

# Project Report

**Project Title: HnH Foods [Restaurant Event Management]**  
**by zrnth**

**Course Title: System Analysis and Design**  
**Course Code: CSE471**

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**Note:** As it was a real-time project, usernames and details are hidden for privacy reasons.

## Introduction (Project Story)

In an era where convenience and customisation are paramount in the service industry, the need for an intuitive and efficient platform for organising events at restaurants has never been more evident. Our project, the Restaurant Event Management Website, attempts to address this need by providing a comprehensive solution that streamlines the entire event planning process.

The concept stemmed from recognizing the challenges individuals and organizations face when coordinating events at restaurants. From selecting suitable menus to arranging themes, managing reservations, and handling payments, the intricacies of event planning demand a coordinated approach. Through this project, we aim to simplify these complexities and offer a user-friendly interface that empowers customers to plan and execute their events seamlessly.

With a focus on enhancing user experience and maximizing functionality, our project encompasses a range of features designed to cater to diverse event requirements. From menu selection to theme customization, scheduling, and online payment integration, every aspect of event management is meticulously addressed.

This report provides an in-depth overview of the Restaurant Event Management Website project, outlining its objectives, key features, target audience, technology stack, and implementation strategies. By delving into the intricacies of the project development process, we aim to showcase the innovation, dedication, and expertise that have gone into creating a platform poised to revolutionize the way events are organized at restaurants.

## **Technology**

<b>Language</b>	Mern (MongoDB, Express.js, React.js, and Node.js)
<b>Framework</b>	(HTML, JavaScript,CSS)

## **User Manual**

### **How to use the project from Github and run the project locally:**

- 1.) Download and install Nodejs.
- 2.) Download and install MongoDB Compass.

- 3.) Download the repository from GitHub or clone the repository with ‘*git clone*’ command with the link to the repository
- 4.) Navigate to the project directory on VS Code
- 5.) Navigate to the backend directory and install the dependencies : ‘*cd backend*’ and then ‘*npm install*’
- 6.) Start the development server with ‘*npm start*’ command
- 7.) Create a new terminal instance and navigate to the frontend directory and finally install dependencies with ‘*cd frontend*’ and ‘*npm install*’ commands
- 8.) Start the client development server with ‘*npm start*’ command
- 9.) Finally, open the browser and visit at <http://localhost:5173/>

For our web application we have two interfaces. One for Users and another for Admin.

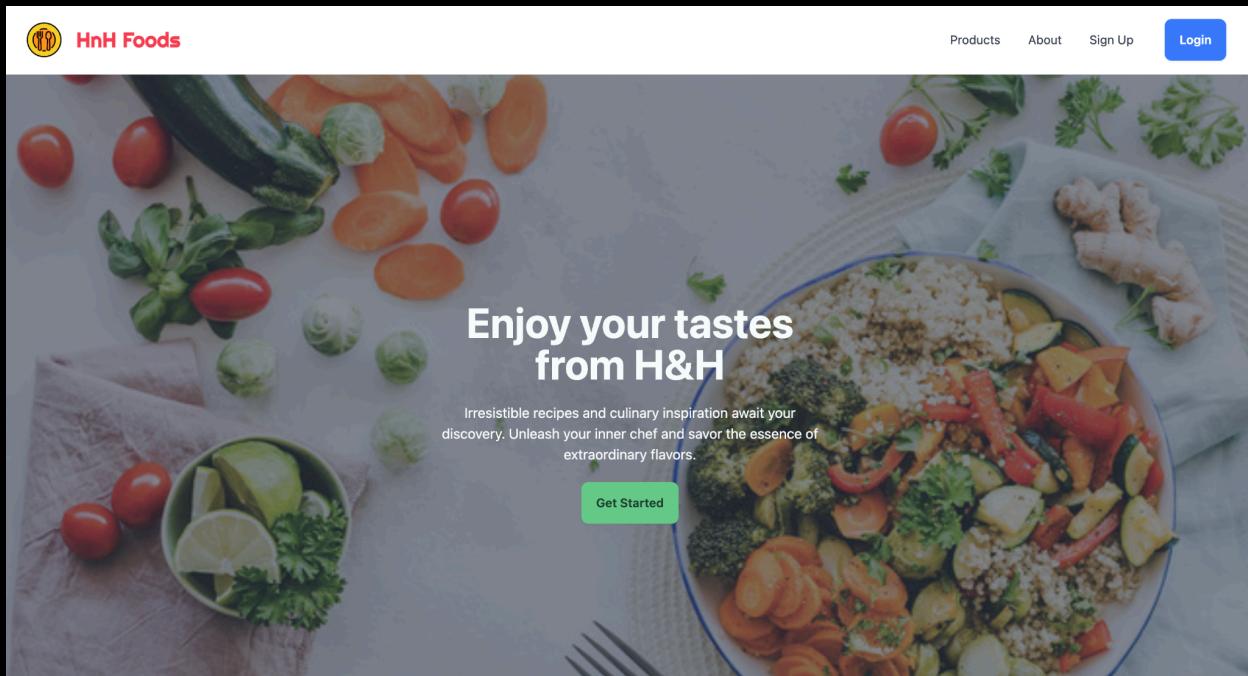
#### User Interface Description:

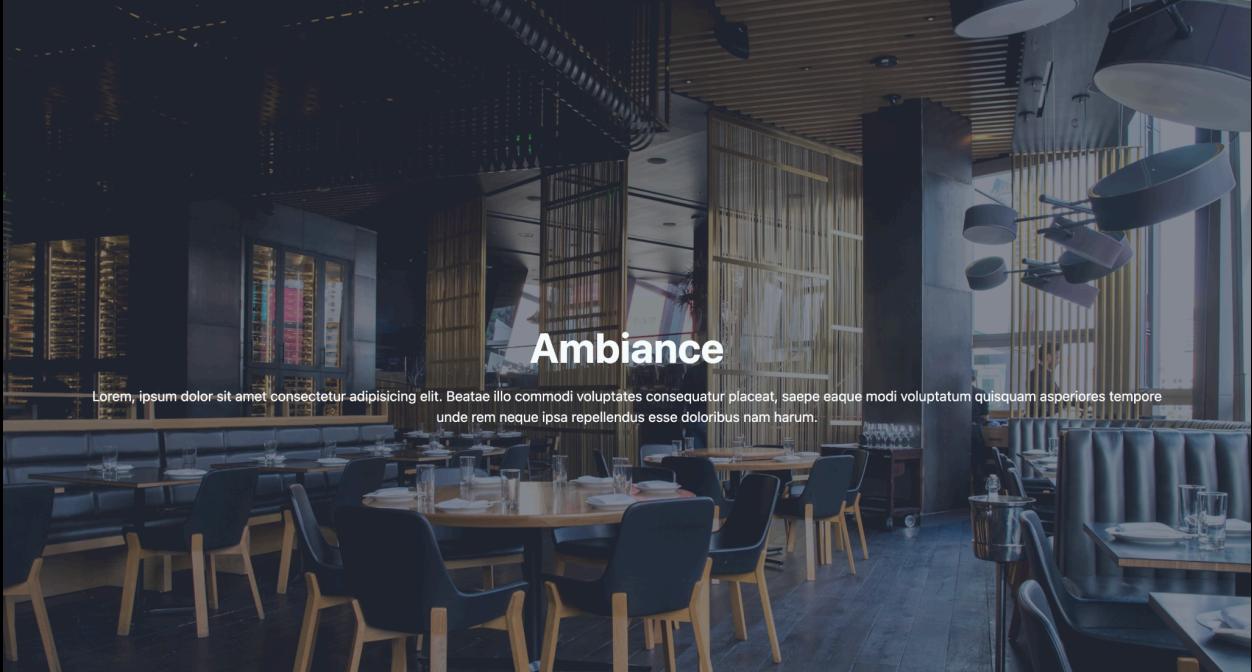
The user interface of our Restaurant Event Management Website offers a seamless experience for event planning and order management. Users can easily sign up, log in, and log out, ensuring personalized access to their accounts. Email verification adds an extra layer of security, confirming the authenticity of user accounts. The user profile section allows for easy editing and updating of personal information. With a user-friendly cart feature, users can effortlessly add or remove items as they browse the menu. The streamlined checkout process ensures a smooth transaction, with multiple payment modes available for convenience. Users receive timely order updates via email, keeping them informed every step of the way. Additionally, the reservation feature enables users to book tables or event spaces, specifying the type of reservation (dine-in or event) and checking seat availability in real-time.

#### Admin Interface Description:

The admin dashboard provides a comprehensive toolkit for managing the Restaurant Event Management Website efficiently. Accessible via a separate login portal, the admin interface allows admins to oversee user activity, with a user list showcasing registered users and the ability to ban or unban users as necessary. Admins can add new users to the system, ensuring a smooth

