

Project Overview

Restaurant Reservation System

Group-19

1 Introduction

There is a need for a fast and real-time management system for restaurants and customers. Traditional methods such as walk-in queues or phone call-based bookings often result in long waiting times, uncertainty, double bookings, and customer dissatisfaction.

This document provides us with an overview of our system , why it is actually useful and what problems it solves.

2 Project Overview

The *Restaurant Reservation System* developed by our group is a digital platform that guides the interaction between customers and restaurants. Waiting in long queues or discovering that a favorite restaurant does not have available tables can be frustrating. Our system addresses this problem by allowing users to browse restaurants, check real-time availability, and make reservations with just a few taps on your screen. The Restaurant also has the advantage of being easily discovered, having more reach and being able to manage the layouts of their tables accordingly.

The technologies used in the project:

Frontend

- Framework and Language
 - Next.js
 - React
 - TypeScript
- Styling and UI

- Tailwind CSS
 - ui components
 - CSS Modules / global styles
- State Management
 - Zustand
- Routing
 - Next.js App Router

Backend

- Framework and Language
 - Node.js
 - Express.js
 - TypeScript
- Database
 - MongoDB
- Authentication
 - JWT
 - bcrypt
- Environment Managemnet
 - .env files
- Development Tools
 - nodemon
 - pnpm
 - Prettier
 - ESLint

3 Why Our Project Is Different — And Why It Is Needed

3.1 Solving a Real, Everyday Problem

Many restaurants still depend on handwritten registers or phone calls for reservation management. Customers today expect fast, secure, and accurate booking options. Our system eliminates:

- double bookings,
- long waiting times,
- miscommunication,
- lack of clarity
- manual errors.

It makes interaction between restaurants and customers more smooth , benefiting both.

3.2 Designed for Both Customers and Restaurant Owners in mind

Beyond simple booking platforms, the suggested restaurant reservation system offers a number of sophisticated features. These consist of:

- **Restaurant Dashboard:** A interface designed to help restaurant managers manage tables, update menus, and oversee reservations.
- **Menu Management:** By allowing restaurants to add, modify, remove, and update menu items instantly, customers can be sure that the dishes are always available.
- **Table and Slot Management:** To avoid double booking, real-time tracking and management of seating capacity, table availability, and reservation slots are implemented.
- **Online Reservation System:** Users can select date, time, and party size to book available tables effortlessly.
- **Real-Time Availability Updates:** Mails and notifications are are sent and real time customer update is there.
- **Walk-In and Waitlist Handling:** Restaurants are able to effectively assign tables, monitor waitlist entries, and handle walk-in customers.

- **User Authentication:** Encrypted passwords and session management are used to support safe login and signup.
- **Search and Filtering:** Customers can look for eateries by name, location, or cuisine. They can also use filters like availability, price range, and rating.
- **Menu View for Users:** Before making a reservation, customers can view restaurant menus.
- **Reservation Tracking:** Users can see the status and details of their previous and upcoming reservations.
- **Cancellation and Modification:** Customers have the option to change or cancel reservations (subject to the restaurant's rules).
- **Review and Rating System:** Users can rate and comment on restaurants.
- **Loyalty Points System:** users can earn loyalty points which can be redeemed later.
- **Admin Panel:** Admins can create reports, add or remove restaurants, handle payments.
- **Payment Gateway Support:** Safe token payments for optional upfront payments and booking confirmations.
- **Auto-Suggestions in Search:** Intelligent recommendations derived from user input, well-liked dishes, or commonly searched terms.

This produces more than just a booking interface; it produces an entire ecosystem.

3.3 Helps Restaurants Increase Revenue

The platform helps businesses grow by:

- decreasing no-shows,
- improves online visibility,
- enhancing customer loyalty.

3.4 Market Relevance

With increasing demand for:

- digital services,

- contactless bookings,

our system provides relevant solution for the Indian restaurant industry.

4 Summary

The *Restaurant Reservation System* is a scalable, and user-friendly platform that improves the experience of both restaurant customers and owners. A very much needed platform for this digital world.