RENDEZVOUS RESTAURANT WEBSITE DOCUMENTATION

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OVERVIEW

1. Project background and description

The Rendezvous Restaurant Website is a full-stack web application designed to streamline online takeaways and reservations. The system will provide customers with a convenient platform to place takeout orders and make table reservations, while offering restaurant administrators robust tools for managing users, menu items, orders, and reservations.

*The application developed using **MySQL, Express, Vue.js, and Node.js** (MEVN stack), includes secure login functionalities to ensure authenticated access for customers using the takeaway feature. Admin users, including a designated "main admin" with extended permissions, will have comprehensive control over restaurant operations.*

2. Project Objective

- ***Enhance Customer Experience**: Provide an accessible platform for users to browse the menu, order takeaways, and make reservations.*
- ***Ensure Secure Access**: Implement secure, role-based access control to protect user data and restaurant information.*
- ***Optimize Restaurant Management**: Equip admins with the tools to manage all essential components, including orders, reservations, and users.*
- ***Scalability**: Deploy the system on **Microsoft Azure** for future scalability, stability, and performance optimization.*

3. Key Features

3.1 Customer Authentication & Authorization

- ***Takeaway Feature Access**: Customers must register and authenticate to access the takeaway functionalities.*
- ***Reservation Feature Access**: Reservations are available to all customers, with or without authentication.*
- ***Main Admin**: Manages all aspects, including user accounts, orders, reservations, and permissions.*
- ***Standard Admin**: Manages orders, menu items, and reservations but has limited access to user account management.*

3.2 Menu Browsing & Takeaway Ordering Process

***Menu Browsing**:*

- *Customers can view menu items organized by category, including images, descriptions, and prices.*
- *Menu items can be added to the takeaway cart once the customer is logged in.*

Takeaway Ordering Flow:

- ***Step 1**: User browses menu items and adds selections to the takeaway cart.*
- ***Step 2**: User proceeds to review and confirm their takeaway order.*
- ***Step 3**: User completes the payment process to finalize the order.*
- ***Step 4**: System confirms the order and notifies the user of an estimated pickup time.*

3.3 Reservation System

- ***Table Reservations**: Open to all users without requiring an account or login.*
- ***Reservation Details**: Allows customers to select the date, time, number of guests, and provides confirmation for successful bookings.*

3.4 Admin Dashboard & Management Functions

- ***Menu Management**: Admins can add, edit, and delete menu categories and items.*
- ***Order Management**: View and update takeaway orders, including status changes.*
- ***Reservation Management**: View and manage upcoming reservations.*
- *Only the **Main Admin** can manage user roles and accounts.*
- *Main Admin can add or remove admin permissions and update customer accounts.*

3.5 Notification System Order

- ***Order & Reservation Notifications**: Customers receive real-time updates on order and reservation statuses.*
- ***Admin Alerts**: Notifications for new orders, reservation updates, and user actions requiring attention.*

4. Technology Used

LAYER	TECHNOLOGY
FRONTEND	*Vue.js, SASS*
BACKEND	*Nodo.js, Express*
DATABASE	*MySQL*
SECURITY	*JWT (authentication), bcrypt (password hashing)*
DEPLOYMENT	*Microsoft Azure*

5. System Architecture

The application follows a client-server architecture that separates the frontend, backend, and database layers.

- **Frontend:** *Built with **Vue.js, SASS**, providing a responsive, user-friendly interface.*
- **Backend:** *Developed using **Node.js and Express**, handling all application logic, authentication, and database interactions.*
- **Database:** ***MySQL** for structured data management, including users, orders, reservations, and menu items.*
- **Authentication & Authorization:** *Implemented using **JWT** (JSON Web Token) for session management, ensuring role-based access control for both customers and admins.*

6. Deployment Strategy

*Deployment on **Microsoft Azure** ensures a secure, scalable, and accessible environment for the Rendezvous Restaurant Website.*

Benefits include:

1. ***High Availability**: Continuous access for users.*
2. ***Scalability**: Allows for resource expansion to accommodate increased traffic and future enhancements.*
3. ***Compliance & Security**: Meets modern data protection standards to protect sensitive information.*

7. Target Audience

*The Rendezvous Restaurant Website is intended for **small to medium-sized restaurants** looking to modernize customer engagement by offering online ordering and reservation options. This solution supports operational efficiency while improving service accessibility.*

8. Development Roadmap

8.1 Development Phases

The project will proceed in distinct phases to ensure thorough testing and organized development.

- ***Backend Development**: API setup, database integration, and authentication.*
- ***Setup & Initial Configuration Frontend Development**: User interface and cart/order components using Vue.js.*
- ***Admin Dashboard Implementation**: Role-based access and admin controls.*
- ***Testing**: Functional, integration, and user acceptance testing.*
- ***Deployment**: Deployment on Microsoft Azure.*

9. Requirements Gathering

Functional Requirements

Customer-Facing Requirements

- ***Authentication for Takeaway**: Users must register and log in to place takeaway orders.*
- ***Menu Browsing**: Publicly accessible menu with item descriptions, images, and prices.*
- ***Takeaway Order Flow**: Logged-in customers can add items to a cart, review their order, and complete payment.*
- ***Reservation System**: Available without authentication, allowing users to reserve tables by selecting date, time, and number of guests.*
- ***Notifications**: Real-time order and reservation updates for customers.*

Admin Requirements

- ***Main Admin Role**: Full control over the system, including managing user accounts, assigning admin roles, and viewing restaurant activity.*
- ***Standard Admin Role**: Limited to managing orders, reservations, and menu items.*
- ***Dashboard Overview**: Quick view of recent orders, reservations, and critical user actions.*
- ***Order Management**: View and update takeaway orders.*
- ***Reservation Management**: Manage and update reservation statuses.*
- ***User Management**: Exclusively for the Main Admin, who can add/remove users and update roles.*

Non-Functional Requirements

- ***Scalability**: Azure-hosted solution capable of handling increased traffic.*
- ***Security**: Secure authentication, password hashing, and role-based access.*
- ***Performance**: Fast response times and minimal downtime.*
- ***Usability**: User-friendly interface with clear navigation.*
- ***Compatibility**: Accessible on multiple devices and compatible with major browsers.*
- ***Maintainability**: Modular code structure to facilitate updates and expansions.*

10. Future Enhancements

Potential improvements may include:

- *Customer Analytics: Insights for the admin on popular menu items and peak order times.*
- *Feedback System: Customers can leave feedback on menu items.*
- *Multi-Language Support: Increase accessibility with language options.*
- *Mobile App Development: Expand functionality to a mobile app for enhanced customer convenience.*

The Rendezvous Restaurant Website provides a comprehensive solution for managing restaurant operations and improving customer service. With a secure, scalable, and user-friendly design, the platform enhances customer engagement and operational efficiency, aligning with the demands of a modern dining experience.