

CREATIVE DESIGN HUB II PROJECT REPORT RESTAURENT TABLE BOOKING WEBSITE

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CERTIFICATE

This Is To Certify That **Chhugani Meet (20230905090052)**, Of 4th Semester IT Has Satisfactory Completed His Creative Designing hub - II(**BETXX14361**) Under My Guidance And The Project Report Entitled **Creative Design Hub -II** Project Report Has Been Submitted During The Academic Year 2024-25.

Internal Guide

Head Of The Department



Gyanmanjari Innovative University, Bhavnagar

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Internal Guide

Head Of The Department

DECLARATION

I Hereby Declare That The Project Report Entitled “**RESTAURENT TABLE BOOKING**”, Submitted To Gyanmanjari Innovative University, Bhavnagar In Partial Fulfillment Of The Requirements For The Degree In Information Technology, Is A Genuine And Original Piece Of Work Carried Out By Me Under The Supervision Of Faculty This Report Is The Result Of My Own Independent Effort And Has Not Been Copied Or Reproduced From Any Other Student’s Submission Or External Source Without Appropriate Acknowledgment. All Sources Of Information, If Any, Have Been Properly Referenced, And The Content Reflects My Sincere Academic Contribution To The Project.

Name of the Student

Signature of Student

1. _____

2. _____

ACKNOWLEDGEMENT

I wish to express my sincere gratitude to my Internal Guide for his/her constant guidance, valuable feedback, and encouragement throughout the development of our Creative Design hub II project. His insights and patient support helped us stay focused and improve our work significantly.

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In conclusion, I once again thank everyone who played a role in the realization of our **Restaurent Table Booking**.

Thank You,

CHHUGANI MEET

PONDA DHRUV

Abstract

The Restaurant Reservation System is a dynamic, web-based application aimed at streamlining the reservation process for restaurants and enhancing the overall customer experience. In traditional settings, table booking is often handled manually, resulting in inefficiencies, double bookings, and lack of real-time availability tracking. This project addresses these challenges by introducing a responsive, user-friendly interface that enables customers to make reservations online while providing restaurant staff with tools to manage table data efficiently.

Developed using HTML5, CSS3, and JavaScript, the system includes a structured homepage for navigation, an interactive reservation form with robust client-side validations, and an administrative interface for adding or updating tables. Key features include input validation for date and time ranges, automated formatting checks for phone numbers and emails, and temporary data storage using localStorage, with provisions for future server-side database integration. The interface ensures usability across devices with a consistent and responsive design approach.

The project not only demonstrates the effective use of front-end technologies but also lays the groundwork for a full-stack reservation platform. It is designed with modularity in mind, enabling easy scalability and integration with future technologies such as APIs, back-end services, and real-time databases. Through this system, restaurants can reduce human errors, improve operational efficiency, and offer customers a seamless online booking experience. The outcome is a foundational prototype that addresses both functional and non-functional requirements and can evolve into a robust commercial application.

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CHAPTER 1

INTRODUCTION

1.1 Project Background & Context

1.2 Problem Statement

1.3 Objectives & Success Criteria

1.4 Scope and Deliverable

1.1 Project Background & Context

The Restaurant Reservation System (RRS) is designed to streamline the reservation process for dining establishments. In today's fast-paced world, traditional reservation methods prove inefficient for both restaurant operators and patrons. With increased mobile traffic and heightened customer expectations, the system offers a user-friendly digital platform that not only presents restaurant information but also provides reservation capabilities directly via a responsive web interface.

The project harnesses the capabilities of HTML5, CSS, and JavaScript to deliver an engaging user experience. The landing page (index.html) immediately sets the tone, featuring a clear logo, navigation links to new reservations and search functions, and interactive elements such as restaurant cards that let users quickly view details about partnering restaurants.