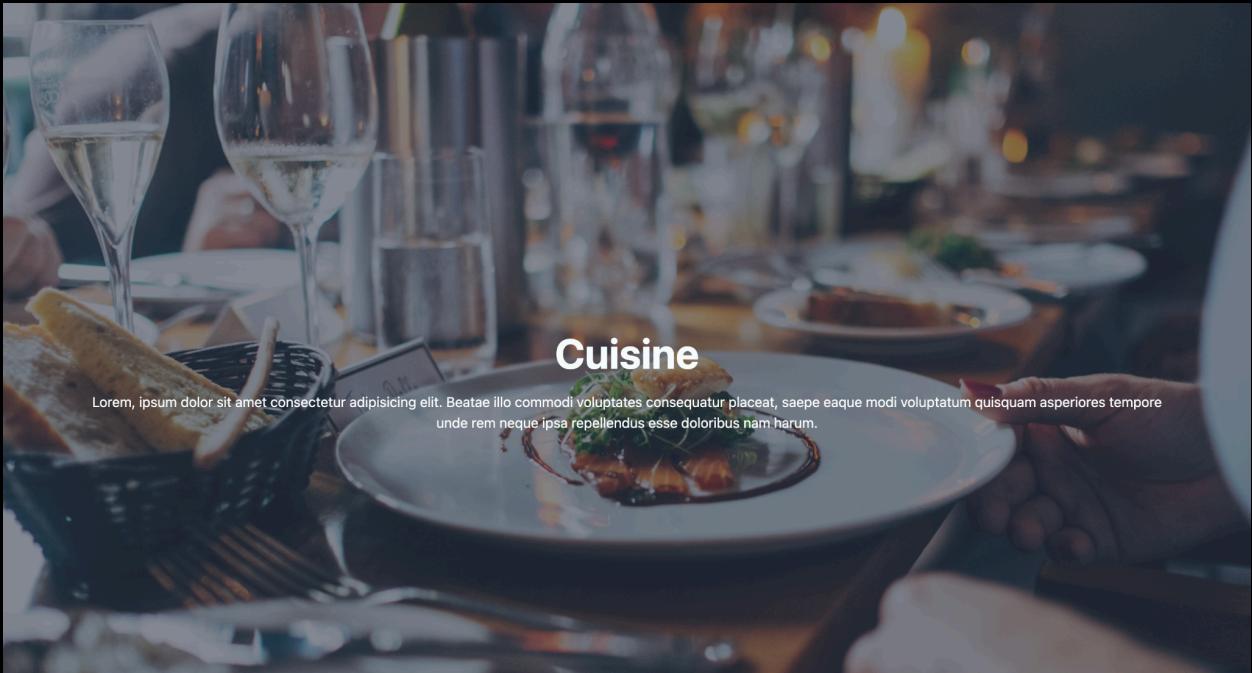
onboarding process. Total order statistics give admins insights into overall sales performance, with the ability to confirm or reject individual orders as needed. Furthermore, admins can manage reservations, confirming or holding bookings made by users and even reserving tables on behalf of customers. Top-selling statistics offer valuable data for strategic decision-making, while the calendar feature helps admins handle working hours and plan for upcoming events. The inclusion of ratings functionality allows admins to gauge customer satisfaction and address any concerns promptly.





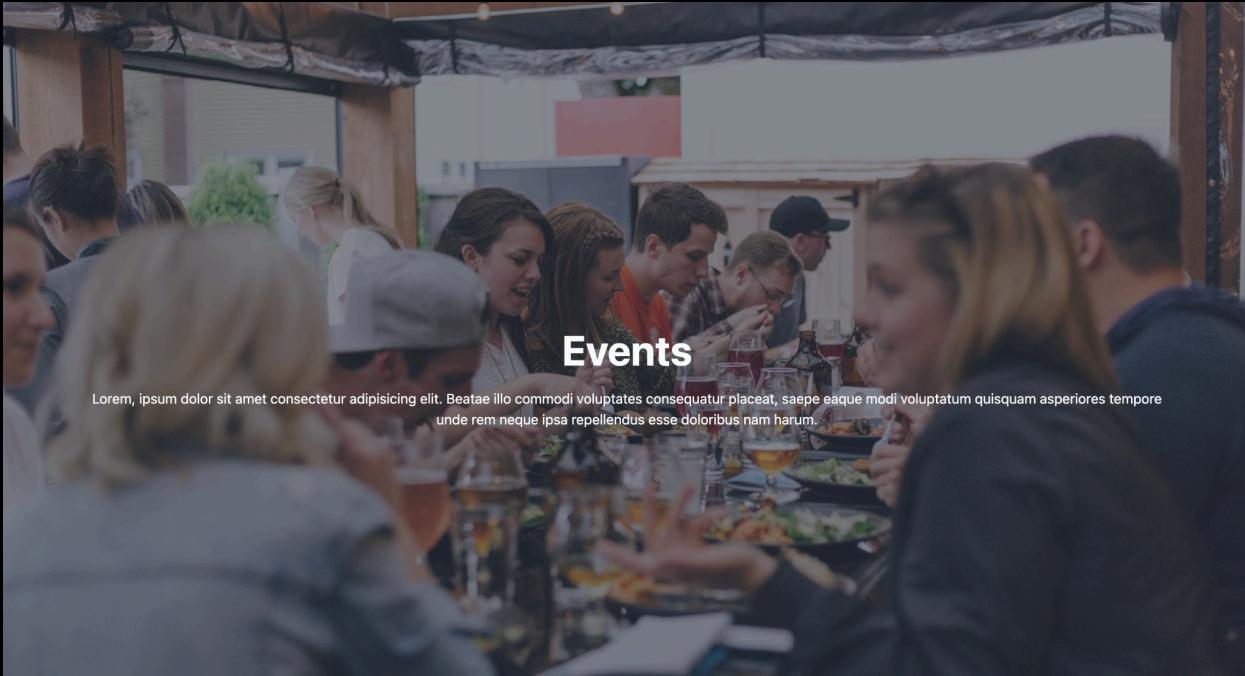
## Ambiance

Loreum, ipsum dolor sit amet consectetur adipisicing elit. Beatae illo commodi voluptates consequatur placeat, saepe eaque modi voluptatum quisquam asperiores tempore unde rem neque ipsa repellendus esse doloribus nam harum.



## Cuisine

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## Events

Lorem, ipsum dolor sit amet consectetur adipisicing elit. Beatae illo commodi voluptates consequatur placeat, saepe eaque modi voluptatum quisquam asperiores tempore unde rem neque ipsa repellendus esse doloribus nam harum.

[About us](#) [Contact](#)



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Figure 1: Home Page

The screenshot shows the 'About Us' section of the HnH Foods website. At the top, there's a navigation bar with links for 'Products', 'About' (which is highlighted in blue), 'Admin', 'Make Reservation', and a user icon labeled 'admin'. Below the navigation is a yellow circular logo with a stylized 'HnH' monogram. The main content area has a white background with a dark grey footer bar at the bottom containing social media icons for Twitter, YouTube, and Facebook.

## About Us

Welcome to HnH, where passion for food meets exceptional hospitality. Established in 2024, we are a family-owned business dedicated to providing an unforgettable dining experience for our guests. At HnH, we believe that great food goes hand in hand with warm, welcoming service. Our team is committed to creating a relaxed and inviting atmosphere where guests can savor delicious meals and make lasting memories with family and friends. Led by our experienced chefs, Zarin Haider and Tahir Hossain, our culinary team takes pride in crafting dishes that showcase the finest, locally sourced ingredients. From classic comfort foods to innovative culinary creations, each dish on our menu is thoughtfully prepared to delight the senses and tantalize the taste buds. Beyond our commitment to culinary excellence, we are equally passionate about hospitality. Our dedicated staff strives to provide attentive and personalized service, ensuring that every order to HnH is a truly enjoyable experience from start to finish. Whether you're booking us for a casual lunch, a romantic dinner, or a special celebration, we look forward to welcoming you to HnH and sharing our love for food and hospitality with you. Thank you for choosing us as your dining destination.

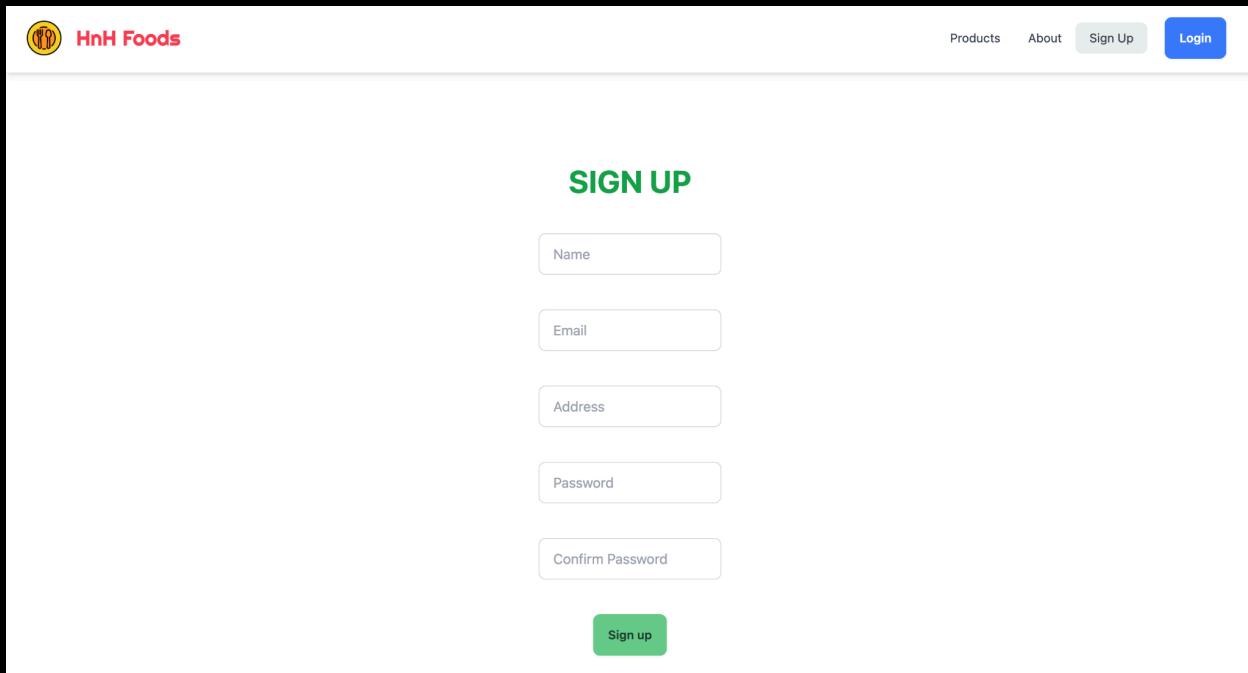
About us Contact

Twitter YouTube Facebook

Figure 2: About Section

## User Interface

1. Signup/Login/Logout: Allow users to create accounts, log in, and log out securely.



The screenshot shows the sign-up page for HnH Foods. At the top left is the logo and the brand name "HnH Foods". At the top right are navigation links for "Products", "About", "Sign Up" (which is highlighted in a grey box), and "Login". The main title "SIGN UP" is centered at the top in green capital letters. Below it are five input fields: "Name", "Email", "Address", "Password", and "Confirm Password", each with a placeholder text inside. At the bottom center is a green "Sign up" button.

