

PROJECT TITLE

*Project report submitted
in partial fulfillment of the requirement for award of the degree of*

**Bachelor of Technology
in
Computer Science & Engineering**

By

BODAPATI GOWTHAMI	(20UECS0145)
KANDIMALLA TRIVENI	(20UECS0457)
LAMBU LAVANYA	(20UECS1049)
VEERAGANDHAM DIVYANJALI	(20UECS1004)

1151CS204 - WEB PROGRAMMING

WINTER 2022-2023

*Under the guidance of
Dr.J.JAGANNATHAN,M.Tech., Ph.D.,
ASSOCIATE PROFESSOR*



**DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING
SCHOOL OF COMPUTING**

**VEL TECH RANGARAJAN DR. SAGUNTHALA R&D INSTITUTE OF
SCIENCE AND TECHNOLOGY**

(Deemed to be University Estd u/s 3 of UGC Act, 1956)

**Accredited by NAAC with A++ Grade
CHENNAI 600 062, TAMILNADU, INDIA
April,2023**

CERTIFICATE

It is certified that the work contained in the project report titled "RESTAURANT BOOKING WEBSITE" by "BODAPATI GOWTHAMI (20UECS0145), KANDIMALLA TRIVENI (20UECS0457), LAMBU LAVANYA (20UECS1049), VEERAGANDHAM DIVYANJALI (20UECS1004)" has been carried out under my supervision and that this work has not been submitted elsewhere for a degree.

Signature of Supervisor

Dr.J.JANGANNATHAN

M.Tech., Ph.D.,

ASSOCIATE PROFESSOR

Computer Science & Engineering

School of Computing

Vel Tech Rangarajan Dr.Sagunthala R&D

Institute of Science & Technology

April, 2023

Signature of Head of the Department

Computer Science & Engineering

School of Computing

Vel Tech Rangarajan Dr. Sagunthala R&D

Institute of Science & Technology

April, 2023

Signature of the Dean

Dr. V. Srinivasa Rao

Professor & Dean

Computer Science & Engineering

School of Computing

Vel Tech Rangarajan Dr. Sagunthala R&D

Institute of Science & Technology

April, 2023

DECLARATION

We declare that this written submission represents my ideas in our own words and where others' ideas or words have been included, we have adequately cited and referenced the original sources. We also declare that we have adhered to all principles of academic honesty and integrity and have not misrepresented or fabricated or falsified any idea/data/fact/source in our submission. We 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.

(Signature)

(BODAPATI GOWTHAMI

Date: / /

(Signature)

KANDIMALLA TRIVENI

Date: / /

(Signature)

LAMBU LAVANYA

Date: / /

(Signature)

VERRAGANDHAM DIVYANJALI

Date: / /

APPROVAL SHEET

This project report entitled (PROJECT TITLE (IN CAPITAL LETTERS)) by (STUDENT NAME1 (REGISTER NO), (STUDENT NAME2 (REGISTER NO), (STUDENT NAME3 (REGISTER NO), (STUDENT NAME4 (REGISTER NO) is approved for the degree of B.Tech in Computer Science & Engineering.

Examiners

Handling faculty

Dr.J.JANGANNATHAN

M.Tech., Ph.D.,

ASSOCIATE PROFESSOR

Date: / /

Place:

ABSTRACT

Our aim is to design a web based Application that can be used by customer to book the desired table and menu of their choice from a restaurant as per their convenience. Previously table reservation was manual which is ending up progressively in well-known restaurants but now a days people are getting into digital era of reservation of restaurants, and suppliers are considering to choose a digital system of booking. In manual system, everything depends upon waiter booking diary and there is no automated system for keeping the records. Today's generation encourages high tech services especially over the Internet. Hence the project is developed proficiently to help restaurant owners automate their business operations. In proposed reservation system, we provide facility to the customers to reserve table or menu or both according to their convenience. On booking menu the customer has to pay 50 percent amount in advance. The customer can cancel the booking if failed to arrive on time and hence book the table in the next possible time slot provided that the booking is cancelled before 30Min's of the selected time slot else the advance paid will not be refunded. The restaurant booking website project aims to develop a user-friendly, secure, and responsive website that allows users to book tables at their favorite restaurants easily. The website will provide users with the ability to search for restaurants based on their location, cuisine, and availability, and make online reservations for tables. The website will also provide restaurant owners with a platform to manage their bookings and optimize their operations. The project will involve various stages of development, including requirements gathering, design, development, testing, and deployment. Through this project, we aim to enhance the dining experience for customers by simplifying the booking process and providing restaurant owners with a tool to manage their operations more efficiently.

Keywords: Android Application, Menu Booking, Restaurant booking, online reservations, user-friendly, secure, responsive, location-based search, cuisine-based search, optimization.

