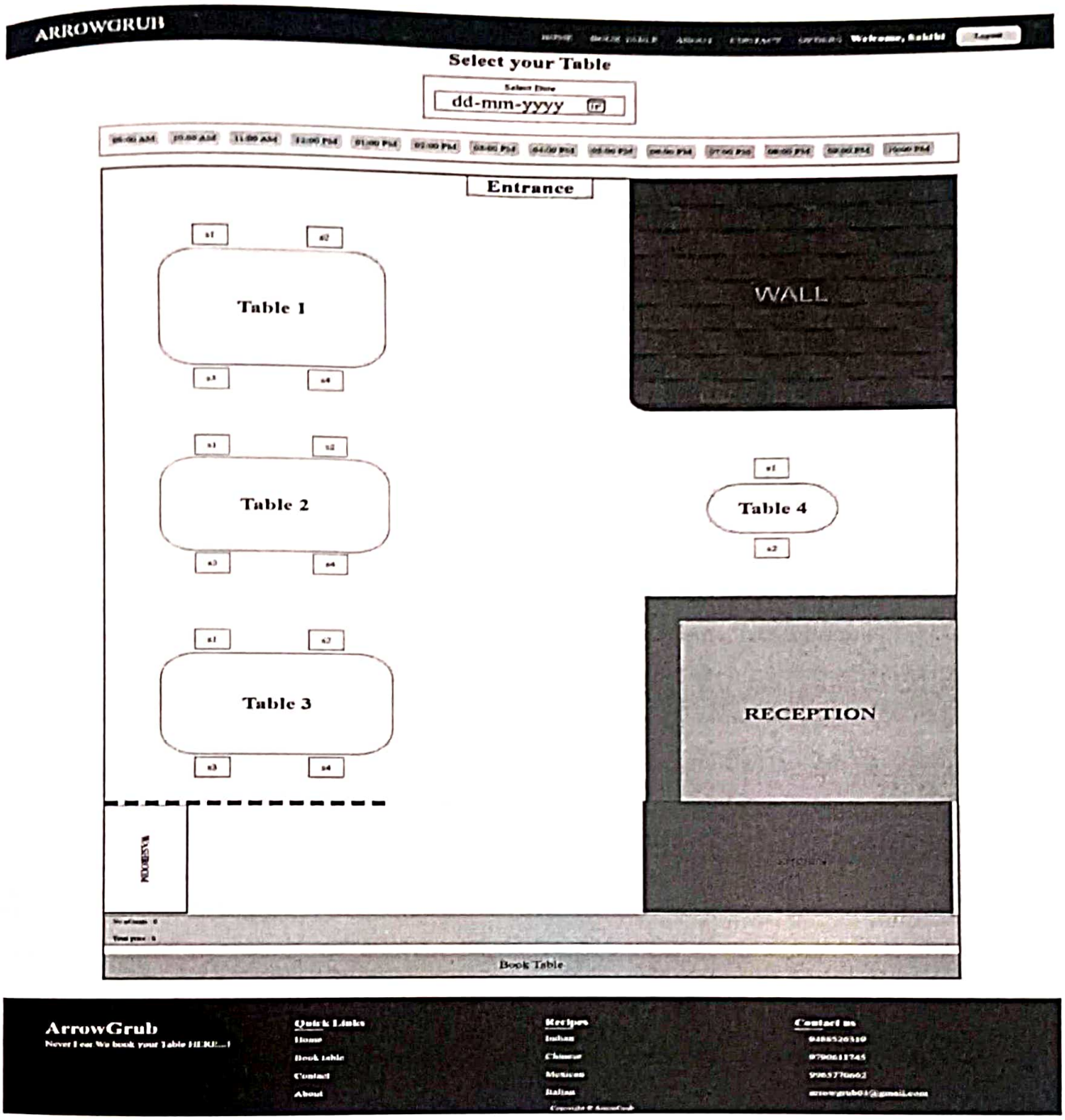

Fig.4.3. In this module, the customer can view, select and book their tables

Menu List:

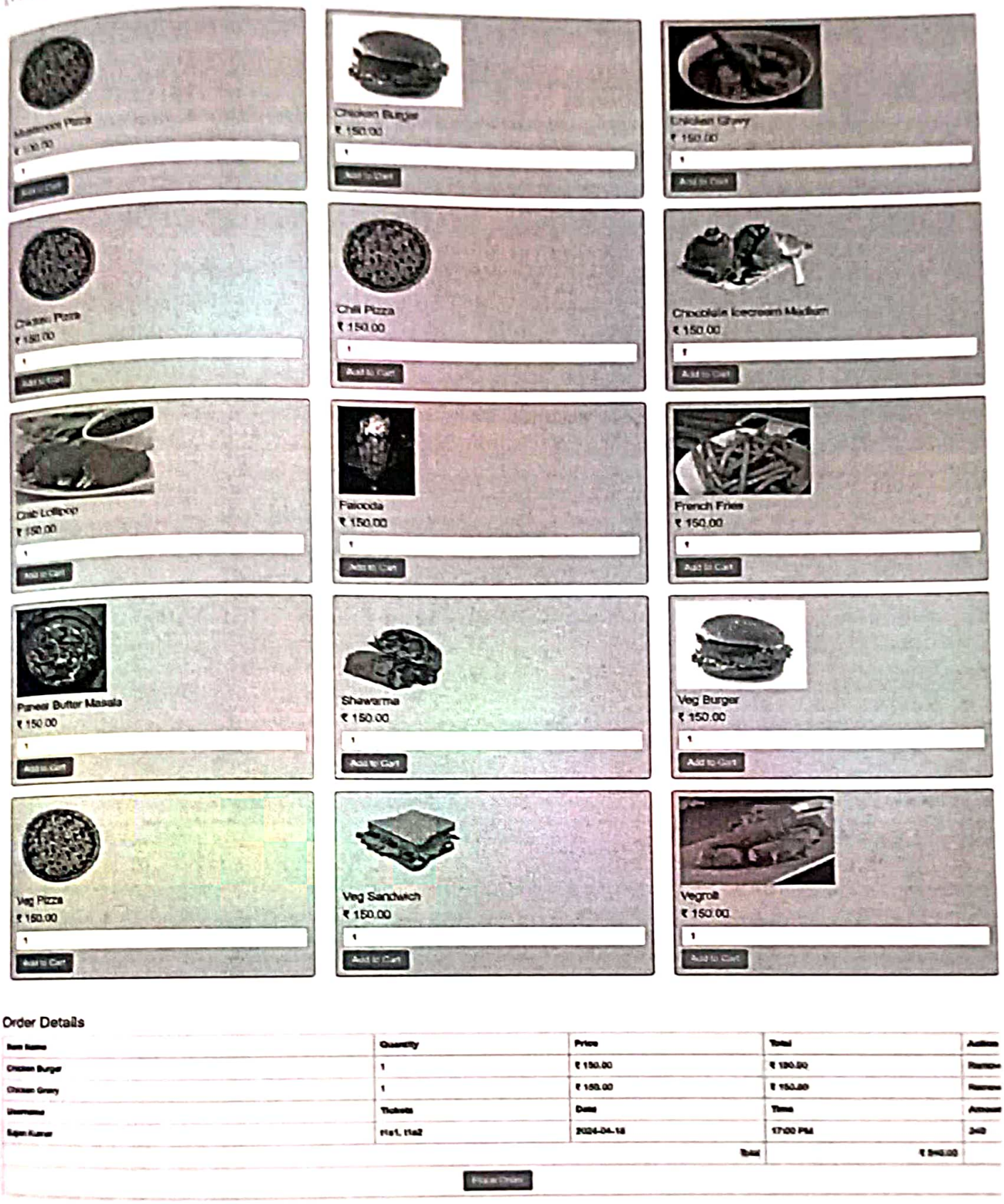

Fig 4.4. In this module, the customer can order their favourite menu dish in the given list.

Feedback Page:

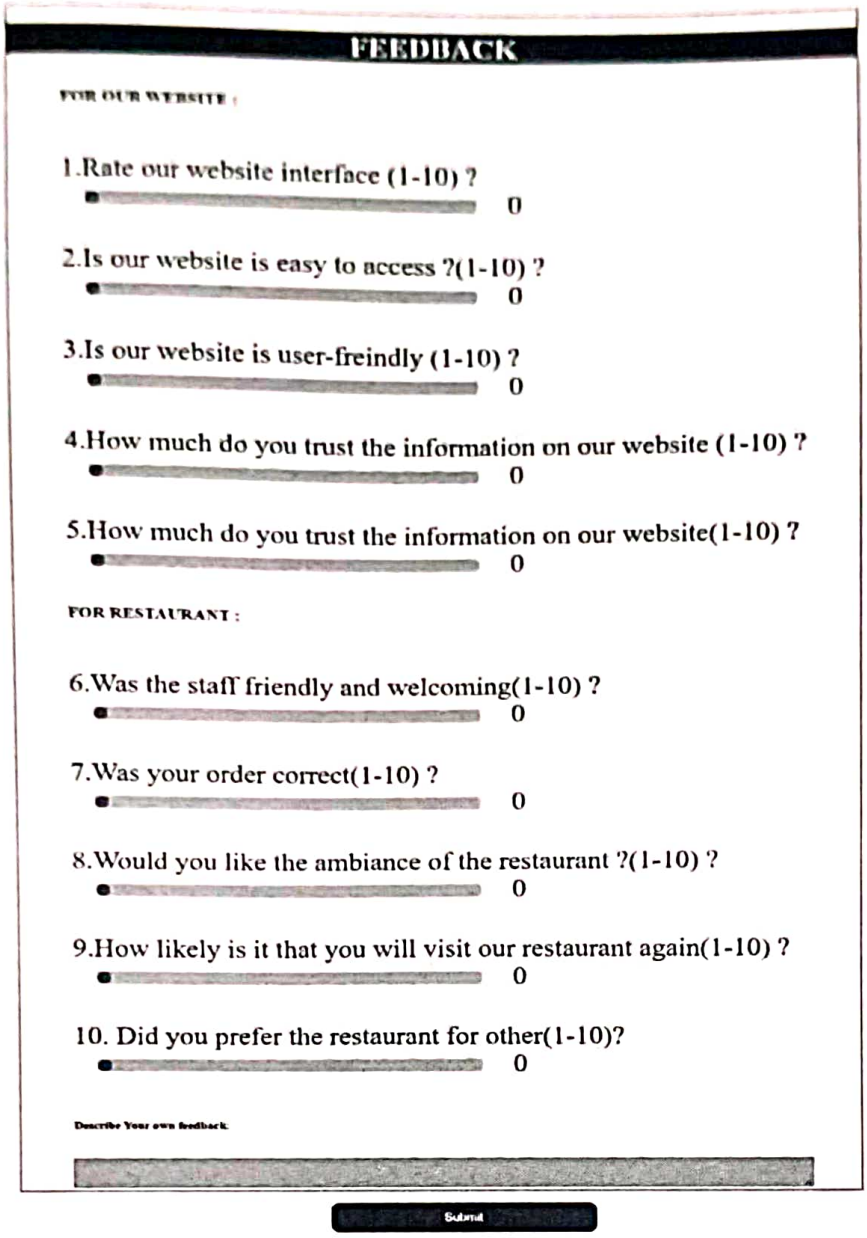

Fig 4.5. In this module, the customer can give the feedback about the website and restaurant.

About Page:

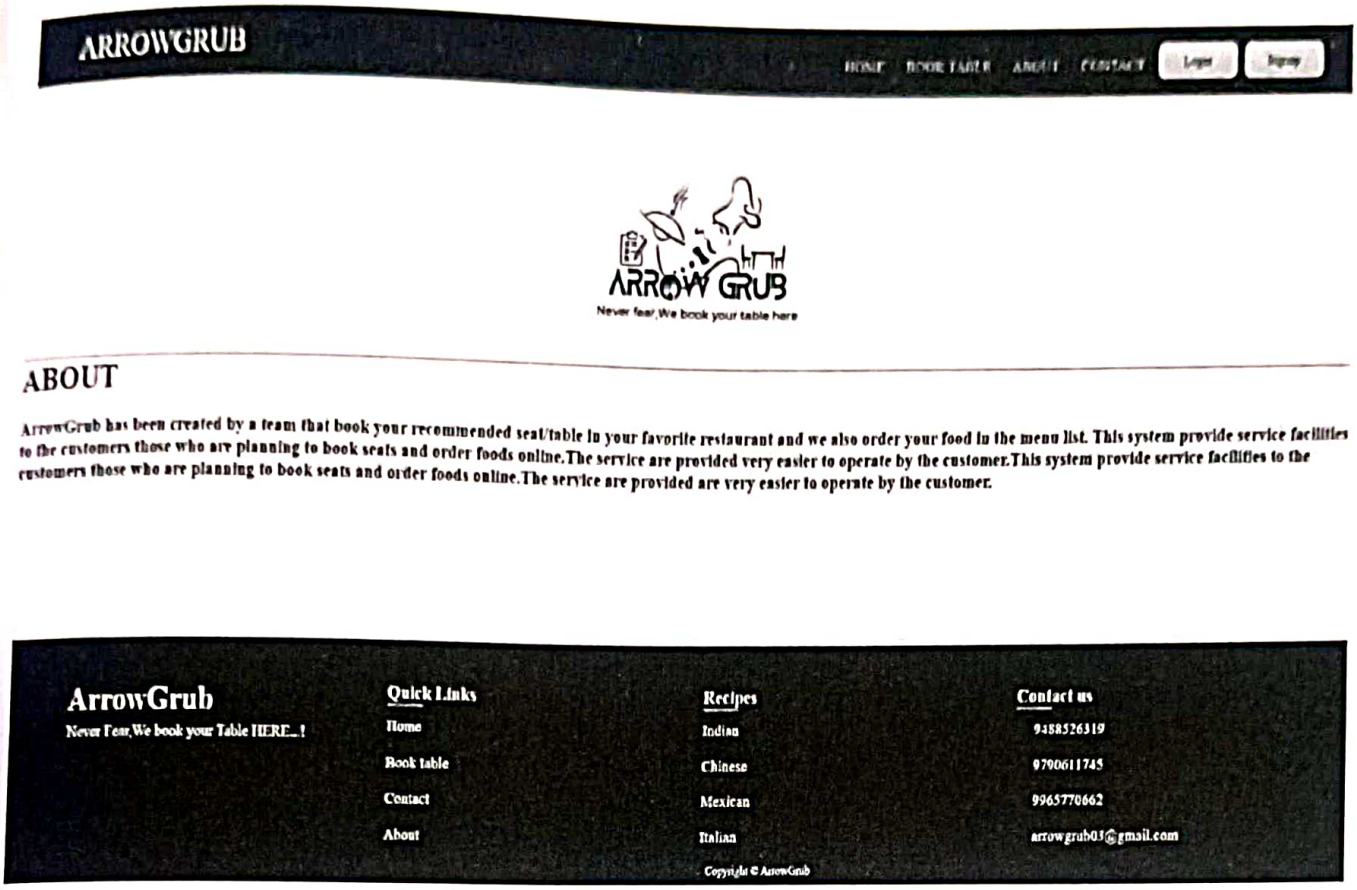

Fig 4.6. In this module, it shows the detail of the website.

7. METHODOLOGY

The user can log into the page and check the restaurant's availability. According to the client requirement user will choose the table and book that. The restaurant owner can also see the client details and table details and menu. The price of the table was changed dynamically based on the time and the time was restricted dynamically.

8. DATASET

This dataset has been downloaded from Kaggle Website. Here we are using the dataset namely Zomato Bangalore Restaurants. It provides table reservation details which has over 50000 records. To verify the objective 2000 records has been taken randomly.

9. TRAIN AND TEST DATA

Training a machine learning model, we must provide a sample data known as training data. The training data includes times and book_table. By analysing these examples, the model can recognize patterns and relationships between the features and labels. It is a separate set of data used to assess the model's performance. Since this is novel information, the model has never seen it before. It's vital to ensure that it can make precise predictions in real-world situations. Testing data also helps us identify any over-fitting issues. To evaluate the model thoroughly, we divide the data into two parts: 80% for training and 20% for testing. This helps us identify any over-fitting problems that might arise.

10. RESULT

After importing the data, we analysed using plots. The variables for categorical features and scaled other features. Then, the data is forwarded to Machine Learning algorithms and the results were given in percentage next to the algorithm logistic regression (86.25%).

As we can see from Figure 10.1 and 10.2 Model Evaluation results, logistic regression has given the accuracy of 0.8625.