SIGN UP

Name

Email

Address

Password

Confirm Password

Sign up

Figure 3

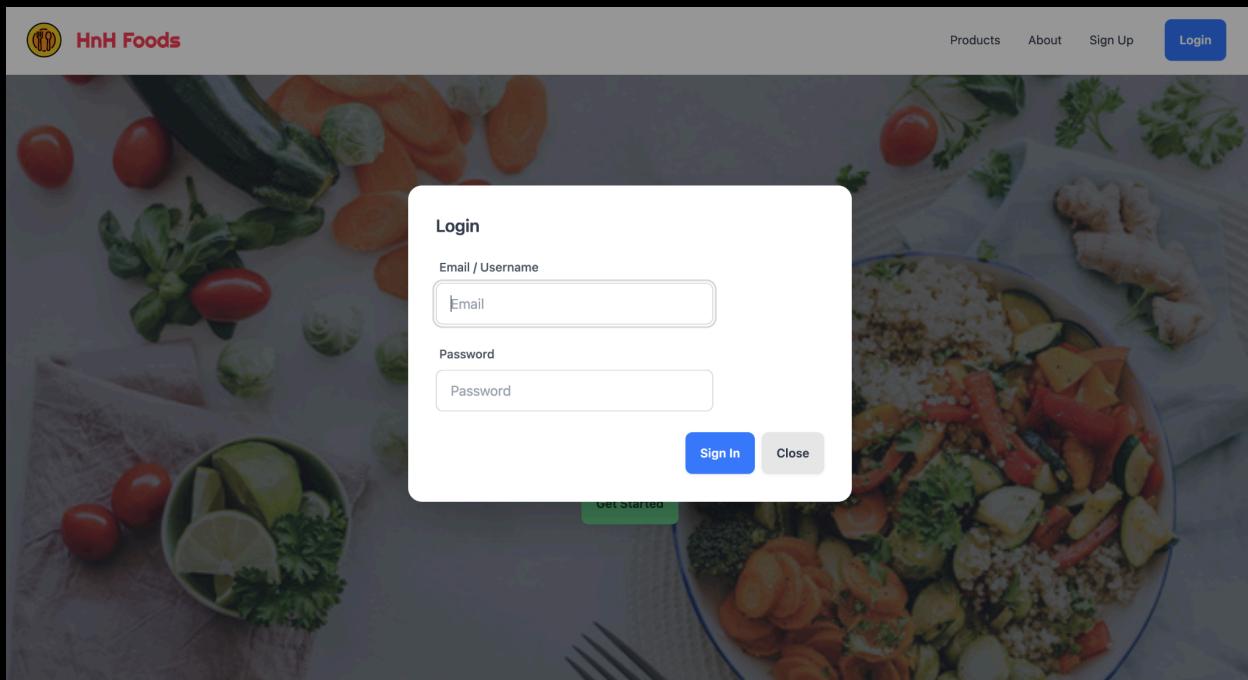


Figure 4

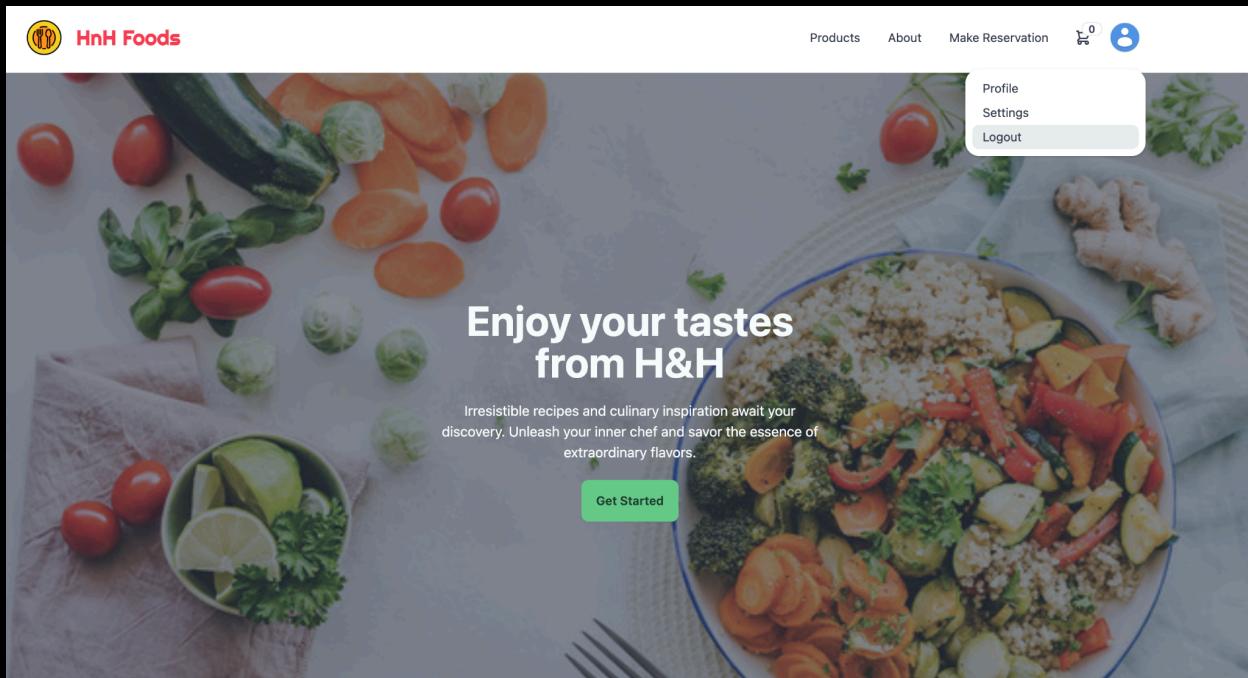


Figure 5

2. User Verification (email): Verify user email addresses to ensure validity.

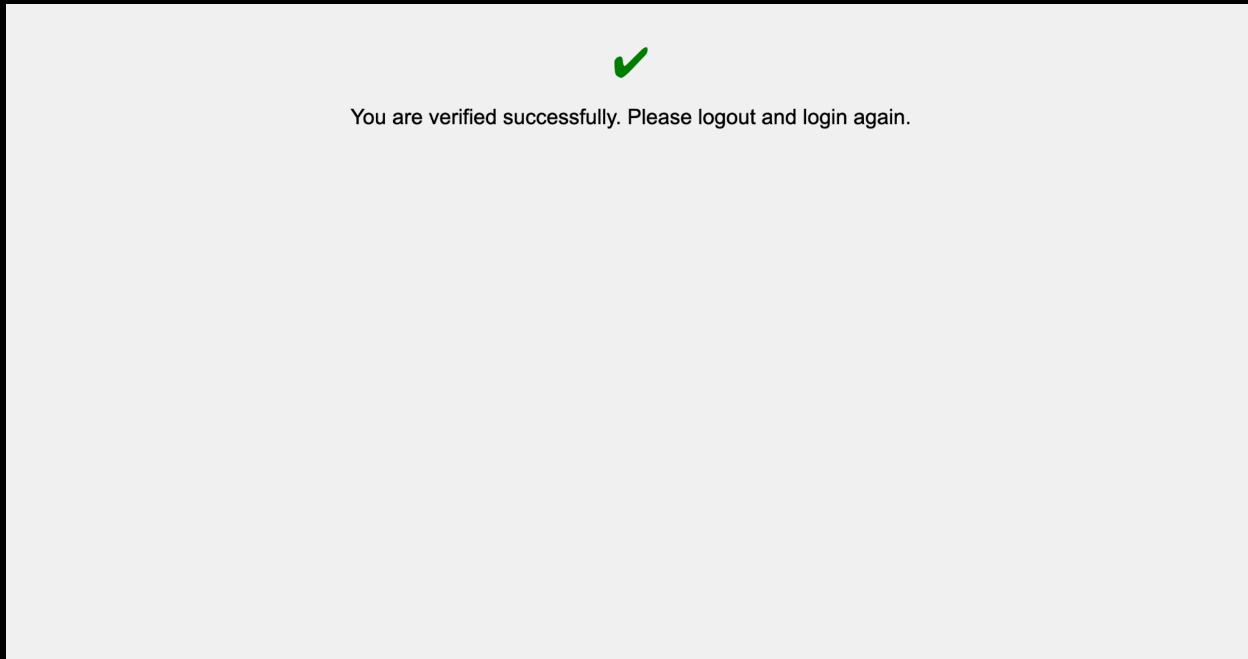


Figure 6

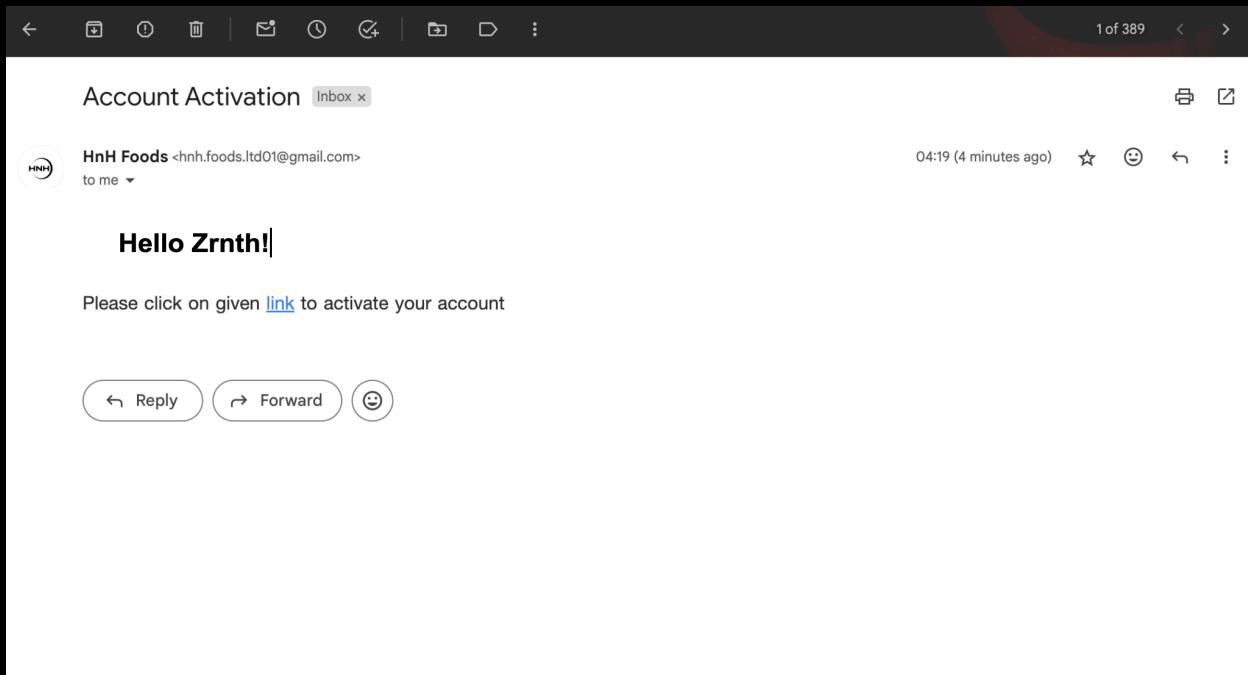


Figure 7

### 3. User Profile Edit and Update: Enable users to edit and update their profile information.

A screenshot of a web application interface for "HnH Foods". At the top, there is a navigation bar with links for "Products", "About", "Make Reservation", a shopping cart icon with "0" items, and a user profile icon. A dropdown menu is open over the profile icon, showing options: "Profile" (which is highlighted), "Settings", and "Logout". The main content area features a user profile card on the left with a placeholder profile picture, the text "Verified User", and the creation date "Created At: Sat Apr 06 2024". To the right of the profile card is a form for updating profile information, containing fields for "Email:", "Address:", and "Phone:". Below the form is a green "Update Info" button.

Figure 8

4. User Cart (Add/Remove): Users can add items to their cart for reservation or ordering purposes and remove them if needed.