1.2 Problem Statement

Restaurants often encounter inefficiencies in managing reservations: manual bookings, phone-based scheduling, and limited visibility of available tables can lead to overbooking or lost opportunities. The current problem is twofold:

- **For Customers:** Difficulty in accessing clear, timely reservation information and seamless booking interfaces.
 - **For Restaurant Managers:** The burden of managing reservations using outdated methods with little to no automation.
- By establishing an online, standardized booking process—as presented in our project files (including the new_reservation.html form and add_table.html for table management)—this system aims to bridge the gap between end users and restaurant management, ensuring reliable booking and a simplified administrative workflow.

1.3 Objectives & Success Criteria

Objectives:

- Provide an intuitive web interface for creating and managing restaurant reservations.
- Enable restaurant administrators to add and manage table details through a dedicated UI (e.g., the Add Table module).
- Validate user data with client-side scripting to ensure accurate, error-free reservations.
- Establish a system that scales for future back-end integration (database connectivity and server-side processing).

Success Criteria:

- A smooth and responsive user interface as evidenced by seamless navigation between index.html, new_reservation.html, and add_table.html.
- Successful form validations (using JavaScript) that prevent erroneous entries (e.g., incorrect dates, phone numbers, or reservation times).
- Positive user feedback during usability tests and a measurable decrease in reservation errors.
- A scalable design that could integrate further data management modules with minimal adjustments.

1.4 Scope & Deliverables

The RRS project includes both front-end and planned back-end components:

- **Front-End Deliverables:**
 - **Homepage (index.html):** Delivers an immediate overview of the system with clear restaurant listings and intuitive navigation.
 - **New Reservation Interface (new_reservation.html):** Features a dynamic form for inputting personal details, reservation dates, and times with built-in validations and constraints (e.g., limiting dates to within the next 7 days).
 - **Add Table Functionality (add_table.html):** Provides an interface for restaurant administrators to add or update table information, including capacity and table names.
- **Planned Back-End Integration:**
 - Future server-side implementation for reservation storage, database management, and secure transaction processing.
- **Documentation:**
 - Detailed system documentation (this report), UI/UX guidelines, and development notes that set the framework for further expansion.

CHAPTER 2

PLANNING AND FEASIBILITY STUDY

2.1 Stakeholder Analysis

2.2 Detailed Feasibility

2.3 Risk Register & Migration Strategies

2.4 Project Timeline & Milestone

2.1 Stakeholder Analysis

Primary Stakeholders:

- **Restaurant Owners/Managers:** Need a streamlined system for handling bookings and table management (evident in the dedicated “Add Table” page).
- **Customers:** End users seeking a simple way to reserve a table using an accessible web interface, as seen on the homepage and reservation form.
- **Developers/IT Team:** Responsible for enhancing and maintaining the interface, ensuring compatibility across devices and browsers.
- **Support & Maintenance Staff:** Will manage ongoing issues and incorporate feedback for future iterations.

2.2 Detailed Feasibility Study

The project leverages modern web technologies that ensure high feasibility:

- **Technical Feasibility:**
 - Utilizes standard web languages (HTML, CSS, JavaScript) that ensure wide support and ease of development.
 - Client-side validations (as implemented in `new_reservation.html`) reduce initial server load and enhance user experience.
- **Economic Feasibility:**
 - Low initial development cost owing to the reliance on open standards and the absence of complex back-end processes at the current stage.
 - The potential for scalability minimizes future investment risk.
- **Operational Feasibility:**
 - Easy integration with restaurant operations and minimal staff training due to familiar browser-based interactions.

2.3 Risk Register and Mitigation Strategy

Key Risks:

- **User Input Errors:**
 - *Mitigation:* The system employs robust JavaScript validations (e.g., for phone numbers and reservation times) as shown in `new_reservation.html` to guard against invalid entries.
- **Limited Back-End Integration:**
 - *Mitigation:* Design is modular, allowing for future server-side enhancements and integration of persistent storage systems.
- **Interface Inconsistencies:**
 - *Mitigation:* Consistent styling across pages (`index.html` and `add_table.html` maintain a similar header and navigation schema) ensures a unified user experience.