LIST OF FIGURES

3.1	Architecture Diagram	4
3.2	Data Flow Diagram	5
3.3	Home page	6
3.4	Signup and Login page	6
3.5	Form validation	7
3.6	Parse the webpage using JQuery and DOM	7
3.7	Database Connectivity through PHP	8
3.8	Creation of Webserver using Node Js	8
3.9	Design of Three Tier application using Node js and MySQL	9
3.10	Design of Responsive page using Angular	9
3.11	Creation of Microservices	10
3.12	Deployment of Microservices	10
5.1	Test Image	13

LIST OF TABLES

LIST OF ACRONYMS AND ABBREVIATIONS

abbr	Abbreviation
------	--------------

TABLE OF CONTENTS

	Page.No
ABSTRACT	iv
LIST OF FIGURES	v
LIST OF TABLES	vi
LIST OF ACRONYMS AND ABBREVIATIONS	vii
1 INTRODUCTION	1
1.1 Introduction	1
1.2 Aim of the project	1
1.3 Project Domain	1
1.4 Scope of the Project	2
1.5 Methodology	2
2 REQUIREMENT SPECIFICATION	3
2.1 User characteristics	3
2.2 Dependencies	3
2.3 Software specification	3
3 WEBSITE DESIGN	4
3.1 Sitemap	4
3.2 Design Phase	5
3.2.1 Data Flow Diagram	5
3.3 Front End and Back End Design	6
3.3.1 Home Page	6
3.3.2 Signup and Login page	6
3.3.3 Form Validation	7
3.3.4 Parse the webpage using JQuery and DOM	7
3.3.5 Database Connectivity through PHP	8
3.3.6 Creation of Webserver using Node Js	8
3.3.7 Design of Three Tier application using Node js and MySQL	9

3.3.8	Design of Responsive page using Angular	9
3.3.9	Creation of Microservices	10
3.3.10	Deployment of Microservices	10
4	TESTING	11
4.1	Testing	11
4.1.1	Test Result	11
4.1.2	Test Bugs	12
5	WEBSITE LAUNCH	13
6	RESULTS AND DISCUSSIONS	14
6.1	Website performance	14
6.2	Security	14
6.3	Responsiveness and mobile-friendliness	15
7	CONCLUSION AND FUTURE ENHANCEMENTS	16
7.1	Conclusion	16
7.2	Future Enhancements	16
8	SOURCE CODE	17
9	SCREENSHOTS	18
	References	18

Chapter 1

INTRODUCTION

1.1 Introduction

This application is a convenient self-service table menu booking system. With this system the booking process can be customized, manage restaurant availability reservations. The admin-portal is being managed by the owner to check the booking and make the availability for the customer. The services provided are menu table booking managed by the customer through the system. Main objective is to provide ordering and reservation service to the customer. The built-in reservation management system allows admins to add, edit and delete reservations, manage client data and availability. The major goal of this task is to enable the owner of a restaurant to deal directly with the clients. In addition, it can place client's requests to discover free tables as indicated by their own need of particular required number of seats in his choice area. This idea is discovered by keeping in mind the fact that people consider it a pain to go to the restaurant because of sheer amount of time required to find a desired one.

1.2 Aim of the project

Our aim is to design a web based Application that can be used by customer to book the desired table and menu of their choice from a restaurant as per their convenience. Previously table reservation was manual which is ending up progressively in well-known restaurants but now a days people are getting into digital era of reservation of restaurants, and suppliers are considering to choose a digital system of booking.

1.3 Project Domain

The principal domain of our website should always be to attract customers to our restaurant and as such an online booking function is the most essential feature. This may lead to another page with your restaurant's opening times and telephone number for those wanting to make reservations by phone.

1.4 Scope of the Project

To determine the nature of on-line restaurant and to determine the documentation for on-line restaurant Management system. The study focuses on the appraisal of the Documentation for On-line restaurant management system.

1.5 Methodology

The user's first interaction with the system is with an HTML page named 'Index.html', which redirects to the login page. If the user was already a registered one, they can proceed with login with the help of their credentials. Else, users can register by going to the registration page by clicking on the register button. The navigation bar on this page contains a live-updated food menu. User can select the required items and add them to the cart. Once satisfied with his selection, they can proceed to the payment module. After payment, the table reservation page is accessed. This page shows the billing details (containing food items, their respective cost along total cost) along with the reserved table and parking slot details.

Chapter 2

REQUIREMENT SPECIFICATION

2.1 User characteristics

- User-friendly Design
- Calendar and preferences
- Pre-ordering Option
- Automatic communication

2.2 Dependencies

- Device compatibility
- Database
- Web server
- Payment gateway Shipping and logistics