The screenshot shows a website for "HnH Foods". At the top right, there are links for "Products", "About", "Make Reservation", a shopping cart icon with "0", and a user profile icon. Below the header, there is a grid of four food items:

- Pasta**  
baked with love  
**\$180.00** [View Details](#)  
Quantity:  [Add to Cart](#)  
**Total: \$360**
- Chicken Petty with Mushroom**  
chicken and mushroom  
**\$120.00** [View Details](#)  
Quantity:  [Add to Cart](#)  
**Total: \$120**
- Rice Bowl**  
Rice with chicken and veggies  
**\$160.00** [View Details](#)  
Quantity:  [Add to Cart](#)  
**Total: \$160**
- Premium Rice Bowl**  
rice bowl with extra chicken, egg and veggies  
**\$240.00** [View Details](#)  
Quantity:  [Add to Cart](#)  
**Total: \$240**

At the bottom of the page, there are links for "About us" and "Contact", and social media icons for Twitter, YouTube, and Facebook. The copyright notice "Copyright © 2024 - All right reserved by HnH" is also present.

Figure 9

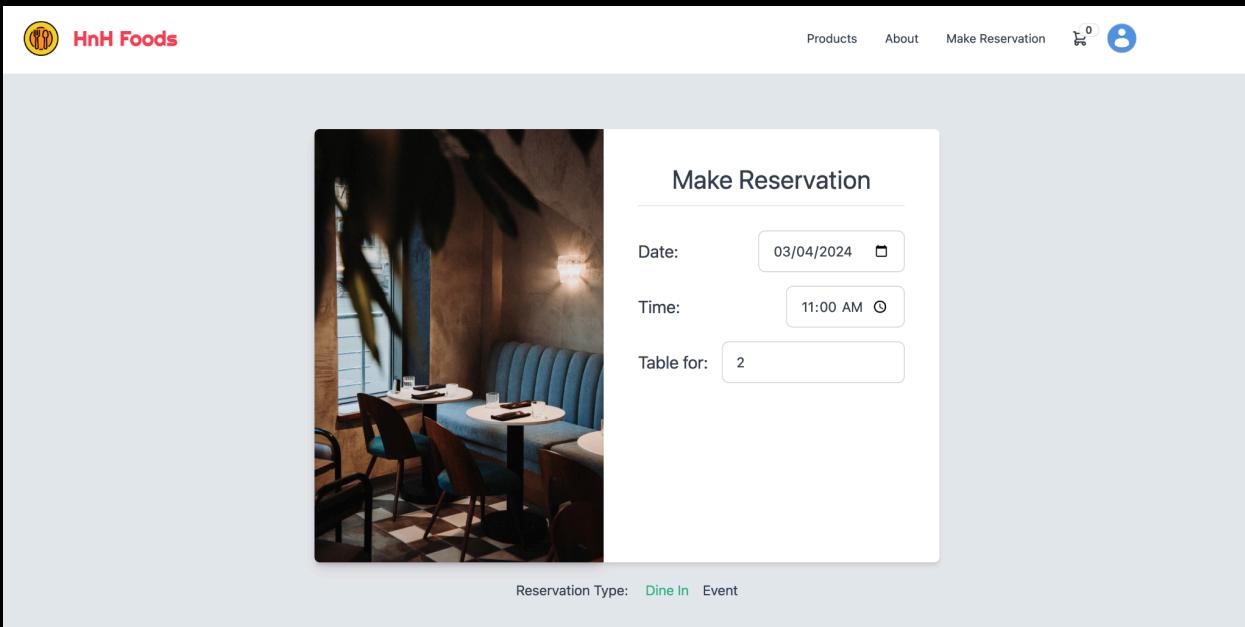


Figure 10

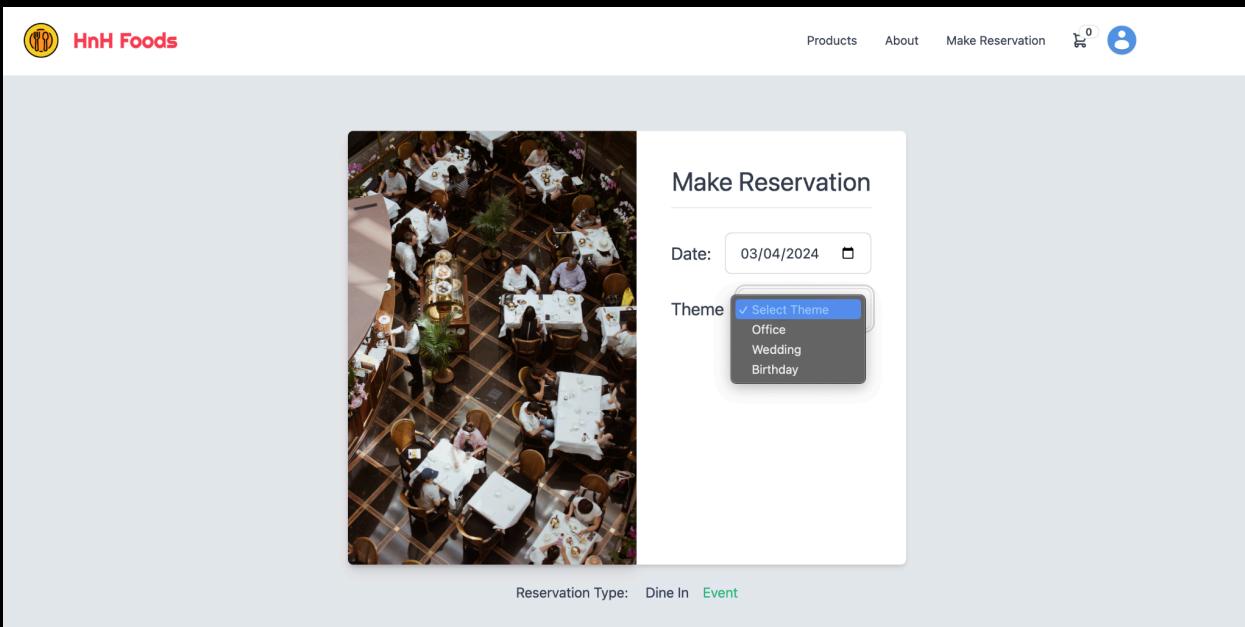


Figure 11

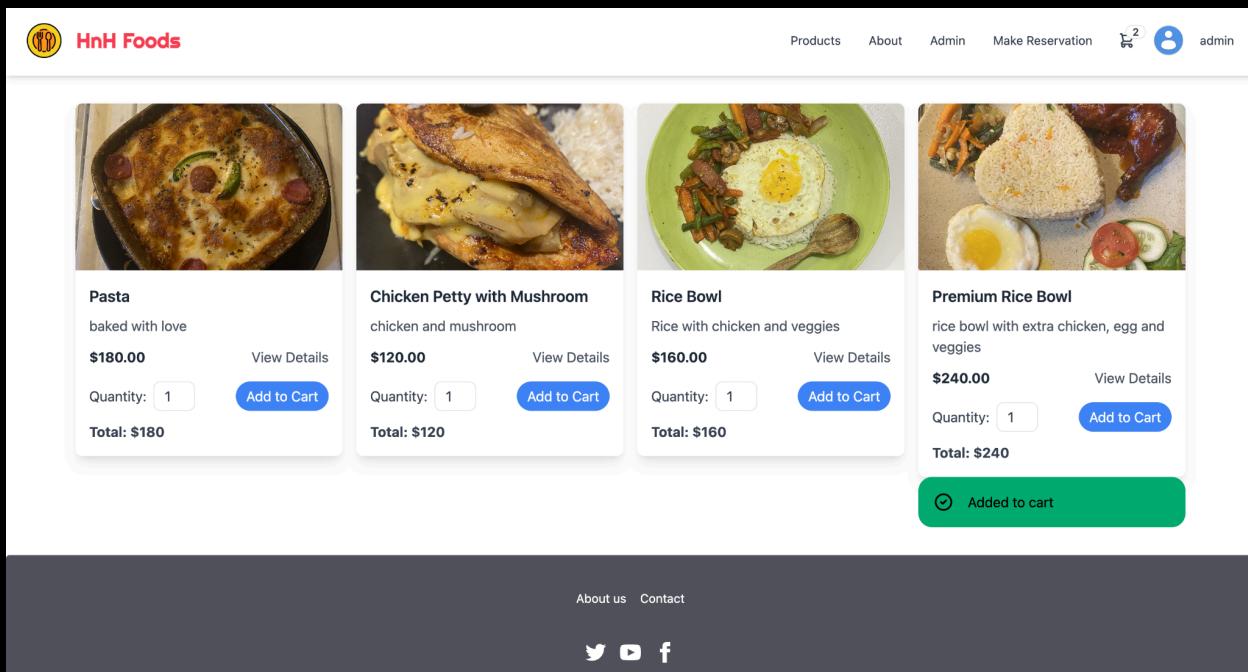


Figure 12

The screenshot shows the HnH Foods website with a navigation bar at the top featuring the logo, 'HnH Foods', and links for 'Products', 'About', 'Admin', 'Make Reservation', a user icon with '2', and 'admin'. Below the navigation is a 'Shopping Cart' section:

2 Items	
Subtotal: 480	
<b>Chicken Petty with Mushroom</b> chicken and mushroom Price: \$120 Quantity: 2	<a href="#">View cart</a>
<b>Premium Rice Bowl</b> rice bowl with extra chicken, egg and veggies Price: \$240 Quantity: 1	<a href="#">Remove</a>

Total: \$480.00

[Checkout](#)

At the bottom, there is a footer with 'About us', 'Contact', social media icons for Twitter, YouTube, and Facebook, and a copyright notice: 'Copyright © 2024 - All right reserved by HnH'.

Figure 13

5. User Checkout: Provide a seamless checkout process for users to finalize their orders or reservations.

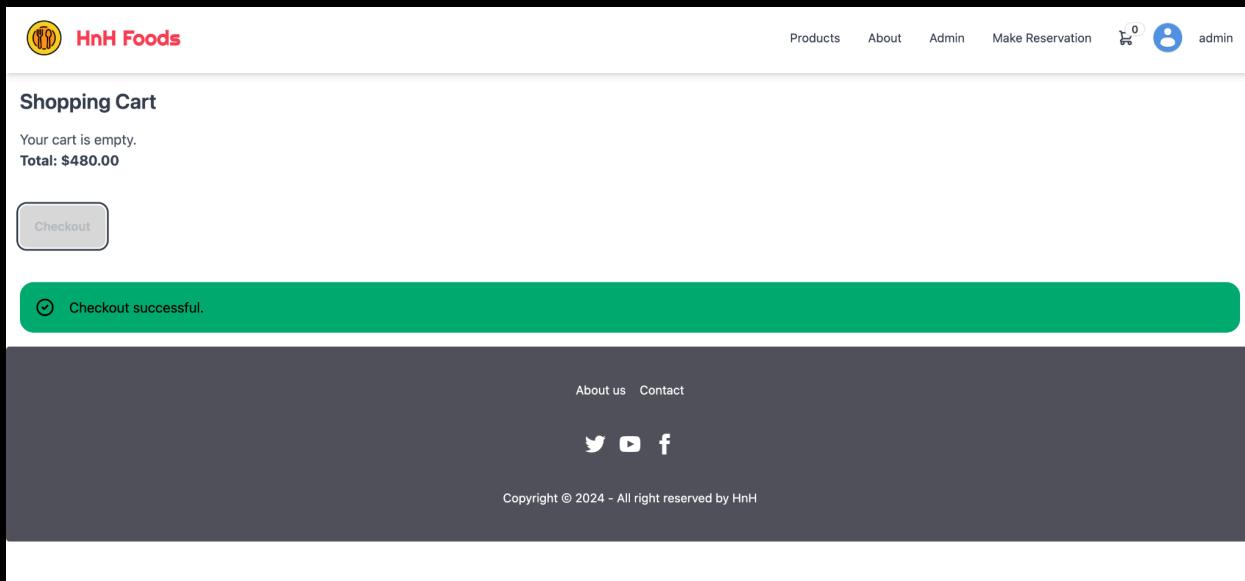


Figure 14

6. User Payment Mode: Support payment methods for users to complete transactions securely.

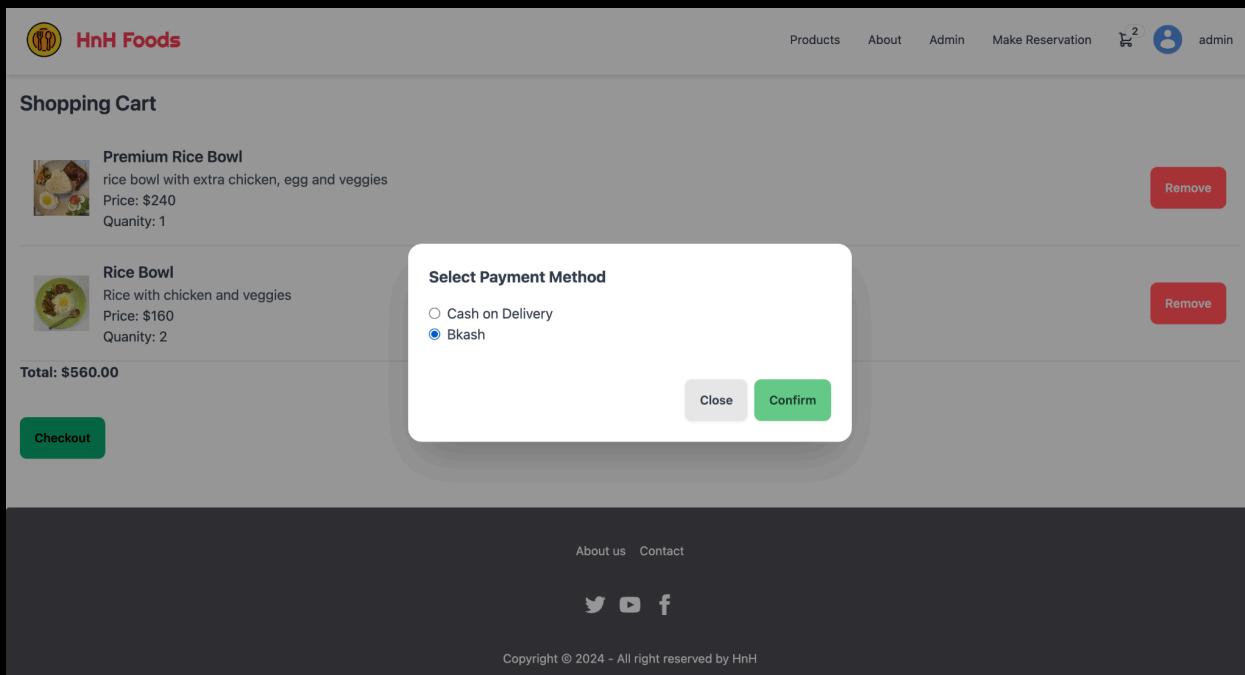


Figure 15

7. Order Updates via Email: Send email notifications to users to keep them informed about their order status.

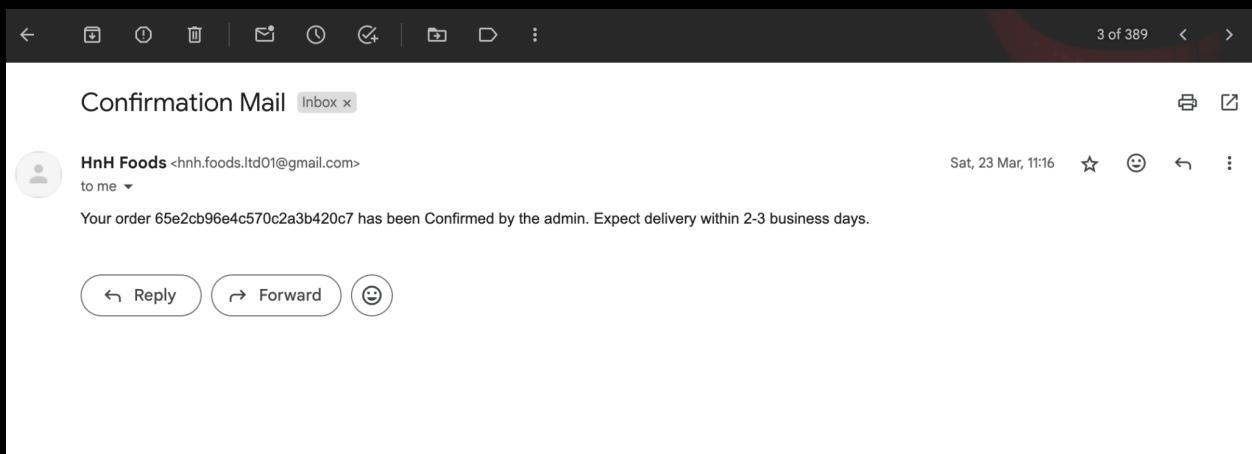


Figure 16

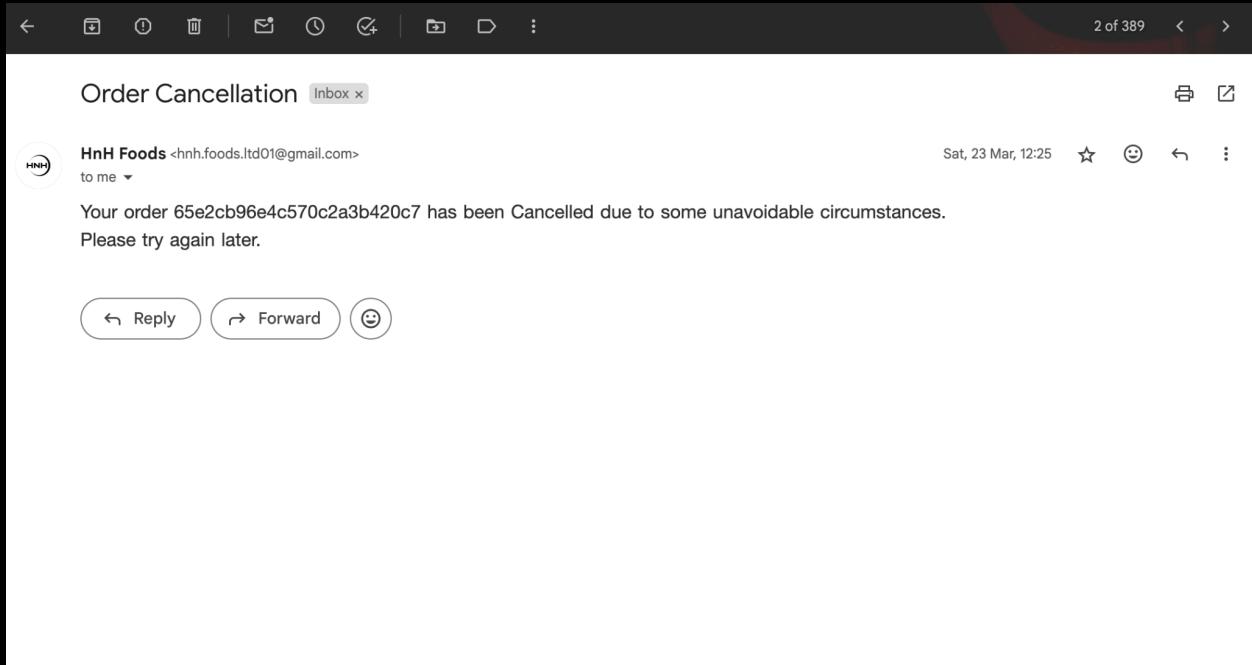


Figure 17

8. Quantity and Price Updates Accordingly: Automatically update the total price based on the quantity of items in the cart.

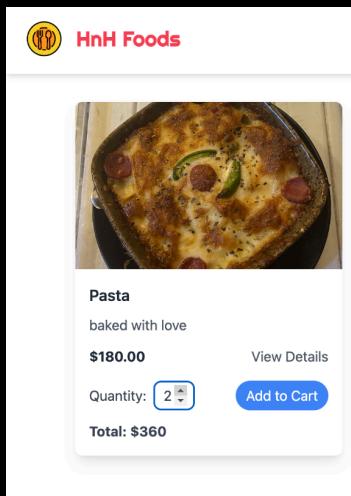


Figure 18

9. Reservation (Add/Remove): Allow users to make and cancel reservations for dining or events.

HnH Foods						
Dashboard						
Log out						
admin	April 13	12:00	dinein	2	pending	<button>Confirm Reservation</button>
	April 25	19:00	event	4	pending	<button>Confirm Reservation</button>
	April 25	19:00	event	4	pending	<button>Confirm Reservation</button>
admin	April 16	11:00	event	2	pending	<button>Confirm Reservation</button>
	April 3	11:00	dinein	3	Confirmed	<button>Confirm Reservation</button>
admin	April 10	18:00	event	3	pending	<button>Confirm Reservation</button>
admin	April 6	11:00	dinein	30	pending	<button>Confirm Reservation</button>
admin	April 6	11:00	dinein	2	Confirmed	<button>Confirm Reservation</button>
	April 6	11:00	dinein	2	pending	<button>Confirm Reservation</button>
admin	April 13	11:00	dinein	2	Confirmed	<button>Confirm Reservation</button>

Figure 19

10. Reservation Type (Dine/Event): Specify different types of reservations based on dining or event attendance. Figure number (10 and 11)

11. Seat Status: Display the availability of seats and date for dining or event reservations.

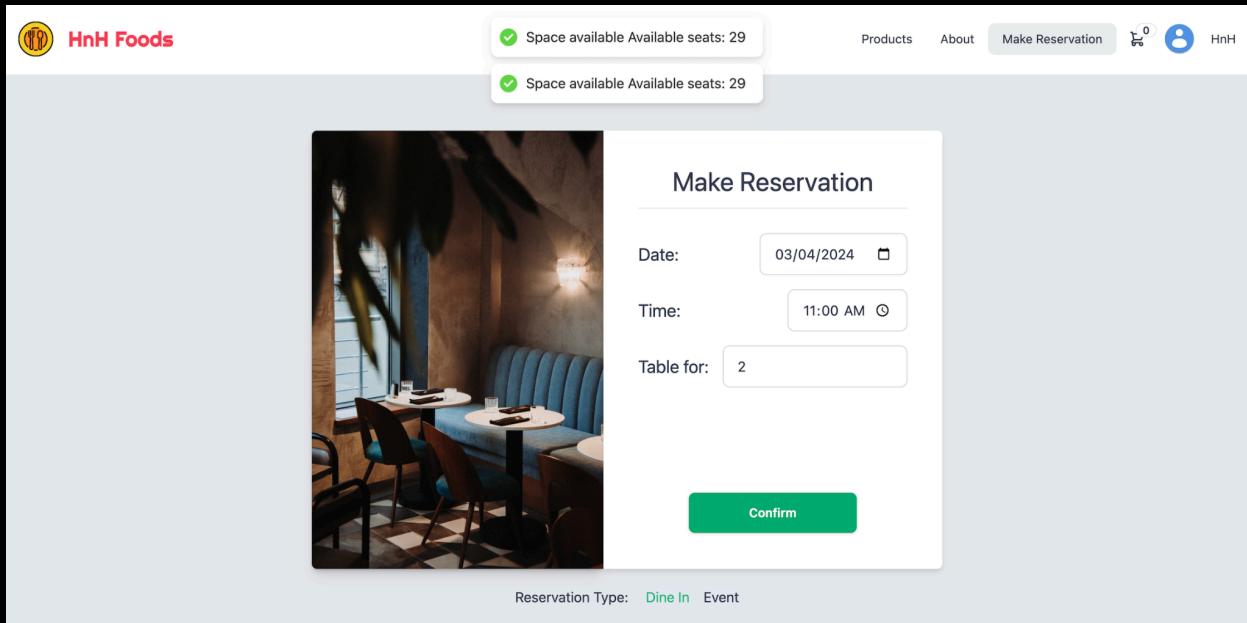


Figure 20

Admin Features:

1. Admin Dashboard Separate Login: Provide a secure login portal for administrators to access the dashboard.