2.4 Project Timeline & Milestones

A proposed timeline might include:

- **Planning Phase:** Requirement gathering and stakeholder interviews.
 - **Design Phase:** Development of UI prototypes (prototype elements seen in the index and form pages).
 - **Implementation Phase:**
 - Develop homepage (index.html) and reservation modules (new_reservation.html).
 - Implement administrative tools (add_table.html).
 - **Testing Phase:** Unit testing of form validations and user-acceptance testing.
 - **Deployment & Review:** Launch the system and gather post-launch feedback.
- Milestones include project kickoff, delivery of front-end prototypes, beta release, and full-scale deployment.

CHAPTER 3

REQUIREMENT ANALYSIS

3.1 Detailed Use case & Scenarios

3.2 Expanded Functional Requirements

3.3 Expanded Non Functional Requirements

3.1 Detailed Use Cases & Scenarios

Primary Use Case: New Reservation Process

- **Scenario:** A user visits the restaurant reservation website (index.html) and navigates to the “New Reservation” page.
- **Steps:**
 1. The user selects a restaurant from the dropdown menu, which includes options such as Rangoli, Rocks N Logs, and Sarovar Portico.
 2. Enters personal details (first name, last name, phone number, email).
 3. Chooses a reservation date (validated to be within the next 7 days) and time (between 5:00 PM and 10:30 PM).
 4. Specifies the number of people for the reservation.
 5. Upon submission, client-side JavaScript validates all inputs before storing the reservation data in local storage.

Secondary Use Case: Adding a New Table

- **Scenario:** A restaurant manager accesses the “Add Table” page to update the table inventory.
- **Steps:**
 1. The manager navigates to the “Add Table” interface, where they are prompted to enter a table name and capacity.
 2. After filling the form, the table data is submitted, potentially updating the reservation system (pending back-end integration).

3.2 Expanded Functional Requirements

- **User Interface:**
 - Provide a clean, navigable homepage with clear calls to action (e.g., “New Reservation” and “Search” as seen in index.html).
- **Reservation Booking:**
 - The system must capture user details, validate data (e.g., format of phone numbers and email addresses), and enforce constraints such as reservation timings and date ranges.
- **Administrative Capabilities:**
 - Allow restaurant staff to manage the dining space by adding, updating, or removing table details using an intuitive form (demonstrated in add_table.html).
- **Data Handling:**
 - Store reservation data locally and, eventually, integrate with a back-end database for persistent storage.

3.3 Expanded Non-Functional Requirements

- **Performance:**
 - Fast load times for pages and immediate response from JavaScript validations.
- **Scalability:**
 - Modular design to support additional features, such as real-time reservation updates, upon later integration.
- **Usability:**
 - Responsive design evident in the project's viewports ensures optimal display across devices.
- **Security:**
 - Initial implementations include basic validations; subsequent versions should integrate secure data handling and server-side validations.

CHAPTER 4

SYSTEM DESIGN

Components, Diagrams and Interfaces

Detailed Sequence Diagrams

Database Design & Optimization

UI/UX Prototypes & Guidelines

4.1 Components, Diagrams, and Interfaces

The system is built as a collection of interlinked HTML pages that work together to deliver a coherent reservation service:

- **Homepage (index.html):**
 - Acts as the entry point, displaying a clear brand identity and navigational elements such as restaurant cards.
- **New Reservation Page (new_reservation.html):**
 - Contains a dynamic reservation form with dropdown menus, date/time inputs, and client-side validations.
- **Add Table Page (add_table.html):**
 - Provides a simple form for administrators to manage table availability.

A high-level block diagram would include:

- **User Interface Layer:**
 - HTML/CSS pages for the homepage, new reservation, and add table.
- **Client-Side Logic:**
 - JavaScript for form validations and interactivity (evident in new_reservation.html scripts).
- **Future Back-End Layer:**
 - Proposed database and server logic modules (to be integrated later).

