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Django Multi-Vendor Restaurant Management System

Mr.Shaikh Mohamad, Somoju Anand, Payyavula Anil, Shyama Pranay

Assistant Professor, Department of CSE, Guru Nanak Institute of Technology, Hyderabad, Telangana, India¹

Student, Department of CSE, Guru Nanak Institute of Technology, Hyderabad, Telangana, India^{2,3,4}

ABSTRACT: The aim of this project is to develop an online restaurant management system which is easily accessible to the customers. We propose to build a software project that can efficiently handle and manage various activities of a restaurant and all these activities will be happening under the supervision of the administrator. The main objective is to design a Restaurant table booking and managing system effectively. The businesses in restaurants are now growing constantly. At the same time, the need for managing its operations and tasks arises. The best way to optimize these activities is growing the business online as well. 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. This project serves the best way of maintaining customer's information and caters their needs.

I. INTRODUCTION

Restaurant management systems have become even more state-of-the art over the past few years. Thanks to technological updates, it has become all the more important for those in the hospitality industry to stay up to date to ensure the most profitable restaurant operations. This includes the various activities that are carried out in a restaurant to run the business, from produce purchasing to preparation of food, staff shift schedules, housekeeping, menu updates, customer service, accounting, website and social media management, reporting, and of course customer orders and tariff values. Knowledge is an important element for restaurant success, especially when it comes to systems and procedures. A modern restaurant management system is a great way to streamline your operations. It will also reduce overheads and increase your daily sales turnover using effective customer acquisition methods. If you're in the beginning stages of looking for a restaurant management system, this comprehensive guide provides answers to your multiple questions and concerns. Let's start by taking a look at five important questions, and evaluating your particular restaurant business.

II. LITERATURE SURVEY

P.Saratha(2017) Natural Language Processing (NLP) directed to ambiguous representation for software requirements. Ambiguity at different levels creates different representation and meaning. This paper reduces the issues of ambiguity levels for the Software Requirements Specification (SRS) using formal methods. The end result shows the effectiveness in specifications through Z language. The Z specification is created for the commercial application of online food ordering system to improve the order details accuracy and efficiency. The stakeholder needs for food ordering system are gathered from the project goal. The system is designed using Unified Modeling Language (UML) illustration of use case diagram. The specification is created for the system behavior to remove the ambiguity. Along with this, Z/EVES tool is used for the evaluation of Z specifications for the demonstration.

NamrataSinghal,E.Konguvel(2022) Restaurant industry is growing at a swift pace and keen to strengthen every segment of their business. Although ample attention is being paid in digitalizing the restaurant management systems, not many business proprietors recognise the importance of implementing digital billing software systems within the restaurant. The consumers' experience at any restaurant includes not only the food but also the placing and billing their orders. Billing software systems must be incorporated with additional features that speed up the restaurant services to gain better recognition, by enhancing the consumer's experience in any food chain. It enables customers to login to their account, access rewards, place orders and obtain the entire bill alongside payment options. The aim of this work is to change the traditional way of ordering food at a restaurant". During the days of Covid-19, everyone wanted to avail contactless service, so when getting to a restaurant we will digitally access the menu and order our food in a contactless manner. Use of digital menu cards will help erode the communication gap between the waiter and the customer and therefore would confirm that the right order is placed. There will be less chances of order getting mixed with another table too. In this work, the restaurant management system is implemented in 8086 Microprocessor Assembly Language Programming (ALP) through EMU8086 emulator which helps in understanding the operation of 8086 Microprocessor.

Jedidiah Harpanahalli et. al(2020)With a move towards a digital India, digitization has to be ensured in all aspects of the society. In this paper a RFID based restaurant management system by using the concepts of open source technologies like Python and RaspberryPi is presented.This system is introduced as a solution to the bottleneck caused by the cashiers. Focusing on self service, the proposed system aims to develop a digital, contactless and secure restaurant environment which will enable patrons to seamlessly Select, Scan and Eat their desired food items. Identification of food items along with the payment is done using Radio Frequency Identification (RFID)technology wherein each food item is marked using adhesive RFID tags, the amount for the same is deducted automatically from the patron's digital wallet. This results in significant advancement towards automatic management and reduction in manual labour in a restaurant environment.