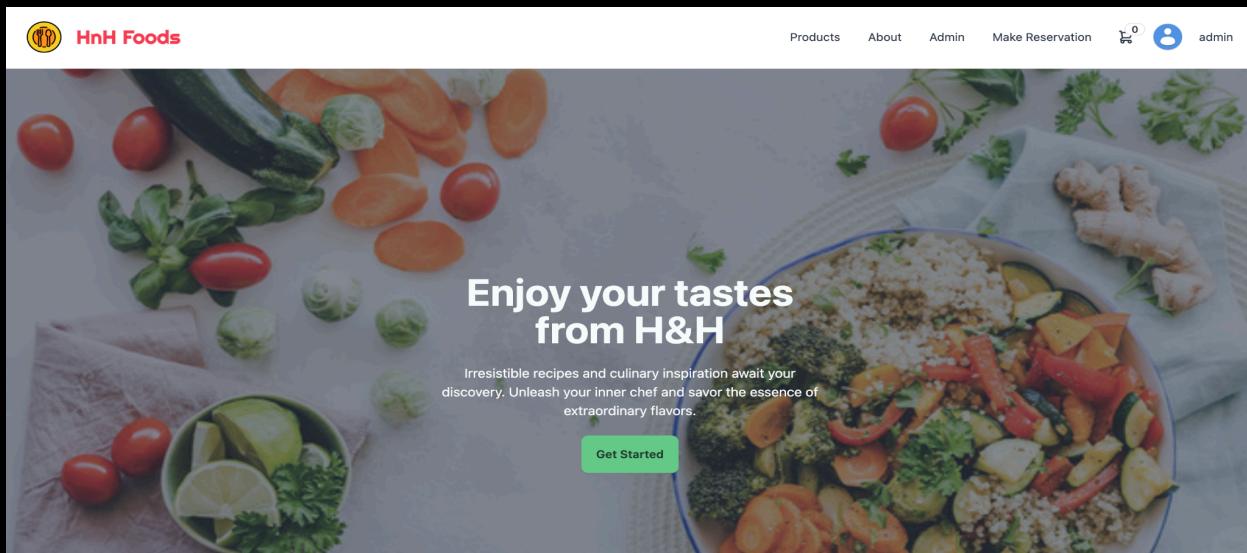


Figure 21

2. Admin Can See User List: View a list of registered users for management purposes.

The screenshot shows the HnH Foods admin dashboard. At the top, there's a navigation bar with links for Products, About, Admin (which is currently selected), Make Reservation, and a user profile for 'admin'. A shopping cart icon shows 0 items. On the left, a sidebar has 'Dashboard' and 'Log out' options. The main area has two cards: 'Recent Orders' (listing 6 orders) and 'Top Selling' (listing products like Chicken Petty with Mushroom, Premium Rice Bowl, Pasta, and Rice Bowl). The 'Recent Orders' card includes a 'See All' button at the bottom.

Order #	Date	Customer	Total	Status	Actions
6622f457d5ab53f092895b30	2024-04-19T22:46:47.265Z	admin	₹560	Pending	<span>✓</span> <span>✗</span>
6622f22dd5ab53f092895b12	2024-04-19T22:37:33.419Z	admin	₹480	Pending	<span>✓</span> <span>✗</span>
6610c09a64bb61579a766fd9	2024-04-06T03:25:14.799Z		₹160	Pending	<span>✓</span> <span>✗</span>
6605d311dfe48c7008ad06eb	2024-03-28T20:29:05.817Z	admin	₹600	Confirmed	<span>✓</span> <span>✗</span>
6605cdeadfe48c7008ad057f	2024-03-28T20:07:06.671Z	admin	₹300	Cancelled	<span>✓</span> <span>✗</span>
65e2cb96e4c570c2a3b420c7	2024-03-02T06:47:50.058Z		₹240	Confirmed	<span>✓</span> <span>✗</span>

Figure 22

3. Admin Can Ban/Unban Any User: Grant administrators the ability to suspend or reinstate user accounts.

The screenshot shows the HnH Foods Admin Dashboard. On the left is a dark sidebar with a logo, 'HnH Foods', a 'Dashboard' link, and a 'Log out' link. The main area has two sections: 'All Users' and 'All Reservations'.  
**All Users:** A table with columns: Name, Id, Email, and Actions. It lists five users: '65e2c1332adc49e0f8f9a075' (Actions: 'Unban User'), 'Zarin' (Actions: 'Ban User'), 'admin' (Actions: 'Ban User'), '65fe64d140e584898bc3be11' (Actions: 'Ban User'), and 'HnH' (Actions: 'Ban User').  
**All Reservations:** A table with columns: Name, Date, Time, Type, Capacity, Status, and Actions. It lists three reservations: 'HnH' on April 3 at 11:00 for dinein with capacity 2, status pending (Actions: 'Confirm Reservation'); 'admin' on April 3 at 11:00 for dinein with capacity 2, status pending (Actions: 'Confirm Reservation'); and 'admin' on April 20 at 11:00 for dinein with capacity 2, status pending (Actions: 'Confirm Reservation').