4.2 Detailed Sequence Diagrams

For the **New Reservation** use case, a sequence diagram would illustrate:

1. **User Interaction:**
 - The customer accesses new_reservation.html and selects restaurant and inputs personal details.
2. **Client-Side Processing:**
 - JavaScript validates the inputs (e.g., correct date range, proper phone format).
3. **Data Storage:**
 - On passing validation, reservation data is stored locally (using localStorage in the current implementation).
4. **Feedback:**
 - The system alerts the user of a successful reservation submission.

This diagram helps map out inter-component communication and can be expanded later to include API calls when a back-end system is integrated.

4.3 Database Design & Optimization

Although the current project files do not include a back-end database, a conceptual database for future implementation might involve tables such as:

- **Reservations:** Containing fields for reservationID, restaurant, name, contact information, reservation date/time, and party size.
- **Tables:** Detailing tableID, tableName, capacity, and restaurantID.
- **Restaurants:** Listing restaurant-specific details like name, address, and contact info.

Normalization techniques and indexing strategies would be applied during actual implementation to ensure efficient query performance.

4.4 UI/UX Prototypes & Guidelines

The project's UI has been designed with clarity and usability in mind:

- **Design Elements:**
 - Consistent header and navigation structures across index.html, add_table.html, and new_reservation.html enhance user familiarity.
 - Use of visual cues (e.g., icons, images, and clear button labels) guides the user effortlessly through the booking or table management process.
- **Responsive Design:**
 - The layout adapts well across desktops and mobile devices, ensuring accessibility for all user demographics.
- **Interaction Guidelines:**
 - Immediate feedback on form submission helps maintain data integrity, while intuitive form field labels and placeholder texts ease data entry.

CHAPTER 5

IMPLEMENTATION

1.1 Development Environment & Tooling

1.2 Front-End Code Details

1.3 Back-End Code Details

5.1 Development Environment & Tooling

The development of the Restaurant Reservation System was undertaken using standard web development tools:

- **Languages:** HTML5, CSS3, and JavaScript form the backbone of the project.
- **Tooling & Editors:**
 - A modern code editor (such as Visual Studio Code) was used to write and test code.
 - Version control systems (e.g., Git) tracked changes throughout the project lifecycle.
- **Testing:**
 - Basic client-side testing was performed using browser developer tools to ensure the functionality of form validations and UI responsiveness.

5.2 Front-End Code Details

The project's front end is divided into several key pages, each with its own role:

- **Homepage (index.html):**
 - Provides an introduction to the system and uses engaging visual elements, such as restaurant cards, to immediately attract user attention.
 - Features a clear navigation bar that seamlessly links to the reservation and search functions.
- **New Reservation Page (new_reservation.html):**
 - Contains a comprehensive form where users enter personal and booking details.
 - Implements extensive JavaScript validation to ensure correct user input (e.g., checking that dates fall within the permitted range and phone numbers have exactly 10 digits).
 - Utilizes localStorage to temporarily save reservations pending future back-end integration.
- **Add Table Module (add_table.html):**
 - Developed for administrative use, this page offers a simple interface to add new tables by specifying the table name and capacity.
 - The design mirrors the overall aesthetic of the system for consistency and ease of use.

5.3 Back-End Code Details

At this stage, the system primarily functions as a front-end prototype:

- **Current Status:**
 - The reservation data is stored in the user's localStorage as a temporary measure.
 - There is no server-side scripting or database integration implemented yet.
- **Future Considerations:**
 - In later stages, the back-end will be developed using technologies such as Node.js, PHP, or another server-side language to handle persistent data storage and secure transactions.
 - APIs will be designed to facilitate real-time reservation updates and administrative oversight, ensuring data consistency and security across the platform.

CHAPTER 6

TESTING

6.1 Test Automation Strategy

6.2 Coverage & Metrics

6.3 Test Case Examples

6.1 Testing Strategy

Manual testing was used to check the functionality of forms, input validations, UI responsiveness, and table updates. Different browsers and devices were used to ensure compatibility.