III. EXISTING SYSTEM

In the existing manual System, many restaurants have a lot difficult to manage the business such as customer reservation table. If the customer books the Table and later wants to cancel the booking, he is permitted to do this only within a specific time period. By using manual booking it is difficult for the staff to keep the correct customer information and may lose the customer information. The customer is also given the facility to view the status of the booking to determine if it is ready.

IV. PROPOSED SYSTEM

Online Restaurant management system is the system for manage the restaurant business. After successful login the customer can reserve the table according to the desired time. The main point of developing this system is to help restaurant administrator manage the restaurant business and help customer for online table reservation. The System can efficiently handle and manage various activities of a restaurantand all these activities will be happening under the supervision of the administrator. The businesses in restaurants are now growing constantly.

V. SYSTEM ARCHITECTURE

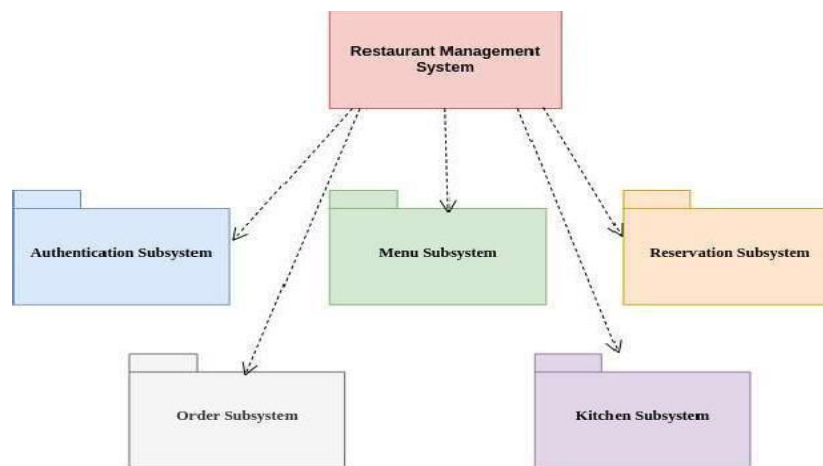


Fig : System Architecture

VI. METHODOLOGY

Modules Name:

- Vendor Account Management
- User Account Management
- View Customer Booked Information
- Restaurant Table Booking System
- Order Status Checking

Modules Explanation**1. Vendor Account Management:**

This module provides an Vendor login interface to control all booking activities in the system. The Vendor can verify and manage various member details of booking persons. The Vendor has the authority to update all bookings per day so that next day bookings starts in next day.

2. User Account Management:

Users are required to create an account within the system by registering their information.

Once registered, users can login to access and utilize various services offered by the system, such as table booking and food placement.

3. View Customer Booked Information:

This module enables the Vendors to view customer information, including order foods and order date. Vendors can also access information regarding the specific tables' customers have placed orders for, streamlining customer service.

4. Restaurant Table Booking System:

The system offers a easy accessible of restaurant tables, allowing users to select tables within specific day slots. Booked tables are visually highlighted in data of customer account, while available tables are displayed in their standard Available option. Vendors have the capability to review all table booking requests, with ensuring efficient table allocation automatically.

5. Order Status Checking:

Users can check the status of their orders, including whether the orders have been approved by the auto process or not. This feature provides transparency to users regarding the processing of their orders, enhancing the overall user experience.

Implementation**ALGORITHM:-**

1. **Initialize Database Connection:** Connect to the MySQL database to interact with the data.
2. **Display Home Page:** Render the home page for general users and sellers without any inputs.
3. **User/Seller Login:** Capture email and password. If credentials match an entry in , store necessary details and redirect to the respective dashboard. If invalid, show an error message.
4. **Seller Profile Management:** Display the seller's profile by querying their details . Allow sellers to update profile fields like restaurant name and location and save the changes in the database.
5. **Seller Add Food Items:** Sellers can add food items by providing name, description, and image. The food details and image are stored in the foods table and saved to the server.
6. **Seller View/Update Bookings:** Query all bookings for the seller's restaurant and display them. Allow sellers to manage bookings and update food item availability when bookings are canceled.
7. **User View All Foods:** Users can view available food items by querying the foods table. Display this list on the user's food page .
8. **User Book a Table:** Users select a food item and provide booking details. Check if the table is available for the selected time, and if so, insert the booking , Update the food's table status accordingly.
9. **User View Bookings:** Query and display all bookings made by the user, rendering them on the page.
10. **User Registration:** Validate user or seller inputs .If the account doesn't already exist, insert the new details into the appropriate table. Display a success message and redirect to the login page.