Figure 23

4. Admin Can Add User: Allow administrators to manually add users to the system.
5. Admin Can See Total Order: Display the total number of orders placed within a specified time frame.  
Figure number (22)
6. Admin Can Confirm/Reject Order: Enable administrators to approve or reject orders as necessary.  
Figure number (22)

7. Admin Can Confirm or Hold Reservation by User: Manage reservations by confirming or putting them on hold.  
Figure number (19 and 23)
8. Admin Can Reserve on Behalf of Users: Make reservations on behalf of users if necessary.

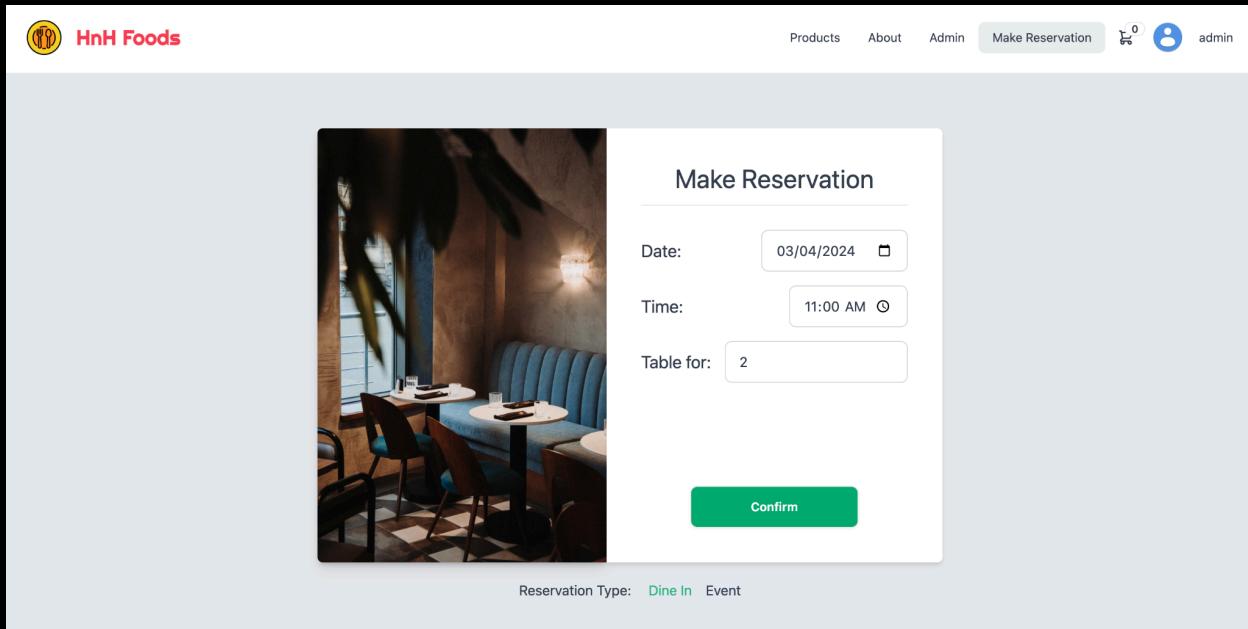


Figure 24

9. Top Selling Statistics: Provide statistical insights into the top-selling items or events.  
Figure number (22)

10. Calendar: Display a calendar for users to view available dates for reservations.

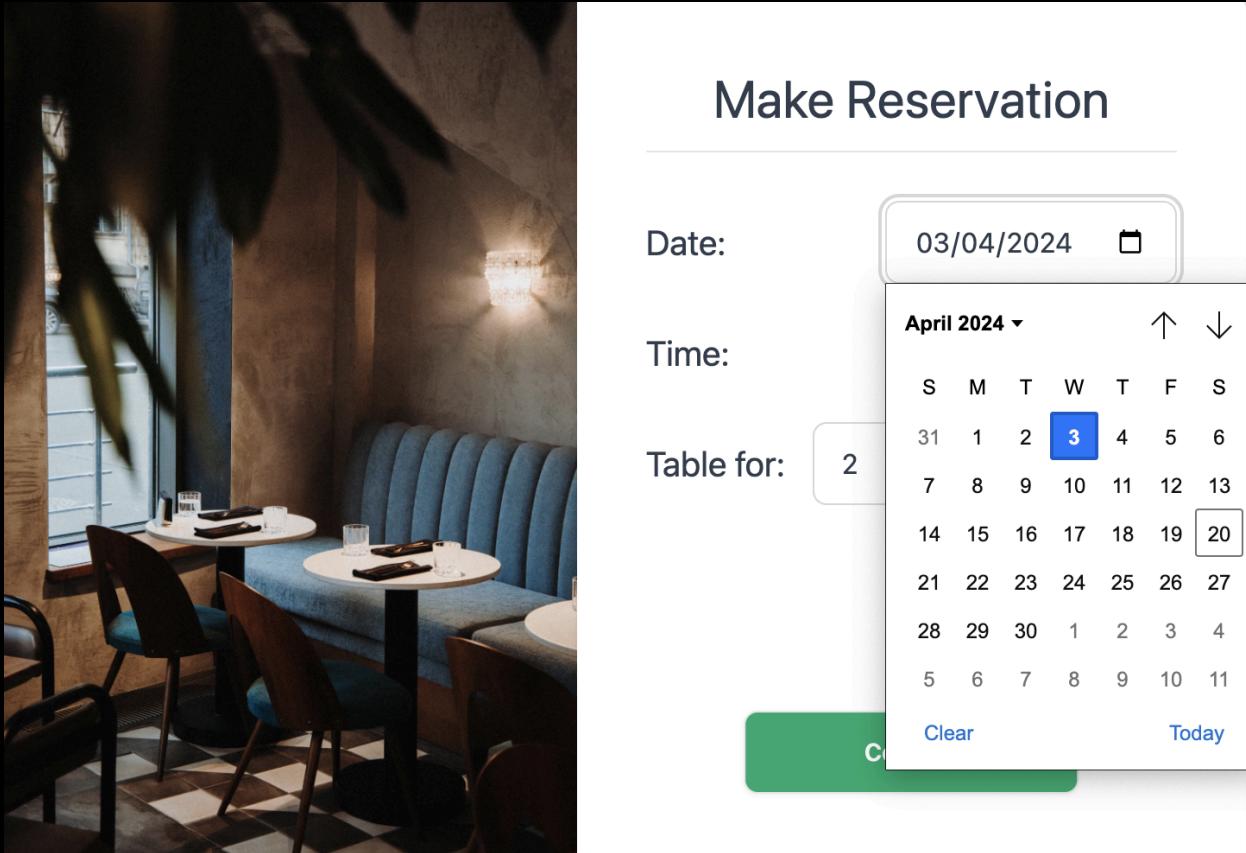


Figure 25

11. Handling Working Hours: Specify the restaurant's working hours to manage reservations accordingly.

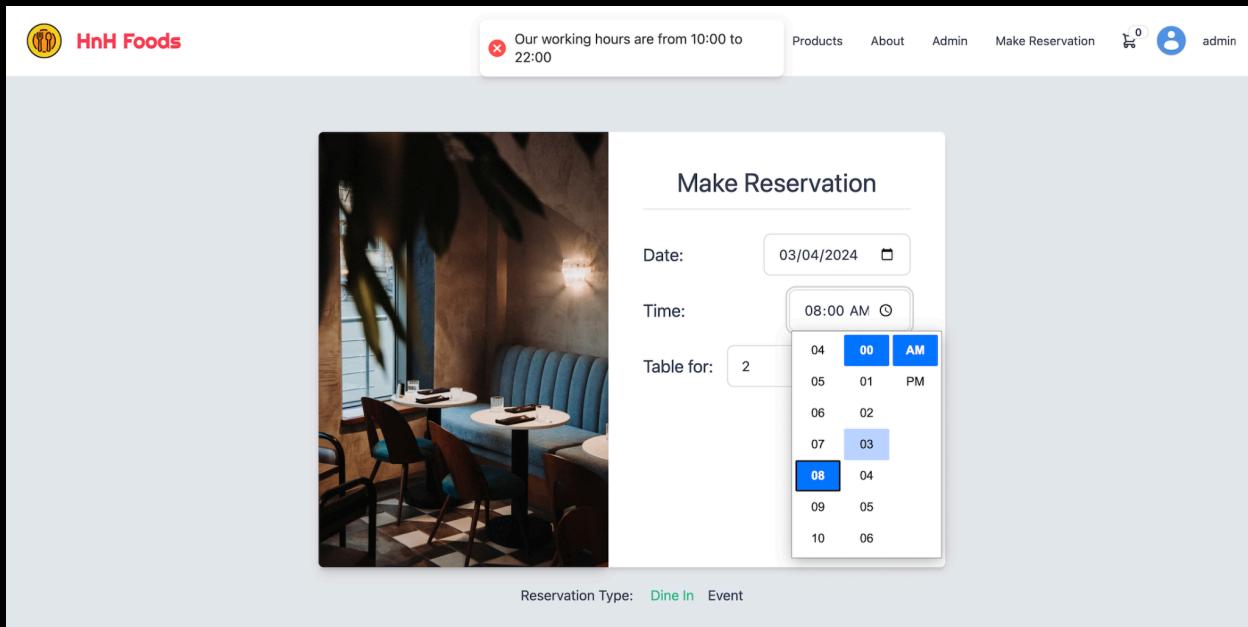


Figure 26

These features will help in creating a comprehensive and user-friendly platform for managing restaurant events effectively.