6.2 Test Cases & Results

Test Case ID	Description	Input	Expected Result	Actual Result	Status
TC001	Name field accepts letters only	"John Doe"	Accepted	Accepted	Pass
TC002	Email field validation	" john@doe.com "	Valid	Valid	Pass
TC003	Phone field input (digits only)	"1234567890"	Accepted	Accepted	Pass
TC004	Date and time validation	Past date	Error shown	Error shown	Pass
TC005	Empty form submission	All fields blank	Show validation messages	Validation shown	Pass
TC006	Add table form	Valid table ID & capacity	Table added dynamically	Table shown	Pass

6.3 Validation Techniques Used

- **HTML5 input constraints** (e.g., `type="email"`, `required`)
- **JavaScript custom validation** for phone number, date, and time
- **Error messages** dynamically displayed to guide the user

CHAPTER 7

DEVELOPMENT

- 7.1 Infrastructure Architecture
- 7.2 CI/CD Detailed Workflow
- 7.3 Rollback and Blue-Green Strategy

7.1 Deployment Process

Since the current version is front-end only, deployment was done locally and tested in web browsers. The structure is ready for hosting on platforms like GitHub Pages or a shared hosting provider.

7.2 Hosting & Configuration

- Can be hosted using **GitHub Pages** or **Netlify**
- No server setup required in current version
- Future deployment to include backend (Node.js or PHP) with database hosting (MySQL or Firebase)

7.3 Maintenance Plan

- Regular validation for broken links and JS errors
- Periodic UI improvements
- Backup of codebase on GitHub

CHAPTER 8

MAINTANENCE AND SUPPORT

8.1 Maintenance & Alerting Details

8.2 Incident Maintenance

8.3 Continuous Delivery Roadmap

8.1 System Overview

The Restaurant Reservation System enables users to book tables via a form and allows admins to add available tables dynamically.

8.2 User Roles & Navigation

- **Customer**
 - Access `index.html`
 - Click "New Reservation" → Fill out the form → Submit
- **Admin**
 - Access `add_table.html`
 - Enter table ID and capacity → Click Add Table

8.3 How to Use

Making a Reservation:

1. Open `new_reservation.html`
2. Fill in all fields (name, email, phone, date, time, table number)
3. Click **Submit**
4. If all validations pass, a confirmation message appears

Adding Tables (Admin):

1. Open `add_table.html`
2. Enter table ID and capacity
3. Click **Add Table**
4. New table appears in the displayed table list

8.4 Error Handling

- If required fields are empty or invalid, error messages will appear
- Past dates or incorrect formats are blocked using validation rules

Chapter 9: Conclusion & Next Steps

9.1 Conclusion

The Restaurant Reservation System successfully achieves the goal of creating an intuitive, front-end-only platform for online table booking. With robust client-side validation and a simple, clean UI, it offers a seamless experience for both users and admins.