OVERALL COUNT OF BOOK_TABLE:

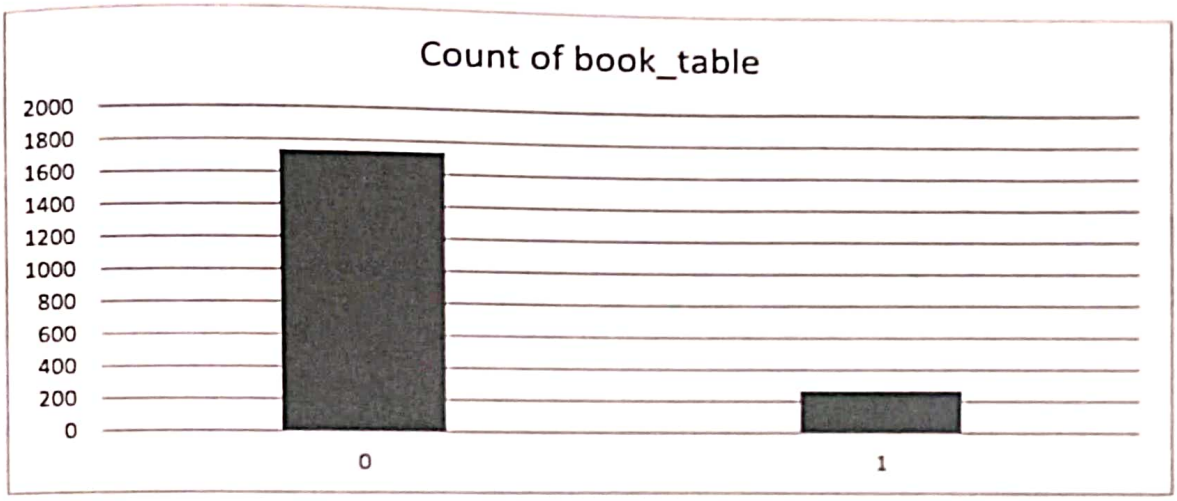

Fig 10.1. Count of book_table

INDIVIDUAL COUNT OF BOOK_TABLE:

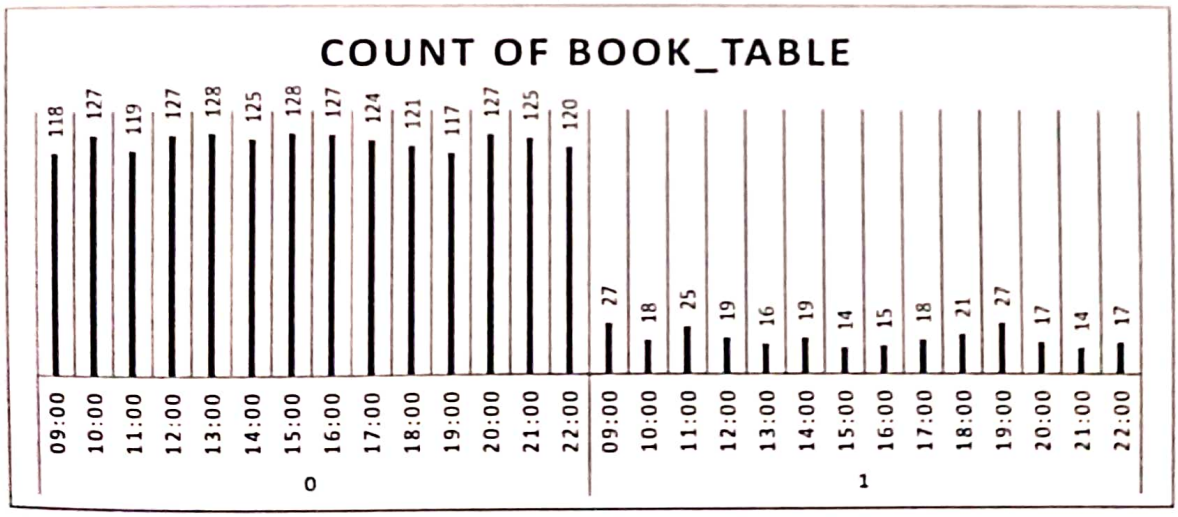

Fig 10.2 – Individual Count of Book_Table

11. CONCLUSIONS AND FUTURE ENHANCEMENTS

The project describes that if the customer visits the restaurant perhaps there is no table available the customer needs to wait so long. With the help of this system, the customer can select their desired table according to their wish. The customer can see the restaurant view exactly and select their seat and menu. It allows the client to book their table and menu without waiting for a long time. This system will get its important day by day.

The future enhancement of this project is to implement:

- **Send Notification:** The customer wants to book a table. but, it already reserved. Whether the reserved table is free, the customer got a notification "table is free".

- **Change seat colour:** The seat colour should be change to grey when it booked.

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