

ONLINE FOOD ORDERING USING JAVA SPRING BOOT

**Under the guidance of SmartInternz
Team ID - 470**

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1. INTRODUCTION:

The online food ordering system is a digital platform that enables customers to place food orders online through a website or mobile application. It revolutionizes the way people order food, providing a convenient and efficient alternative to traditional phone-in or in-person ordering. This system connects customers with a wide array of restaurants and food establishments, making it easier for them to explore diverse cuisines and menus from the comfort of their homes or on-the-go.

1.1 Overview: The online food ordering system functions as an intermediary between customers and restaurants, streamlining the entire food ordering process. It allows customers to browse through various restaurant menus, select their desired dishes, customize their orders, and place them for delivery or pickup. On the restaurant side, the system facilitates order management, communication with customers, and tracking the order status.

1.2 Purpose: The primary purpose of the online food ordering system is to enhance the overall dining experience for customers and streamline restaurant operations. Several key objectives drive the development and implementation of this system:

1. **Convenience:** The system aims to provide customers with a seamless and convenient way to order food anytime, anywhere, eliminating the need to physically visit restaurants or wait on hold for phone orders.
2. **Expanding Customer Reach:** By going online, restaurants can reach a broader customer base beyond their physical location. This expands their market reach and attracts customers who prefer the ease of ordering through digital platforms.
3. **Efficient Order Management:** The system optimizes the order management process for restaurants, ensuring accurate and timely processing of orders, reducing errors, and improving overall efficiency.
4. **Menu and Customization:** Customers can easily access a variety of restaurant menus and customize their orders according to their preferences, dietary requirements, or special requests.
5. **Real-time Tracking:** For delivery orders, the system often includes real-time order tracking, allowing customers to monitor their food's status from preparation to delivery.

2. LITERATURE SURVEY:

2.1 Existing Problem: While online food ordering systems offer numerous benefits, there are some existing problems and challenges that need to be addressed to ensure a smooth and satisfactory experience for both customers and restaurants. Some of the common problems include:

- a) **Technical Glitches:** The online platforms may encounter technical issues such as slow loading times, server crashes, or payment gateway failures, leading to frustrated customers and potential loss of sales.
- b) **Order Accuracy:** Miscommunication or errors during order placement can result in incorrect orders, leading to customer dissatisfaction and increased workload for restaurants to address such issues.
- c) **Delivery Delays:** Delivery services may face delays due to traffic, weather conditions, or an overwhelming number of orders, leading to dissatisfied customers and potential damage to the restaurant's reputation.
- d) **Limited Coverage:** Online food ordering systems may not cover all geographical areas, leaving some customers unable to access the service, especially in remote or less populated locations.
- e) **Menu Discrepancies:** Sometimes, the menu displayed on the online platform may not match the actual offerings at the restaurant, causing confusion and disappointment for customers.