2.3 Software specification

- User interface
- Order catalog
- Customer Service
- User account

Chapter 3

WEBSITE DESIGN

3.1 Sitemap

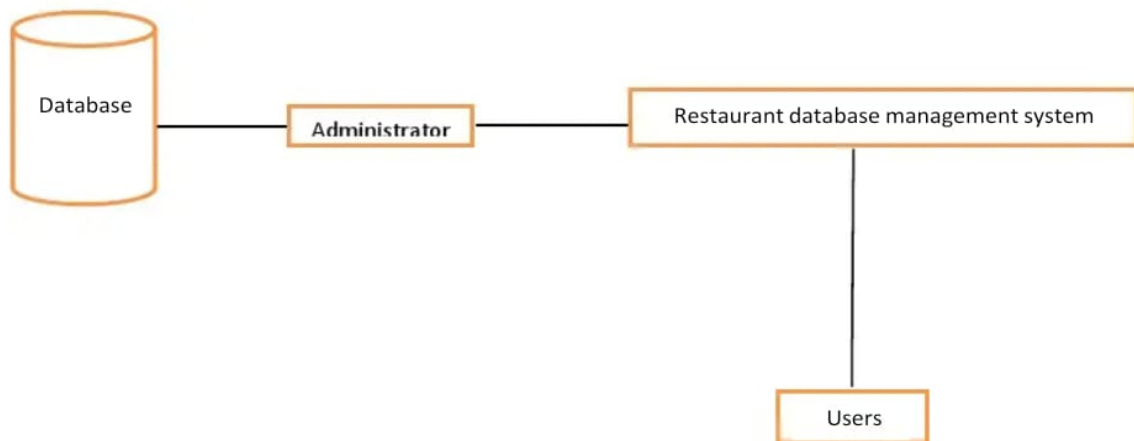


Figure 3.1: **Architecture Diagram**

Currently, developers of restaurant food ordering and reservations are shifting from procedural programming to Object Oriented Programming. The entire architecture has changed from just writing one's own codes with any particular programming language to what is called Frameworks. Developers now depend on Frameworks to build more robust and powerful applications for food vendors. There are several frameworks available in PHP. A controller offers facilities to change the state of the model. The controller interprets the mouse and keyboard inputs from the user, commanding the model and/or the view to change as appropriate. A controller is the means by which the user interacts with the application.