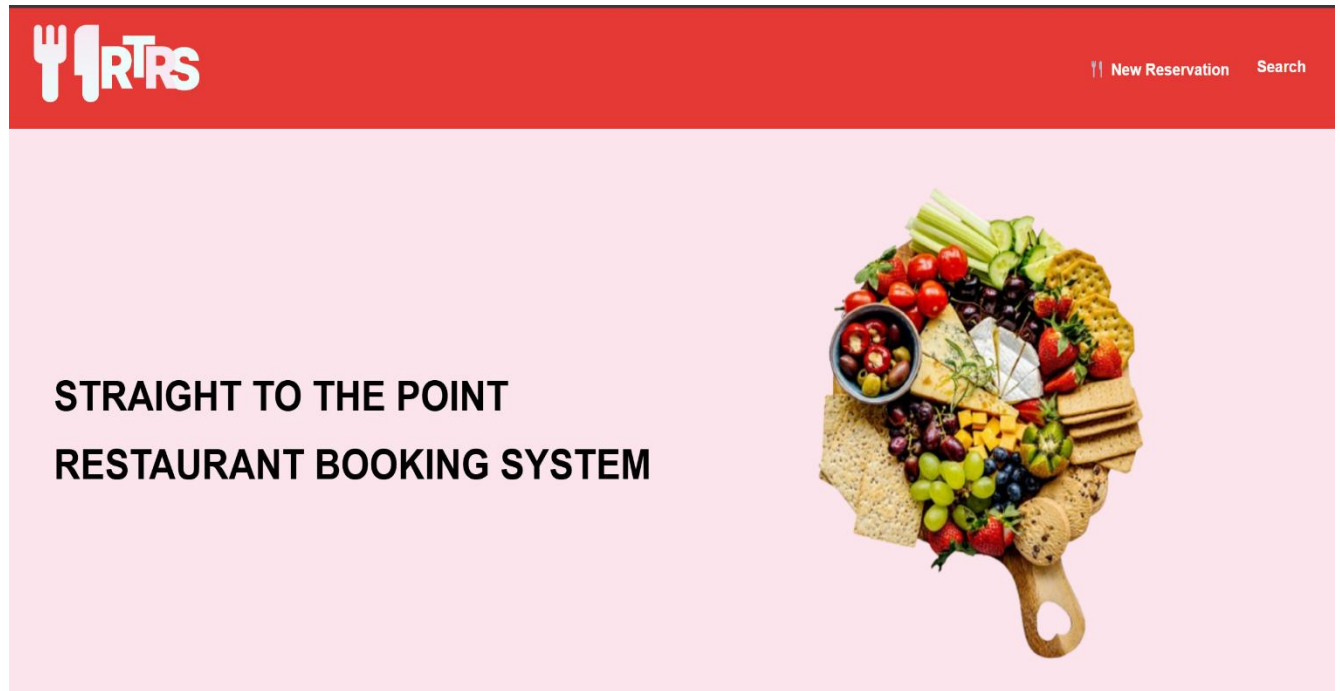
9.2 Limitations

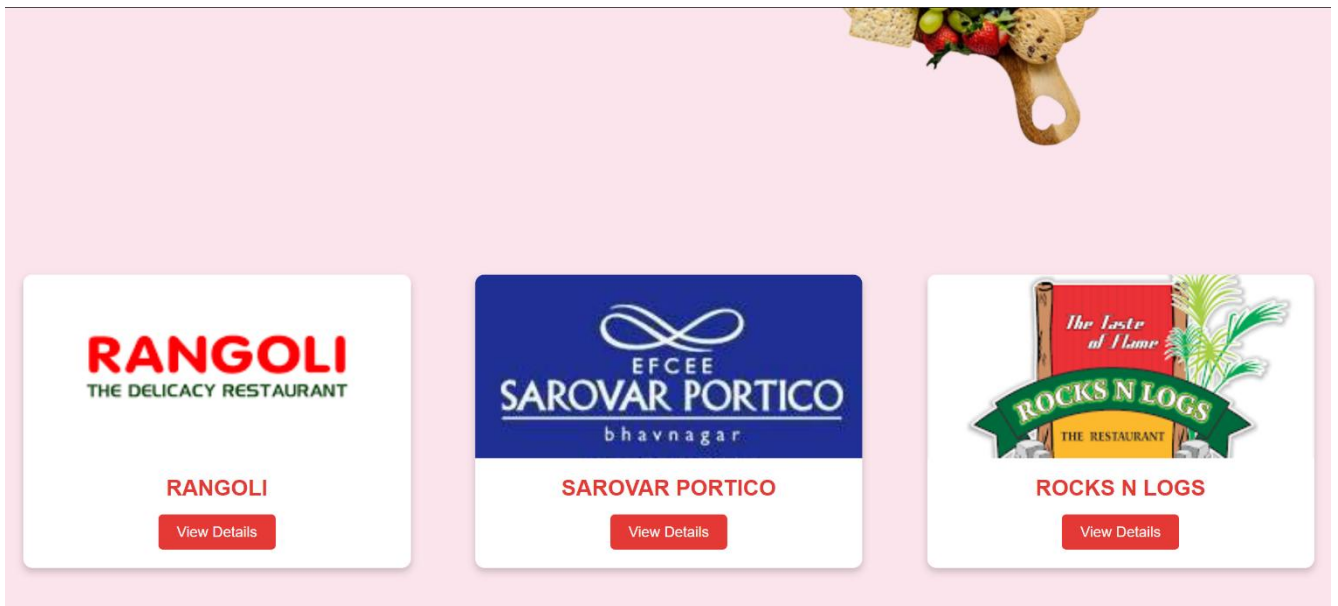
- No server-side data storage (reservations lost on reload)
- Lacks user authentication and session handling
- No real-time table availability check