2.2 Proposed Solution:

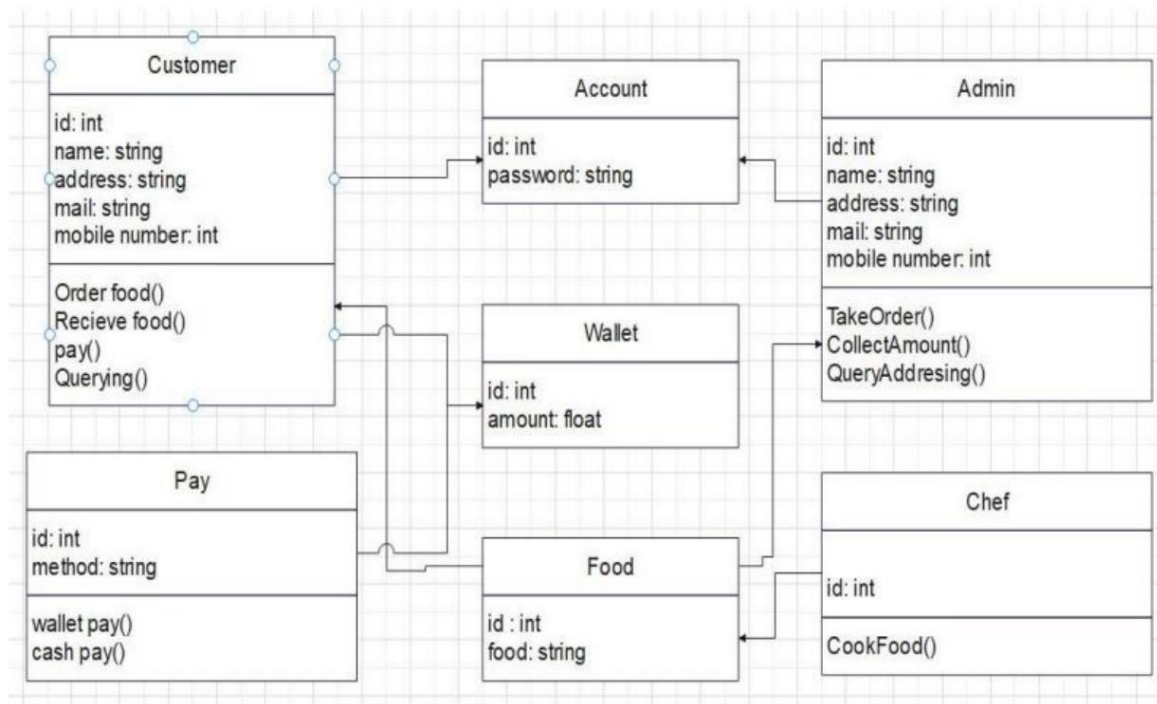
To address the existing problems in the online food ordering system, several proposed solutions can improve the overall experience for both customers and restaurants. Here are some potential solutions that we have tried to incorporate:

- a) **Robust Technical Infrastructure:** Invest in a reliable and scalable technical infrastructure to ensure the platform's stability and performance. Regularly conduct testing and maintenance to identify and resolve any technical glitches promptly.
- b) **Streamlined Order Management:** Implement an efficient order management system that minimizes errors and miscommunication. Clear communication channels between customers and restaurants can help ensure accurate order placement.

- c) **Accurate Menu Information:** Regularly update the menu to ensure that the displayed information matches the actual offerings at the restaurant, avoiding confusion and disappointment.
- d) **Improved Customer Support:** Enhance customer support services to address queries, complaints, and support requests promptly and effectively. Implement chatbots or live chat features for quick assistance.
- e) **Data Privacy and Security Measures:** Strengthen data privacy and security measures to protect customer information and payment details from potential breaches or cyber-attacks.

3. THEORETICAL ANALYSIS

3.1 UML class diagram



3.2 Hardware/software requirements

Hardware Requirements:

1. **Server:** A dedicated server or cloud infrastructure to host the system and store the database securely. The server should have sufficient processing power, memory, and storage capacity to handle the expected user load and data volume.

2. **Client Devices:** The client devices can include desktop computers, laptops, tablets, or smart phones, depending on the user roles and their requirements. These devices should meet the minimum system requirements for the chosen software components.
3. **Networking Equipment:** Network infrastructure, including routers, switches, and cabling, to ensure reliable and secure connectivity between the server and client devices within the hospital premises.

Software Requirements:

1. **Operating System:** The choice of the operating system will depend on the specific software components used. Common choices include Windows Server, Linux distributions (such as Ubuntu or CentOS), or cloud-based platforms like Amazon Web Services (AWS) or Microsoft Azure.
2. **Database Management System:** A database management system (DBMS) is required to store and manage the hospital's data. Popular options include MySQL.
3. **Web Server:** Web server software, such as Apache HTTP Server or Microsoft IIS, may be needed to host the web-based components of the system.
4. **Programming Languages:** The choice of programming languages will depend on the technologies used to develop the system. Common languages for web-based applications include Java.
5. **Frameworks and Libraries:** Depending on the development approach, frameworks, and libraries such as spring-boot are used.

