OBJECT ORIENTED PROGRAMMING : PROJECT

A Project report

on

RESTAURANT RESERVATION WEBSITE

Submitted By

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INDEX

1. INTRODUCTION

The Online Restaurant Reservation System is a web application developed to automate the process of Reservation of table in restaurants.

1.1 OBJECTIVE

The main objective of this project is to provide facility to both restaurant and customer by having a restaurant their own page where they can display their menu, images and available tables for dining and the consumer by allowing him to compare several restaurants in his city. The system has two parts first for the customers and other for the management side
The consumer side, after a successful Sign In allows to make a reservation by selecting number of guests, date and time of reservation while the management side is allowed to edit number of tables available, their menu, images and manage the reservations made

1.2 SCOPE

Owing to limited time frame we have limited our project to table reservation only. There is almost no web application catering to the need of having a table reservation system for small or medium restaurants, we would like to extend our project for doing the same

The sole purpose of the project was to learn frontend and backend development, we will try further to make better use of other advanced technologies to commercialize our website for daily business

2. LITERATURE REVIEW

Paresh.R.Bora and Eshan Gupta [2012] discuss about an application for order management system for restaurant. "The rampant growth of mobile and wireless technology is making a large impact in our lives. Nowadays people are looking forward for an application that satisfies their needs even more comprehensibly. Most of the restaurant industries are looking for any mobile application that enhances the dining experience as well as that increase the profit. This application runs on devices such as tablets which provides convenience, improves efficiency and accuracy of restaurants by saving time and reducing human errors."

Hanisah Binti Md Taha [2008] proposes "Online Restaurant Management System (ORMS)" which is a web application for restaurant management. This system provides service facility to restaurant and also to the customer. Software and hardware used are AppServ, Macromedia Dreamweaver 8, Microsoft Visio 2003, Apache serve and MySQL database. Furthermore, this project is developed for restaurants management and enhance business online. this project facilitates customer to make online ordering and table reservation.

3. METHODOLOGY

The entire project is divided into two modules namely customer side and administration side. Only registered users can Login in to the website and can access the website. One user can have only one account, no duplicate account is possible. This system allows user to search for their favourite restaurant near them and reserving the table through the website. The admin can view the details of food orders and table reservations.

The features of our website are as follows:

3.1 HOMEPAGE

The Homepage consists of the Navbar which in turn consist of five elements. They are:
- Home
- Features
- Contact Us
- Sign in
- Sign up

The Home has the first glance of our website. It has the Book Now option through which you are able to move forward in order to complete your reservation. The details of Book Now option will be discussed soon.

The Features tells the user about the specification of our website and all the available characteristics of our website. It tells us about what all features can the customer use in our website.

Contact Us page provides our contact information to the users. It also gives the feedback form to the users so that they can help us to improve through their valuable suggestions.

3.2 SIGN IN PAGE

When the user selects the Sign in option the website redirects the user to Login page where they can enter their credentials and login to their account. After this they can continue with their table reservation process. The Login page also has two options:
- Forgot Password
- Sign in with Google

The Forget Password feature allows the user to reset their password if they somehow wanted to change their password. The user have to enter their username and email id in order to proceed.

Sign in with Google allows the user to login into our website through their Gmail account if they have one. However users can register themselves through our website also.

3.3 SIGN UP PAGE

When the user selects the Sign up option the website redirects the user to Sign up page where they can enter their credentials and register their account. After this they can continue with their login process. The Sign up page asks the user to enter their details and then register their account. It also provides the Sign up with Google option through which user can register themselves with their google account if they have one.

3.4 THE SELECT CITY PAGE

It allows user to select his city and he is then redirected to the specific page of that city.

3.5 THE CITY PAGE

The list of all Restaurants in the city is displayed, for each restaurant user can see its address, phone number, timings, location, ratings and then he can continue after selecting book a table in any restaurant.

3.6 THE RESTAURANT PAGE

The user can make a reservation by selecting number of guests, date and time of reservation. The restaurant's About section, Menu and Images can be traversed efficiently . An initial Sign up or Log in is required if user selects to book a table.