## Frontend Development

We have worked on the frontend part of the project using React.js. React uses JavaScript and XML (JSX) to render HTML. JSX is an extension to JavaScript that is similar to XML and HTML. React uses Babel to convert JSX into JavaScript. It has been used to create the structure of what will be viewed. The SS below shows a simple implementation of HTML code. For CSS, Tailwind was used to design the front end. It was used to make the frontend more beautiful. It shows a simple implementation of CSS code. Another SS shows a code snippet implementing JSX.

```

<!DOCTYPE html>
<html lang="en" data-theme="emerald">
  <head>
    <meta charset="UTF-8" />
    <link rel="icon" type="image/svg+xml" href="/assets/icons/medicine.png" />
    <meta name="viewport" content="width=device-width, initial-scale=1.0" />
    <link rel="preconnect" href="https://fonts.googleapis.com" />
    <link rel="preconnect" href="https://fonts.gstatic.com" crossorigin />
    <link href="https://fonts.googleapis.com/css2?family=Righteous&display=swap" rel="stylesheet"
      <title>HnH</title>
  </head>
  <body>
    <div id="root"></div>
    <script type="module" src="/src/main.jsx"></script>
  </body>
</html>

```

Figure 27: HTML Code

The screenshot shows the VS Code interface with the file `index.css` open in the editor. The code defines a banner with a background image, a large h1 title, and a paragraph below it.

```
* { box-sizing: border-box; margin: 0; padding: 0; } /* .header { background-image: url('https://i.ibb.co/470D54q/31739020-C980-41-E7-830-B-9-FFCE8090649.jpg'); background-size: cover; background-position: center right; padding: 3rem 5rem; height: 100vh; } */ .banner { margin-top: 15%; color: white; } .banner h1 { font-size: 3rem; font-weight: 800; } .banner p { margin-top: 2rem; margin-bottom: 3rem; max-width: 30%; font-size: 1.2rem; line-height: 1.5; }
```

Figure 28: CSS Code

The screenshot shows the VS Code interface with the file `CartItem.jsx` open in the editor. The code defines a component that handles removing items from a cart and fetching product details via an API.

```
/* eslint-disable react/prop-types */
import { useEffect, useState } from 'react';
import { useRemoveFromCart } from '../hooks/useRemoveFromCart';

const CartItem = ({ item, setSuccess }) => {
  const [product, setProduct] = useState(null);
  const [loading, setLoading] = useState(true);
  const [removeFromCart] = useRemoveFromCart();

  const handleRemove = async () => {
    console.log('Remove item', item);
    setLoading(true);
    await removeFromCart(item);
    setLoading(false);
    setSuccess(true);
  };

  useEffect(() => {
    console.log('CartItem item', item);
    const fetchItem = async (id) => {
      const response = await fetch(`http://localhost:3001/api/products/${id}`);
      const json = await response.json();
      const item = json.payload;

      if (item) {
        setProduct(item);
        setLoading(false);
      }
    };
  });
}

export default CartItem;
```

Figure 29: JSX Code

## **Backend Development**

The backend of our restaurant management website, developed in JavaScript using Express.js, adopts a RESTful API architecture to facilitate user interactions and manage data flow. Customers can register, verify themselves, update profiles, make reservations, and place orders, while administrators enjoy additional privileges such as reservation management, menu updates, and the ability to ban users when necessary. In enhancing user experience, the backend incorporates functionalities for calendar integration, and date management, crucial for scheduling reservations and order deliveries. Furthermore, the system includes email verification to ensure secure user registration and account validation. With comprehensive API documentation, developers can seamlessly navigate and interact with backend endpoints, enabling seamless integration between the frontend and backend systems.

**The backend implements the following business logic for the restaurant management website:**

User Authentication: Handles user registration, login, and authentication for secure access to protected routes.

User Management: Allows users to register, update their profiles, and view their reservation history.

Reservation Handling: Enables users to create, update, and cancel reservations. Admin users can confirm or reject reservations and manage seating availability.

Order Processing: Provides endpoints for placing and managing food orders, including order creation, updating order status, and tracking order history.

Payment Integration: Integrates with payment gateways to facilitate online payments for orders and reservations.

Admin Privileges: Admin users have additional privileges such as banning users, updating menu items, managing reservations, and generating reports.

The screenshot shows the Visual Studio Code interface with the following details:

- EXPLORER** sidebar: Shows the project structure under "RESTAURANT-MANAGEMENT". The "controllers" folder contains several files: auth.controller.js, cart.controller.js, categoryController.js, and checkout.controller.js (which is currently selected).
- WORKSPACE STATUS**: Shows 4K+ changes.
- CODE EDITOR**: Displays the content of "checkout.controller.js". The code handles a POST request to process a payment. It imports required modules like response.controller, http-errors, cart.model, order.model, and findItem.service. It logs the cart ID and payment method, finds the cart by ID, and creates a new order if the cart exists and has items. It also checks if the user in the cart matches the user in the request body.
- TERMINAL**: Shows log messages from Vite indicating new dependencies optimized and optimized dependencies changed, followed by a reload message.
- STATUS BAR**: Shows the current file is "main\*", the tab size is 4, and the encoding is UTF-8.

Figure 30: Controller

The screenshot shows a code editor interface with the following details:

- EXPLORER** sidebar: Shows the project structure under "RESTAURANT-MANAGEMENT". The "routes" folder contains several files: auth.routes.js, cart.routes.js, category.routes.js, checkout.routes.js, order.routes.js, products.routes.js, and register.routes.js.
- EDITOR**: The main area displays the content of `register.routes.js`. The code uses Express.js to handle routes for user registration and verification.
- TERMINAL**: The bottom panel shows the output of a `vite` command starting the development server at `http://localhost:5173/`. It also shows the installation of `daisyUI 4.7.3`, including the addition of four themes and support for the project.

Figure 31: Route

## Database Description (Schema Diagram)

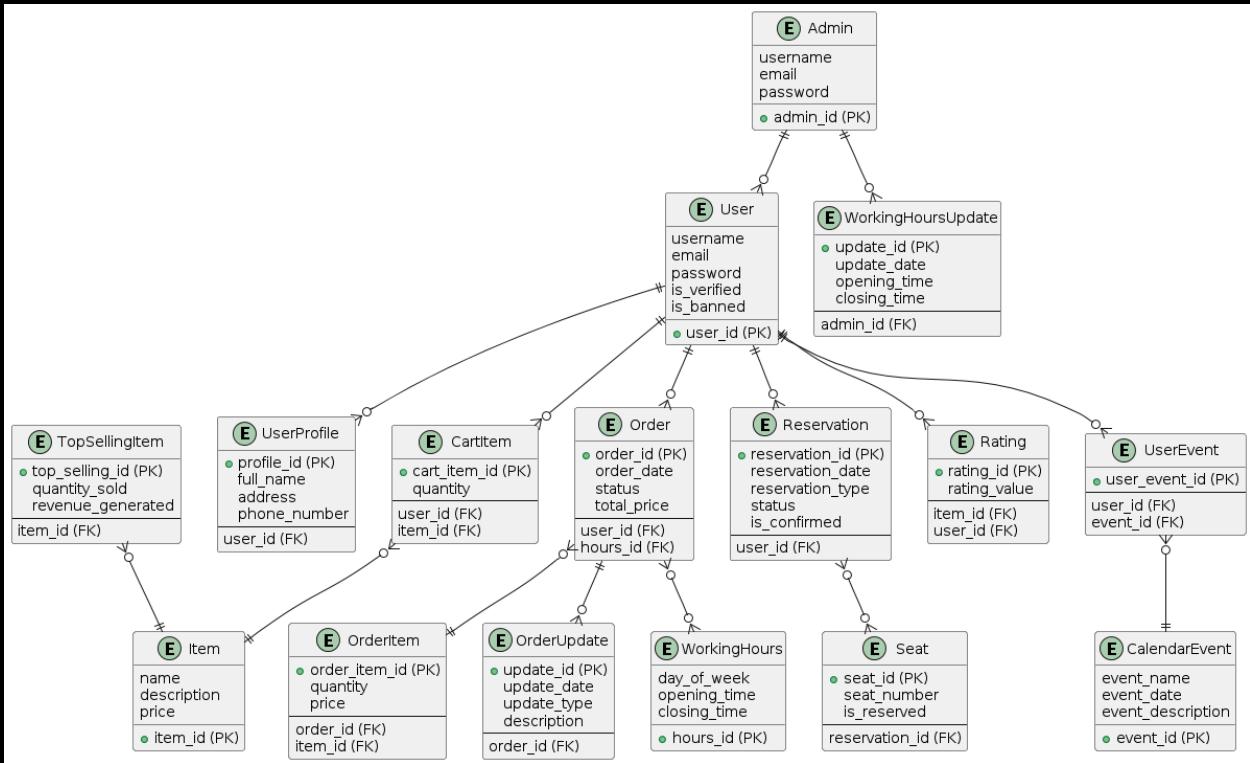


Figure 32: Schema

## GitHub Repo Link

<https://github.com/zrnth/Academics/tree/main/CSE%20471%3A%20Systems%20Analysis%20and%20Design/HnH%2C%20A%20Homemade%20food%20to%20Resturant%20Story>

## **(Chart)**

Home Page

User Verification

User Login/Logout/Signup

Admin Homepage.

User Profile

Payment and Checkout

Cart (Add/ Remove)

Reservation Control

Update Price, Quantity

Update Seat Status

Top Selling

Working Hours

Total Orders and Total Users

Ban and Unban Users

Order Confirmation/ Rejection

About Section

Products Section

Order Information Email

Pop Up Error Message

Floating Notifications