4. EXPERIMENTAL INVESTIGATIONS

1. **Functional Requirements Analysis:**
 - Analysing and understanding the specific functionalities required in the system, such as order generation , user registration and authentication, menu browsing and search online payments.
 - Investigating the workflow and user interactions necessary for each functionality to ensure they are properly implemented.
2. **Performance and Optimization Analysis:**
 - Conducting performance analysis to identify potential bottlenecks and areas for optimization, such as analysing response times for different operations and identifying resource-intensive tasks.
 - Optimising code, database queries, and system configuration to improve overall performance and enhance the system's scalability.

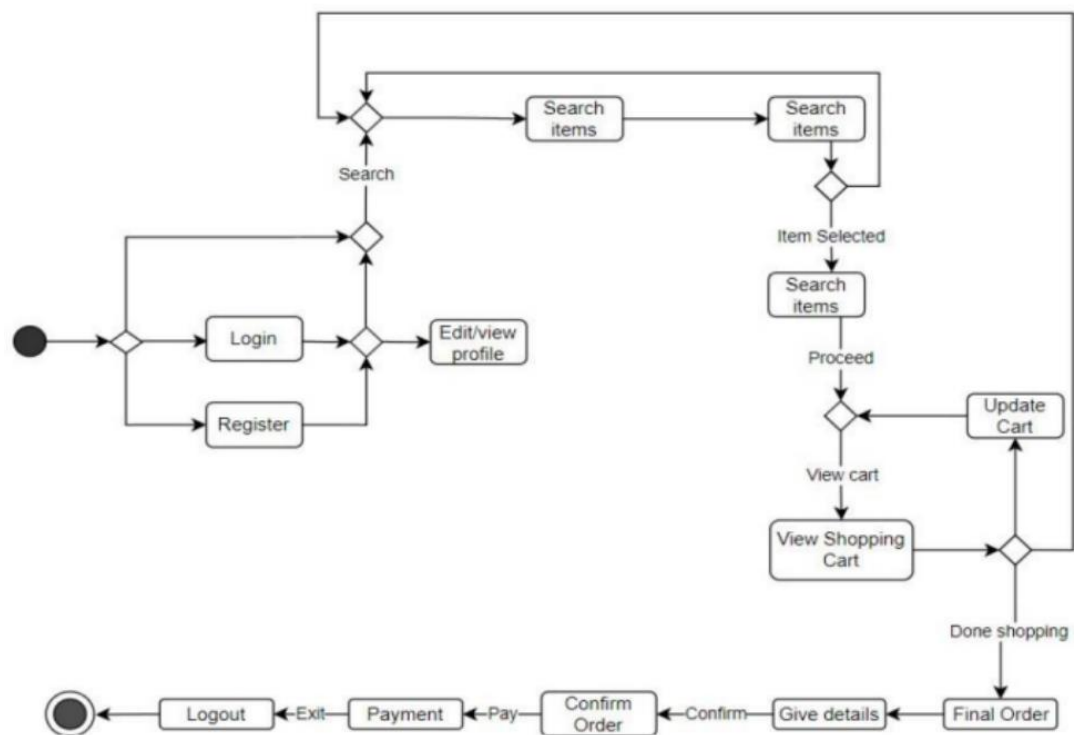
3. Security Analysis:

- Conducting a thorough security analysis to identify vulnerabilities and risks in the system.
- Implementing appropriate security measures, such as secure data storage, authentication mechanisms, access control, and protection against common security threats like SQL injection and cross-site scripting.