3.2 Design Phase

3.2.1 Data Flow Diagram

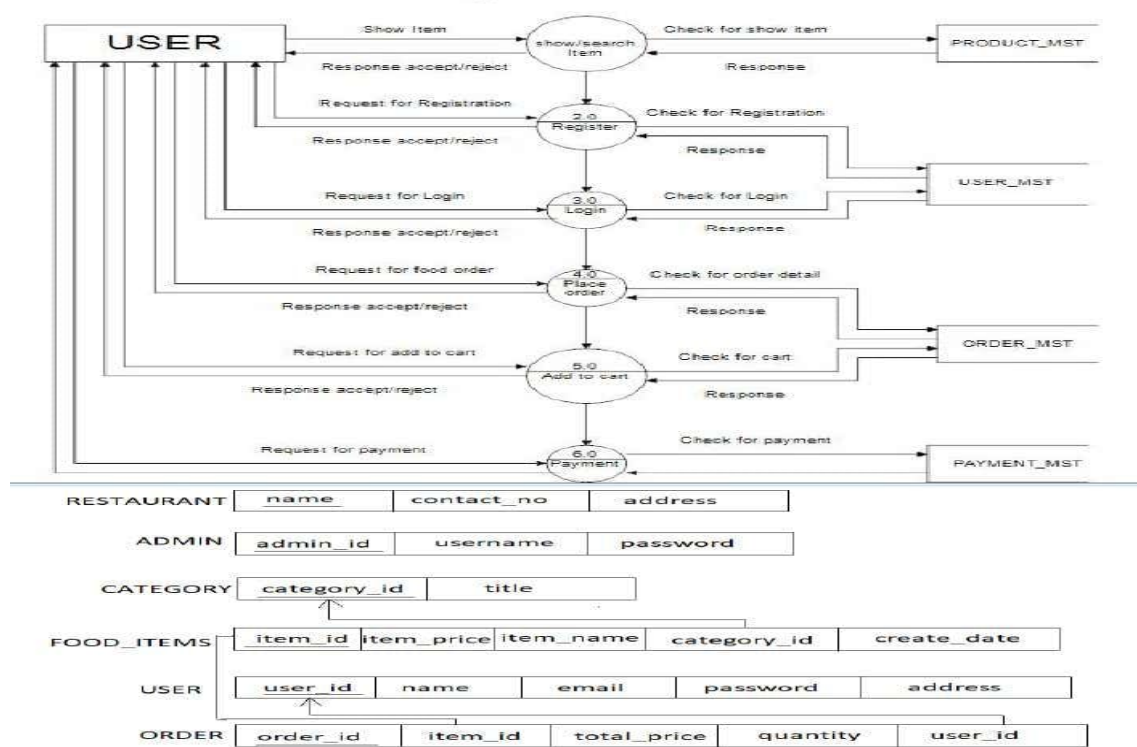


Figure 3.2: Data Flow Diagram

3.3 Front End and Back End Design

3.3.1 Home Page

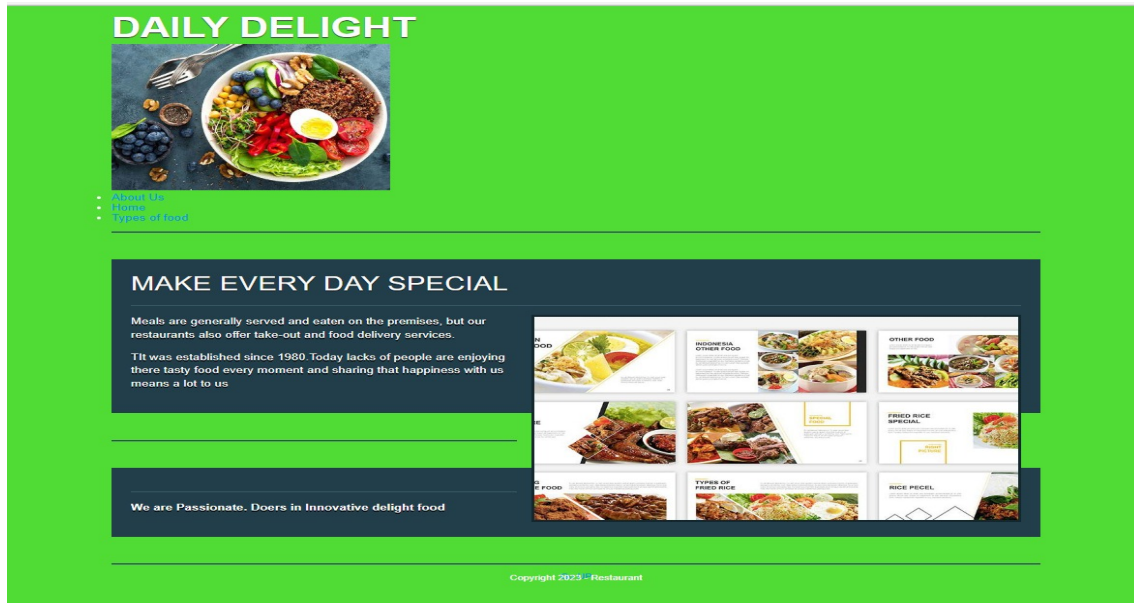


Figure 3.3: Home page

3.3.2 Signup and Login page

BOOK YOUR TABLE

Your Name *

Phone Number *

Enter Email Address

Address

Table

1

Select Date 12-02-2013

☐ I hereby agree to the [Terms and Conditions](#).

Book Now

Figure 3.4: Signup and Login page

3.3.3 Form Validation

FOOD BOOKING FORM

Name:

Address:

E-mail Address:

Telephone:

Order Your Food

CUISINE ▾

Comments:

send

Reset

Figure 3.5: Form validation

3.3.4 Parse the webpage using JQuery and DOM

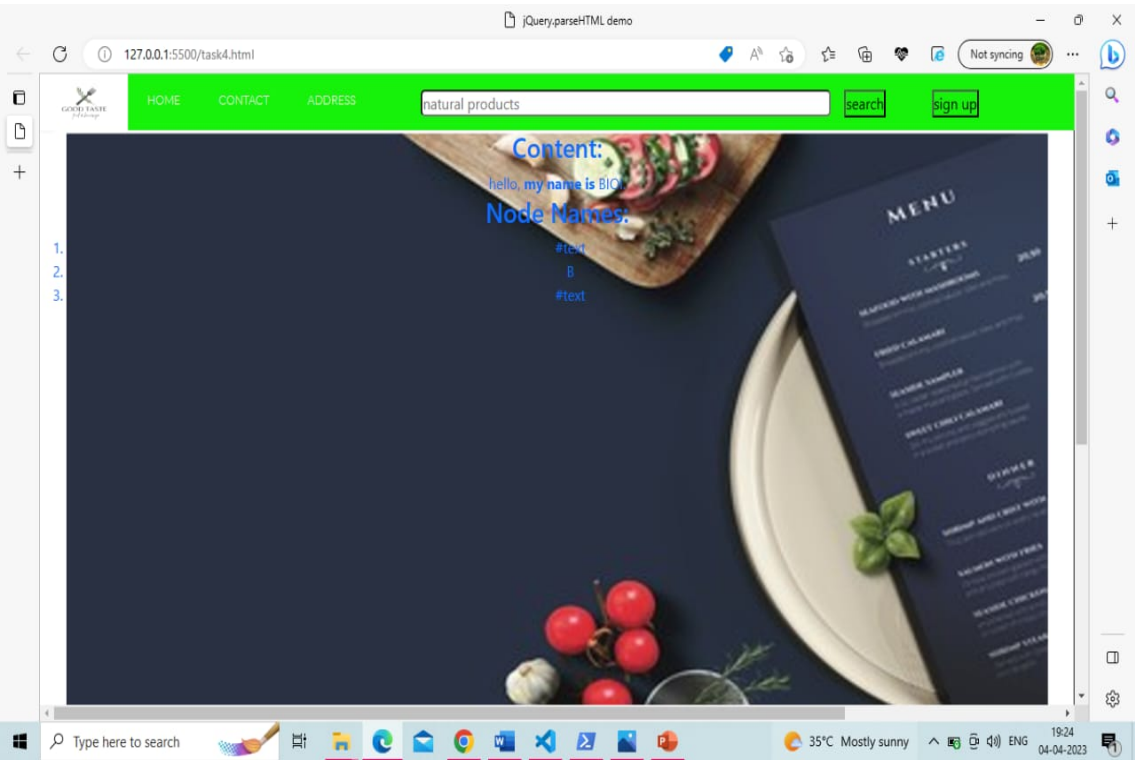


Figure 3.6: Parse the webpage using JQuery and DOM

3.3.5 Database Connectivity through PHP

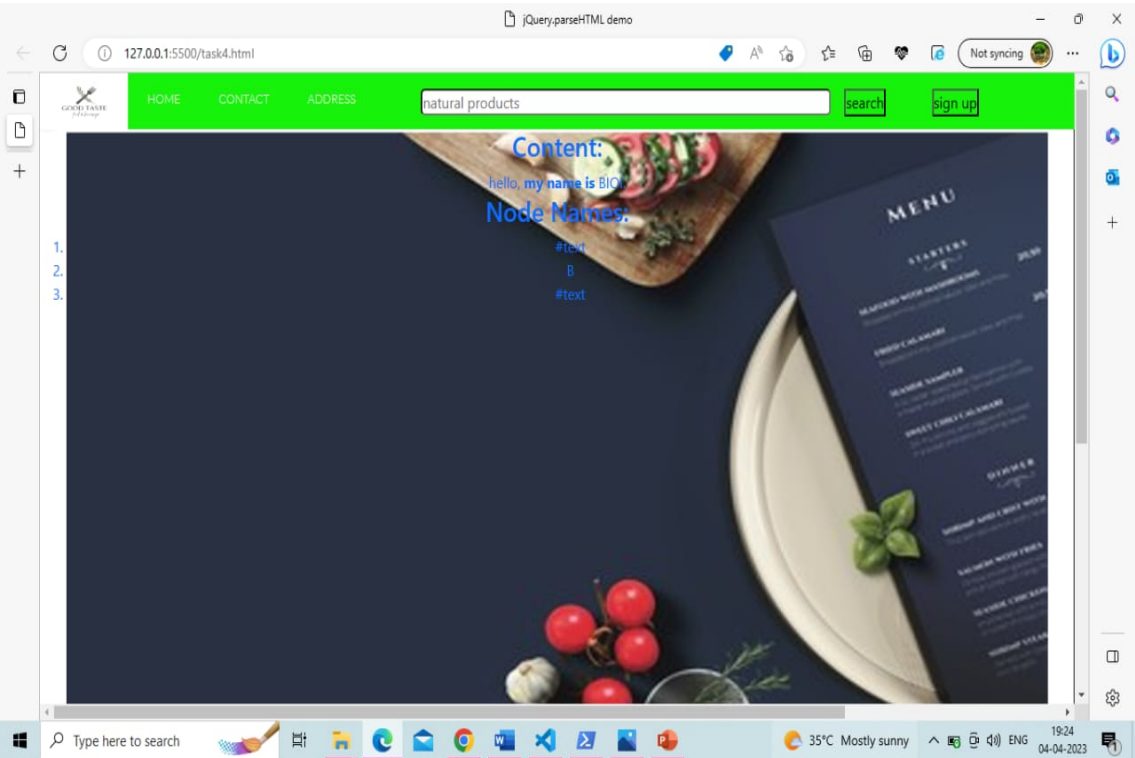


Figure 3.7: Database Connectivity through PHP

3.3.6 Creation of Webserver using Node Js

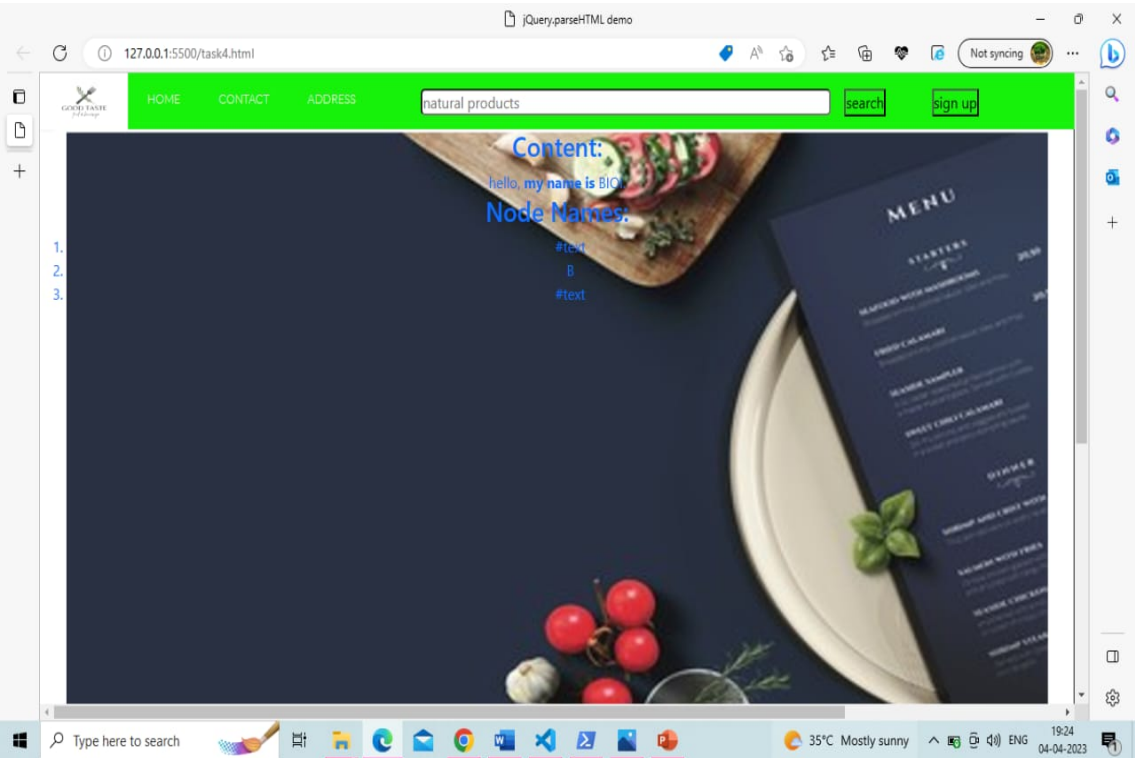


Figure 3.8: Creation of Webserver using Node Js

3.3.7 Design of Three Tier application using Node js and MySQL

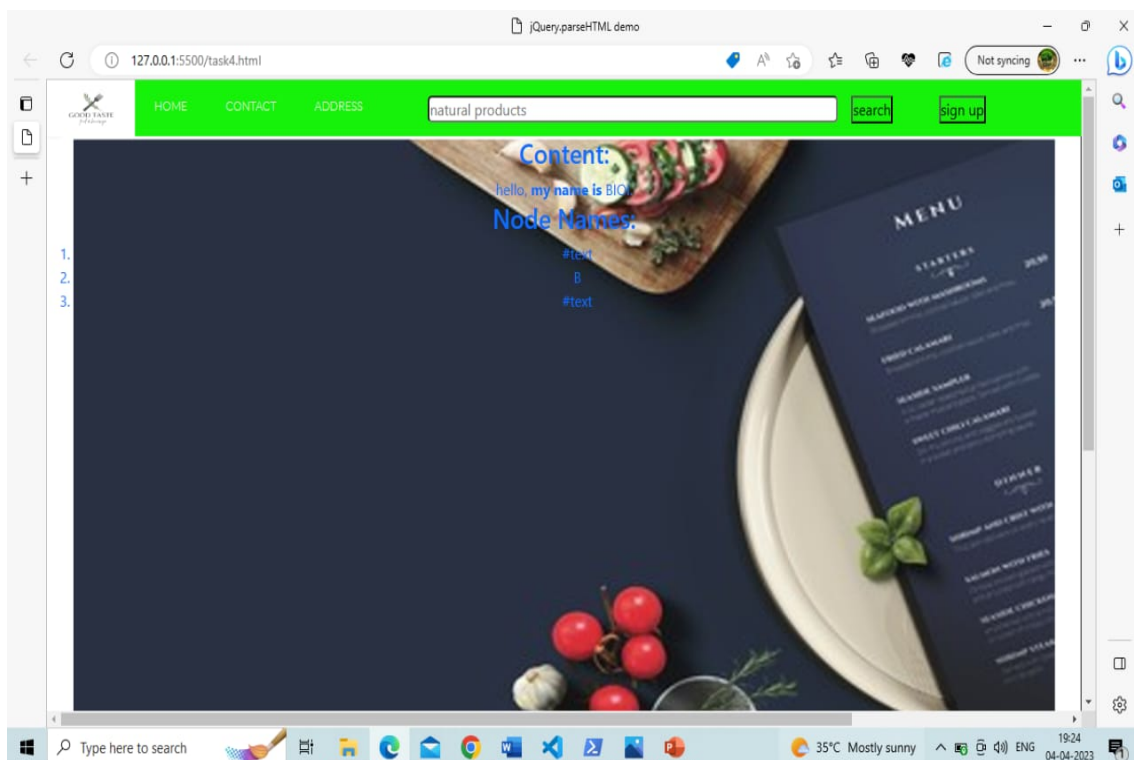


Figure 3.9: Design of Three Tier application using Node js and MySQL

3.3.8 Design of Responsive page using Angular

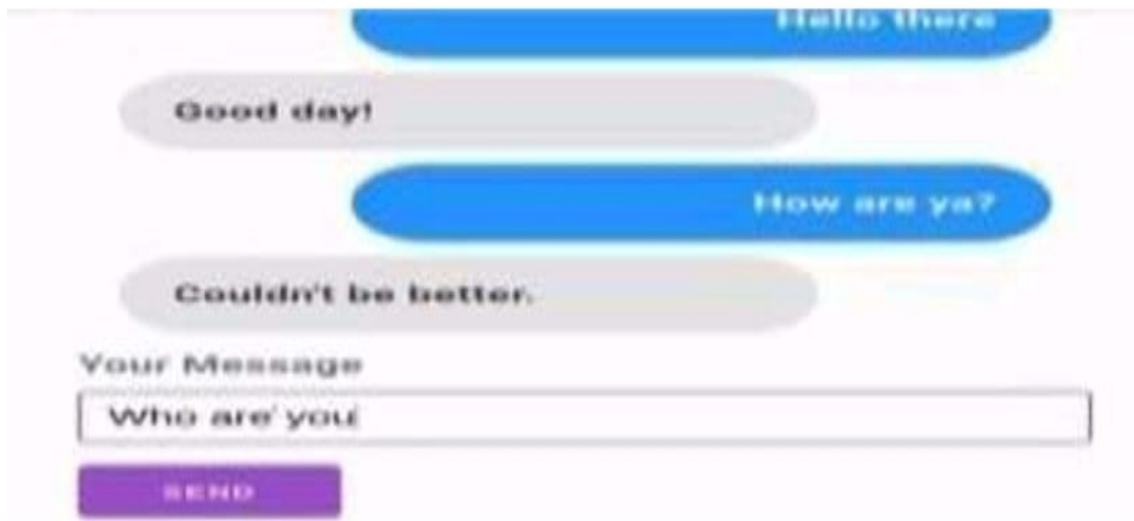


Figure 3.10: Design of Responsive page using Angular

3.3.9 Creation of Microservices

```
[{file:'c',rank:'4'},  