4. IMPLEMENTATION

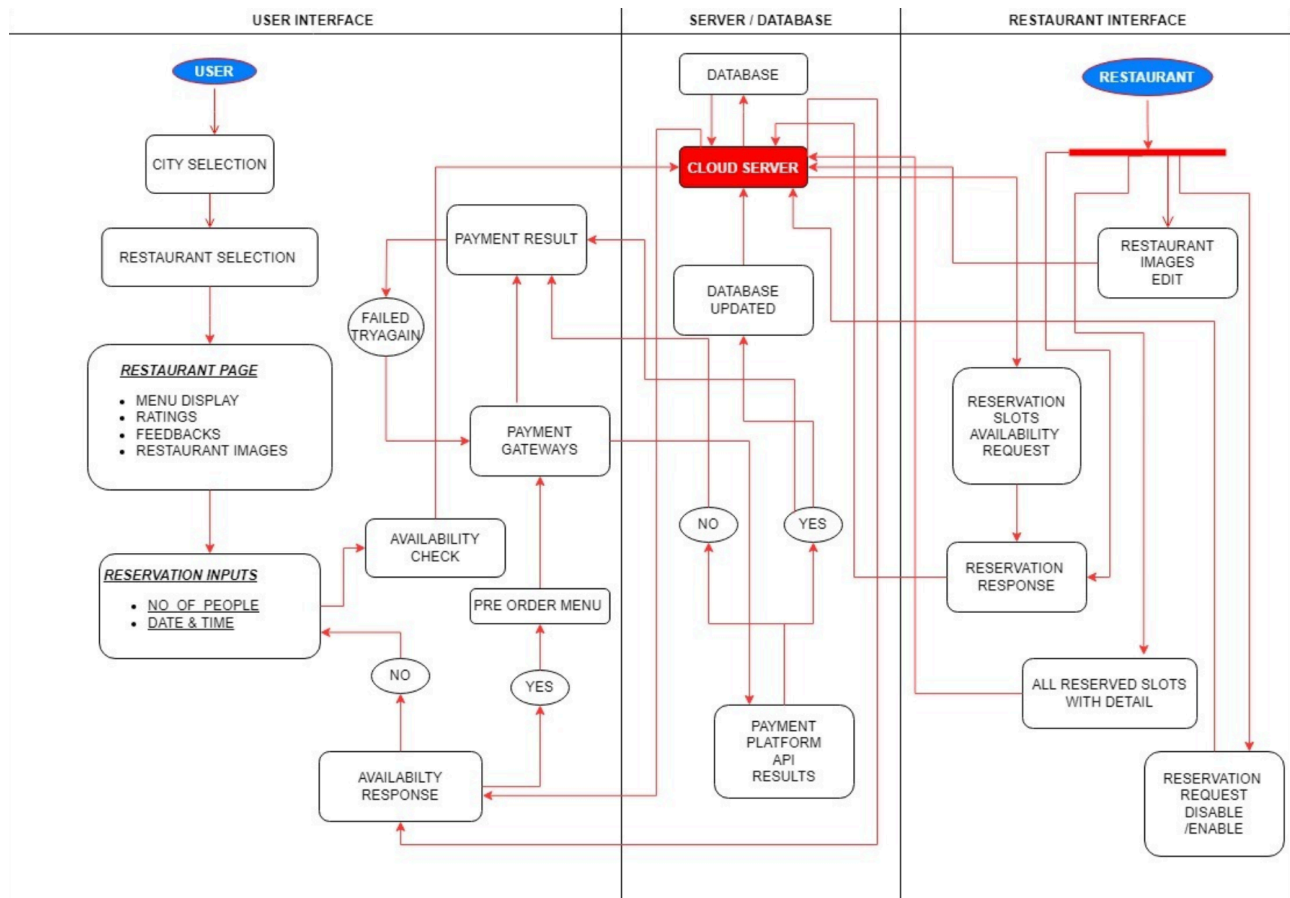

FIG. THE UML DIAGRAM

4.1. FRONTEND

- **HTML:** We have used HTML as our markup language to design our webpages.

- **CSS:** It is used for describing the presentation of a document written in a markup language such as HTML.

- **JAVASCRIPT:** We have used JavaScript to run some internal and external scripts on our webpages.

- **JQUERY:** jQuery is a JavaScript library designed to simplify HTML DOM tree traversal and manipulation, we have used it to customise our Navbar to display the name and picture of a user when they are logged in.