VII. EXPERIMENTAL OUTCOME

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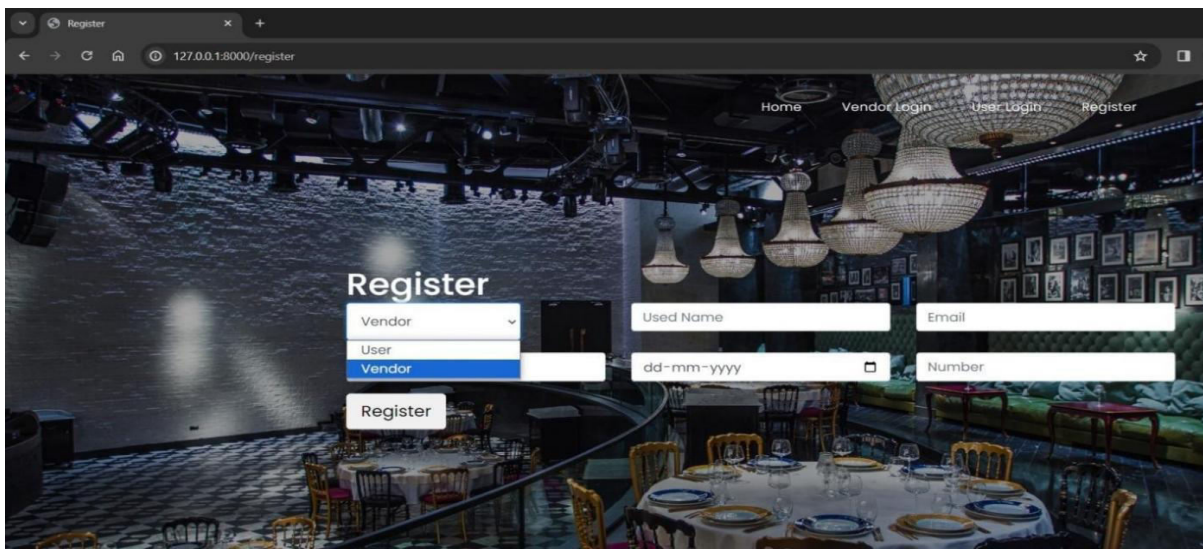
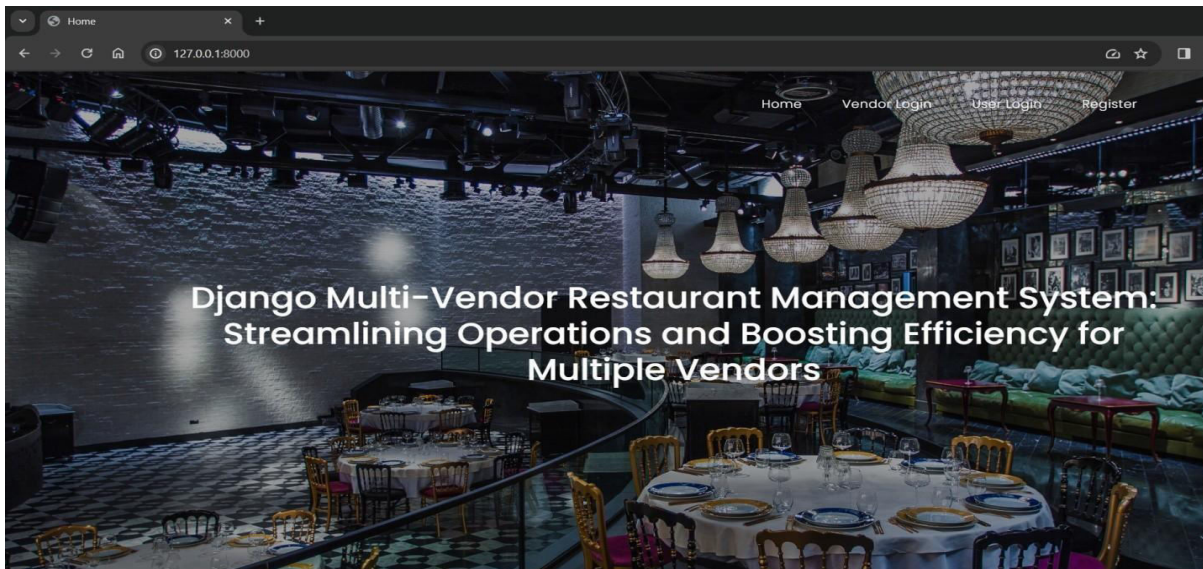
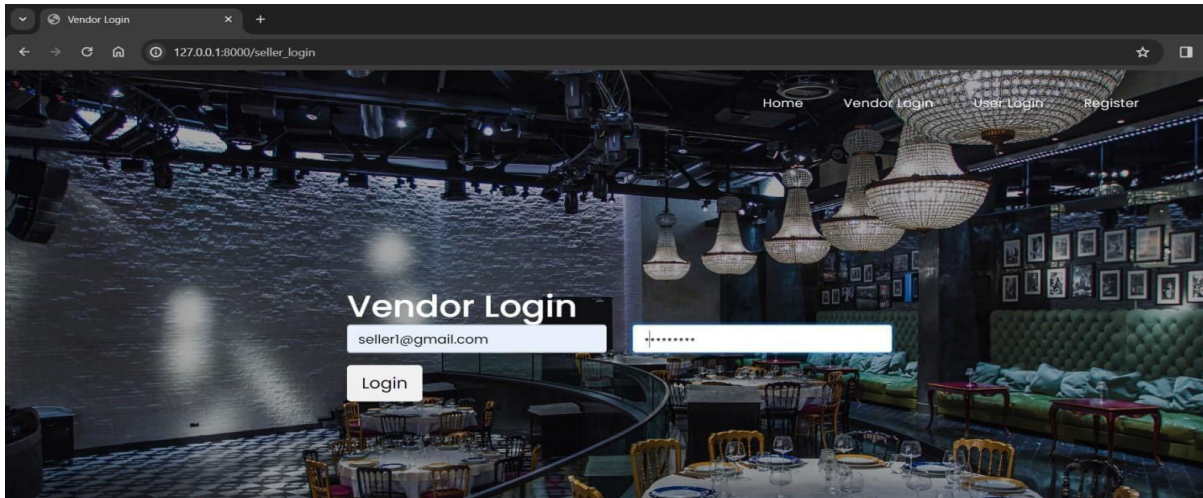
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS

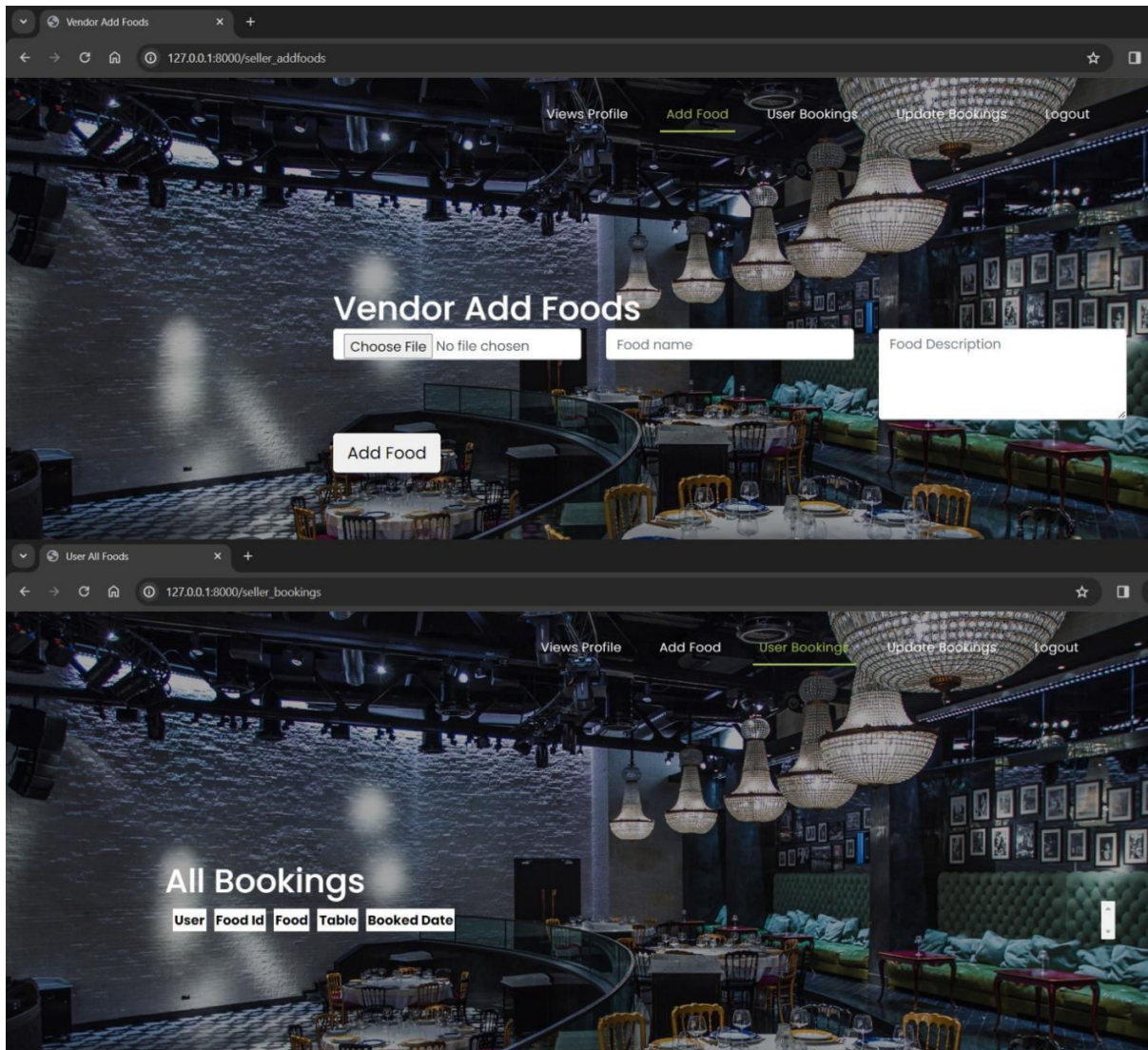
Watching for file changes with StatReloader
Performing system checks...