4. User Acceptance Testing and Usability Analysis:

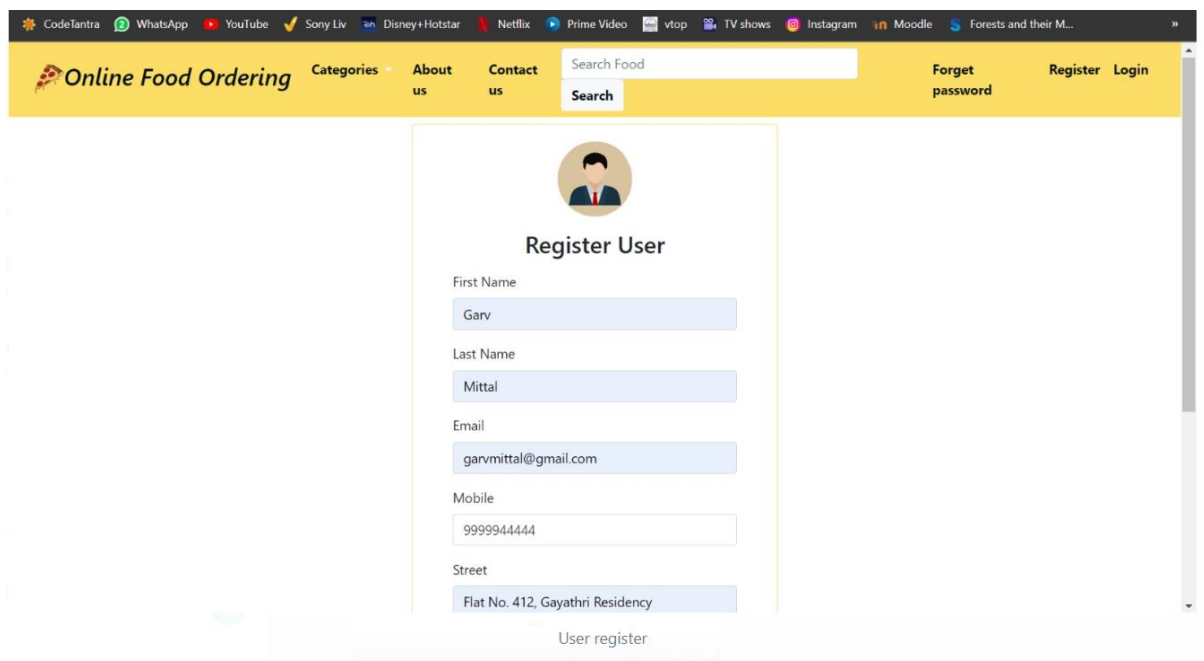
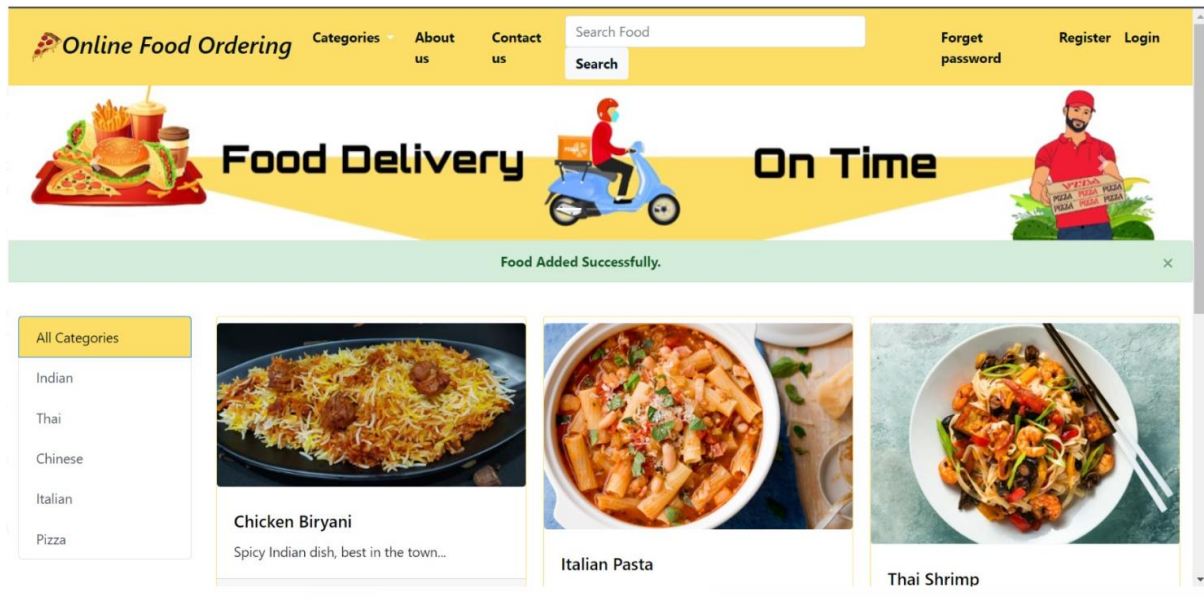
- Involving end-users and stakeholders in user acceptance testing to gather feedback on the system's usability and user experience.
- Analyzing the user interface design, navigation flow, and overall usability of the system to ensure it meets the needs and expectations of its users.