- **BOOTSTRAP:** Bootstrap is a free and open source CSS framework directed at responsive, mobile first front end web development. It contains CSS and (optionally) javaScript based design templates for typography, forms, buttons, navigation, and other interface components.

    1. THE NAVBAR: Bootstrap's powerful, responsive navigation header, the navbar is used. It includes support for branding, navigation, and more, including support for our collapse plugin.

    2. THE NAV TAB: Takes the basic nav from above and adds the .nav-tabs class to generate a tabbed interface. It is used to create tabbable regions with tab JavaScript plugin.

    3. CAROUSAL: It is used to create a slideshow component for cycling through elements—images or slides of text—like a carousel.

    4. CONTAINERS: Containers are the most basic layout element in Bootstrap and are required when using the default grid system.

    5. BUTTONS: Custom button styles were used for actions in forms, dialogs, and more with support for multiple sizes, states, outline buttons etc.

4.2. BACKEND

- **NODE JS:** We have used NodeJS as a framework for our Backend Development.

- **MONGO DB:** MongoDB is a Non-SQL and Non-Relational Database that we have used to store the data of various users, restaurants, orders and also suggestions.

4.2.1 NODE MODULES USED

1. **ExpressJS:** ExpressJS is a NodeJS web application server framework, designed for building single-page, multi-page, and hybrid web applications. We have used it for managing get and post requests.

2. **Body Parser:** body-parser is a nodule module used for parsing middleware.

3. **EJS:** We have used EJS as our templating language for our HTML files.

4. **Mongoose:** Mongoose is a MongoDB object modeling tool that we have used to work with a MongoDB in NodeJS.

5. **Session:** We have used the session node module as our session manager for a user.

6. **Passport:** It is used for authentication of a user.

7. **Passport Local Mongoose:** It is a Mongoose plugin that simplifies building username and password login with Passport.

8. **Google Strategy:** passport-google-oauth20 is a passport strategy for authenticating with Google using the OAuth 2.0 API.

9. **Find or Create:** Simple plugin for Mongoose which adds a findOrCreate method to models. It is a required module for Passport.

10. **Lo-dash:** It is a JavaScript library which makes it easier to work with arrays, objects and strings.

11. **Cors:** CORS is a node.js package for providing an ExpressJS middleware.

4.2.2 EXTERNAL API'S USED

1. **Paytm API:** The Paytm API has been used to process payments via Paytm.

2. **Google OAuth 2.0:** We have used the Google OAuth 2.0 API to enable login for our users via their Google accounts.

5. RESULT

The customer enters the personal details to get an account which is needed to be used during table reservation. The user can view the food. This will allow the user to reserve a table and the reservation details are sent to the email ID of the user.

The system has two parts first for the customers and other for the management side. The consumer side, after a successful Sign In allows to make a reservation by selecting number of guests, date and time of reservation while the management side is allowed to edit number of tables available, their menu, images and manage the reservations made.

The initiative which we have taken is the first one in India and among one of the first in the world. Earlier customers have to visit the particular restaurant's website and book their reservations which was not only tiresome but also time consuming. We overcome this problem by designing our website ResDine which will accommodate all the restaurants who are willing to provide dine in facilities to the customers.

Users just need to visit our website search for their city then the list of best available restaurants will be displayed in front of the user. Users can choose the restaurants of their choice and then just proceed forward with the payment option.

Our website not only makes it easy for the customers reserve their dine in table but it also helps the restaurant side to extend their facilities to a large number of customers and spread their business. In this way both the parties are benefited.

6. CONCLUSION

The Online Restaurant Table Reservation website was implemented to reduce the manual process of booking for a table in any restaurant. The old system does not serve the customer in a better way rather it makes customer data vulnerable. The new system keeps proper records of customers.

The Restaurant currently runs a manual reservation system and the customers looking for reserving the tables or any other services do it by walking to the hotel or contact on phone or using a third party option.

Also the major disadvantages of the current systems are:
- Waiter friendly application not customer friendly.
- Application can't be used by everyone due to differences in operating system.

In order to compensate these disadvantages we have designed this website called ResDine. ResDine allows the user to compare wide range of restaurants on the basis of menus, location, rating, reviews and many more.

7. REFERENCES

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