System check identified no issues (0 silenced).

You have 18 unapplied migration(s). Your project may not work properly until you
Run 'python manage.py migrate' to apply them.
November 26, 2023 - 22:10:41
Django version 4.2.7, using settings 'MPWB06PROJECT.settings'

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VIII. CONCLUSION

To conclusion, the creation of an online restaurant management system appears to be a viable remedy for the dynamic restaurant sector. This project aims to improve customer accessibility and happiness by streamlining restaurant operations, namely in the areas of table booking and management. Given the increasing need for advanced technological services, the online platform provides a productive way to streamline and automate restaurant operations. With its user-friendly interface and information centralization, this system enables restaurant operators to effectively attend to the demands of their patrons. Adopting such technical innovations is crucial for restaurant businesses to succeed in the modern digital era. The main goal of the project is to make it easier for managers to oversee restaurant operations while keeping an eye on things like customer data management and smoother operations.

IX. FUTURE ENHANCEMENT

The future scope of this project includes the potential for incorporating advanced AI and machine learning algorithms to optimize restaurant operations further. Additionally, the system can be extended to include features like personalized recommendations, loyalty programs, and real-time analytics for enhanced customer engagement. As the restaurant industry continues to evolve, this platform can adapt to accommodate emerging trends and customer preferences, ensuring its continued relevance and success.

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