9.3 Future Enhancements

- Integration with backend using Node.js or PHP
- Use of a real database like MySQL or Firebase
- Admin dashboard with login authentication
- Real-time table availability and confirmation emails
- Mobile-first redesign using responsive frameworks (e.g., Bootstrap or Tailwind CSS)

Chapter 10: Activity Diagram





New Reservation

Select Restaurant

First Name

Last Name

Phone Number

Email Address

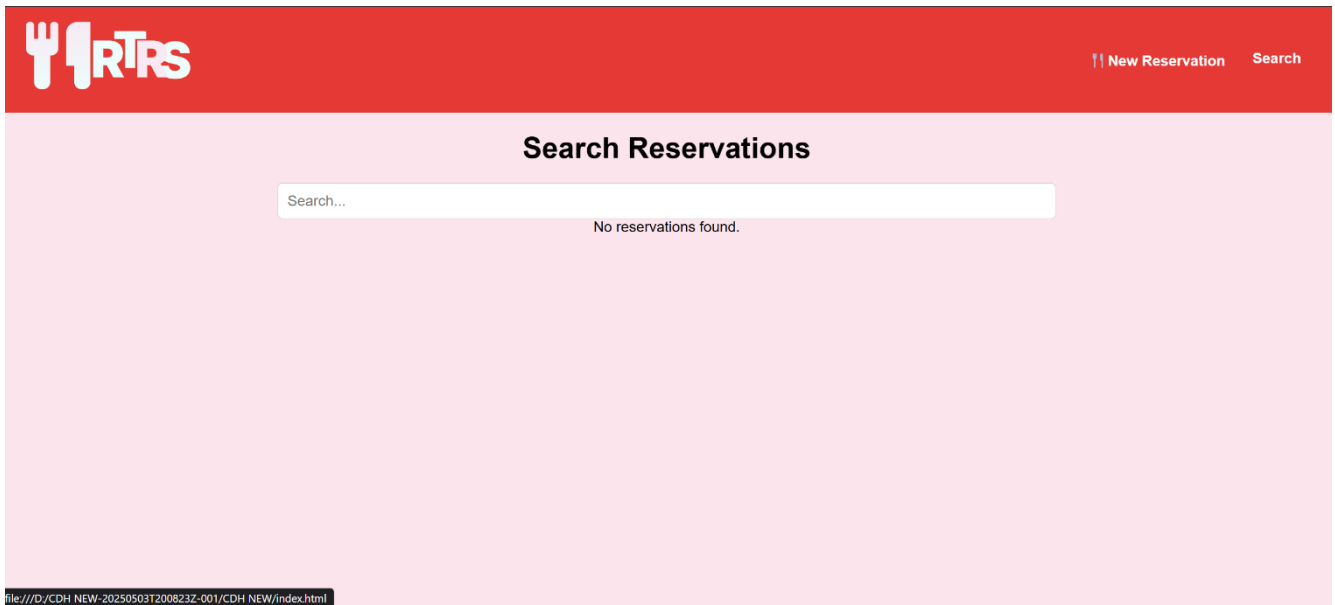
Reservation Date



Reservation Time



Number of People





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About Us

About Us

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Our Gallery



Reserve Your Table

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