5. FLOWCHART



6. RESULT

So, here is the final website that we have implemented. We have the front-end screenshots and we have the snippets from MySQL workbench. Also, we have the code snippets below that shows the few code and all the rest we have uploaded in our github repository.




localhost:8080/userregister

CodeTantro WhatsApp YouTube Sony Liv Disney+ Hotstar Netflix Prime Video vtop TV shows Instagram Moodle Forests and their M...

Online Food Ordering Categories About us Contact us Search Food Search Forget password Register Login

Garv Successfully Registered!



User Login

User name

Password


Must be 8-20 characters long.

Login

localhost:8080/adminregister

CodeTantro WhatsApp YouTube Sony Liv Disney+ Hotstar Netflix Prime Video vtop TV shows Instagram Moodle Forests and their M...

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Register Admin

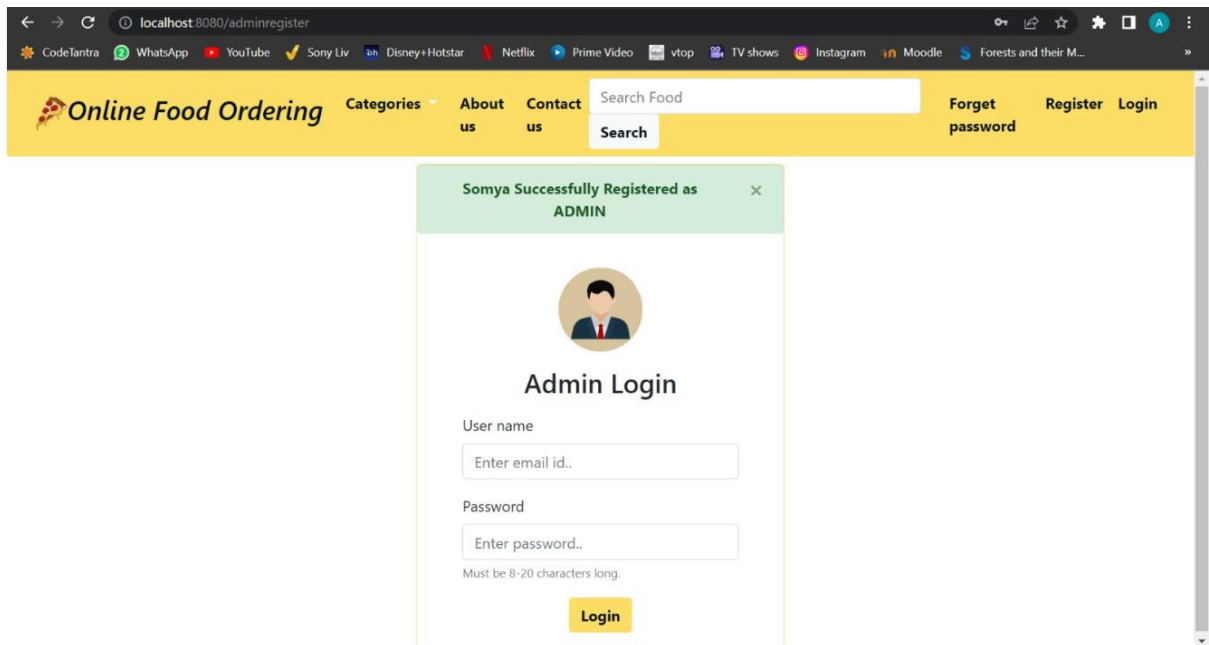
First Name

Last Name

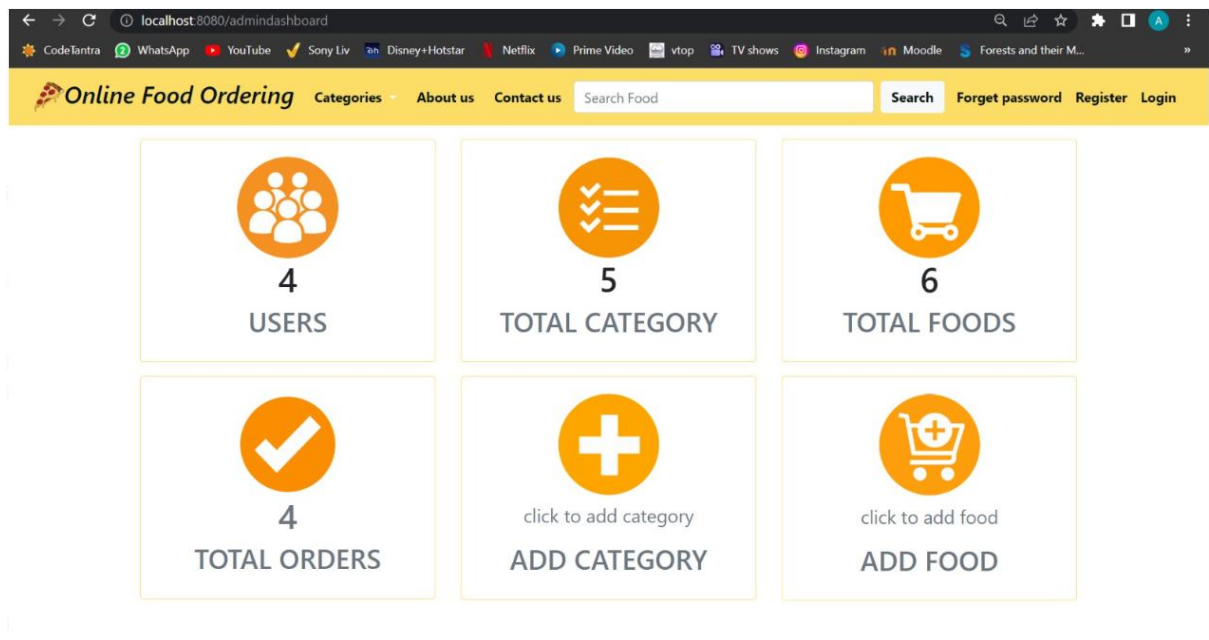