{file:'d',rank:'5'},  
{file:'e',rank:'4'},  
{file:'d',rank:'3'},  
{file:'b',rank:'4'},  
{file:'d',rank:'6'},
```

Figure 3.11: Creation of Microservices

3.3.10 Deployment of Microservices

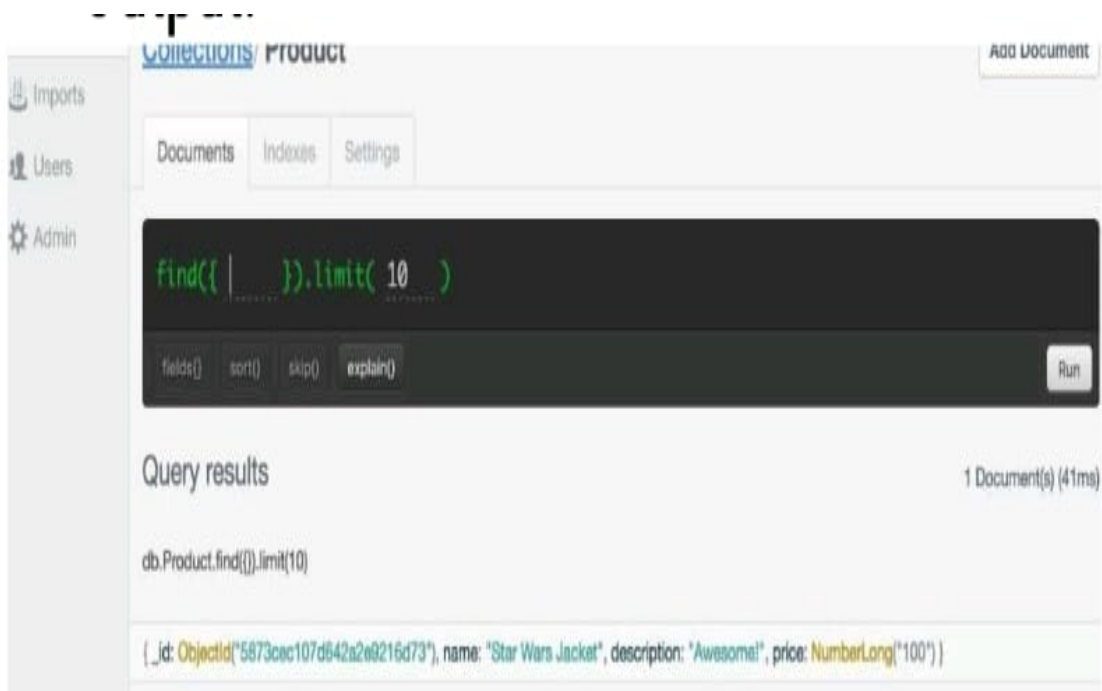


Figure 3.12: Deployment of Microservices

Chapter 4

TESTING

4.1 Testing

Here are some types of testing that can be done on a restaurant booking website

Functional testing

This type of testing is focused on ensuring that all the features and functionalities of the website are working as expected. It includes testing features such as restaurant search, reservation booking, payment processing, and user registration.

usability testing

This type of testing is focused on the user experience and ensuring that the website is easy to use and navigate. It involves testing elements such as website layout, navigation, forms, and calls to action.

4.1.1 Test Result

The website performs well under different conditions such as high traffic or heavy usage. Response time is fast, indicating that the website is able to handle a large number of simultaneous users making bookings. Server load is within acceptable limits, indicating that the website is able to handle a large amount of data and traffic. The website is secure and not vulnerable to any security threats such as hacking or data breaches. Vulnerability reports have been addressed and any issues have been fixed. The website works correctly on different devices, operating systems, and web browsers. The website has been tested on various devices and browsers, and is found to be compatible with them. Customer data is protected and stored securely.

4.1.2 Test Bugs

Functional bugs: These are bugs that affect the basic functionality of the website, such as errors in form validation, incorrect data display, or broken links. These bugs can prevent users from completing their booking process or cause confusion during the booking process.

Usability bugs: These are bugs that affect the user experience of the website, such as confusing navigation, unclear instructions, or difficulty in finding important information. These bugs can make the website difficult to use and frustrating for users.

Performance bugs: These are bugs that affect the performance of the website, such as slow page load times, server errors, or unresponsive pages. These bugs can cause frustration for users and lead to lost bookings.

Security bugs: These are bugs that affect the security of the website, such as vulnerabilities that could lead to data breaches or hacking attempts. These bugs can put user data at risk and damage the reputation of the restaurant.

Compatibility bugs: These are bugs that affect the compatibility of the website with different devices, operating systems, and web browsers. These bugs can prevent some users from accessing the website or cause the website to display incorrectly on certain devices or browsers.

Accessibility bugs: These are bugs that affect the accessibility of the website for users with disabilities, such as missing or incorrect alternative text for images, lack of keyboard navigation, or poor color contrast. These bugs can prevent users with disabilities from using the website effectively.

Chapter 5

WEBSITE LAUNCH

images/s4.png

Figure 5.1: **Test Image**

Chapter 6

RESULTS AND DISCUSSIONS

6.1 Website performance

Website performance is a critical factor in user experience and can have a significant impact on the success of a website. One of the most critical factors in website performance is the time it takes for your pages to load. Slow loading pages can lead to a poor user experience and can cause users to abandon your website. To optimize page load time, you can use techniques like optimizing images, minifying CSS and JavaScript files, and using a content delivery network (CDN) to serve static content. The server response time is the time it takes for your server to respond to a user's request. A slow server response time can also lead to a poor user experience. To optimize server response time, you can use techniques like using a high-performance web server, optimizing database queries, and reducing the number of HTTP requests. With an increasing number of users accessing websites on their mobile devices, it's important to ensure that your website is optimized for mobile devices. This includes using a responsive design that adapts to different screen sizes and using optimized images and content for mobile devices.

6.2 Security

A restaurant booking website should prioritize security to protect both the business and customers. SSL/TLS encryption is a standard security protocol that encrypts data transmitted between a website and a user's browser. It's important to use SSL/TLS encryption to protect sensitive data like login credentials, personal information, and credit card details. When it comes to processing payments, it's crucial to use secure payment gateways that comply with industry standards like PCI DSS. This includes using strong encryption, tokenization, and fraud detection tools to protect customer payment data. Regular backups are essential for protecting your website against data loss and corruption. It's important to perform regular backups of your website and database and store them in a secure offsite location.

6.3 Responsiveness and mobile-friendliness

With more and more people accessing websites on their mobile devices, it's important to ensure that your restaurant booking website is responsive and mobile-friendly. Here are some key areas to consider for optimizing the responsiveness and mobile-friendliness of your website. Responsive design is a web design approach that ensures that a website is optimized for different screen sizes, including desktop, tablet, and mobile. By using a responsive design, you can ensure that your website looks and functions correctly on all devices. Mobile-first design is an approach that prioritizes designing for mobile devices first, then scaling up to larger screens. This approach can help ensure that your website is optimized for the most common device type and can improve the user experience on mobile devices. Mobile users are often on-the-go and have limited patience for slow-loading websites. It's important to optimize your website for fast loading times by minimizing image sizes, reducing the number of HTTP requests, and using a content delivery network (CDN). Touch-friendly design refers to designing for mobile devices with touchscreens. Ensure that your website is optimized for touchscreens by using large buttons and links, avoiding hover effects, and ensuring that all interactive elements are easy to tap.

Chapter 7

CONCLUSION AND FUTURE ENHANCEMENTS

7.1 Conclusion

The project has concluded that if a customer is willing to visit any restaurant and finds no table is available for the meal then the customer has to wait long for the table availability. With the help of this application the customer can choose the desired table according to the location. E.g. Table can be reserved as according to number of members. Moreover, the customer can easily see pictures of interior from the Application. Keeping in view the demand of proposed project that gives a series of services and provides the customer to book a table and menu without waiting for a long time through an android application. This application will get its importance as day by day people are getting into android and fast life.

7.2 Future Enhancements

Delivery function has to added to the system because restaurant in planning to give that facility. Most of the customers suggested about mobile application and planning to implement that function also. Report generation part must be implemented more than this. Implementing a loyalty program can be a great way to incentivize repeat business and reward loyal customers. Customers can earn points or rewards for each order they place and can redeem them for discounts or free items. Integrating social media into your website can help to increase engagement and reach a wider audience. You can include social media sharing buttons on your website and allow users to sign in or register using their social media accounts. Implementing an advanced search function can make it easier for customers to find the restaurant, menu items, and availability they are looking for. You can allow customers to search by location, cuisine, dietary restrictions, and availability.

Chapter 8

SOURCE CODE

Chapter 9

SCREENSHOTS