Email

Mobile

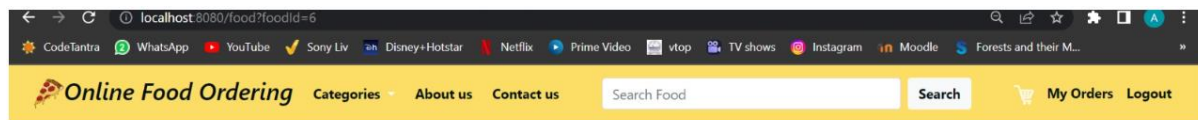
Admin register



Admin dashboard



Add to cart and cart view



All Categories

Indian

Thai

Chinese

Italian

Pizza



Noodles



Description :

Indulge in the exquisite flavors and textures of our authentic Chinese noodles. Handcrafted with care and using the finest ingredients, our noodles are the epitome of culinary excellence

Price : ₹159.2/- ~~₹199.0~~ 20.0% off

Add To Cart

MY CART

Food Image	Food Title	Food Description	Quantity	Price	Date	Action
	Chicken Biryani	Spicy Indian dish, best in the town	2	198.0	2023-07-03	<button>Remove</button>
	Noodles	Indulge in the exquisite flavors and textures of our authentic Chinese noodles. Handcrafted with care and using the finest ingredients, our noodles are the epitome of culinary excellence	2	159.2	2023-07-03	<button>Remove</button>

Total Price : ₹714.4/-

Checkout Close

Online Food Ordering

Categories

About us

Contact us

Search Food

Search

My Orders



Logout

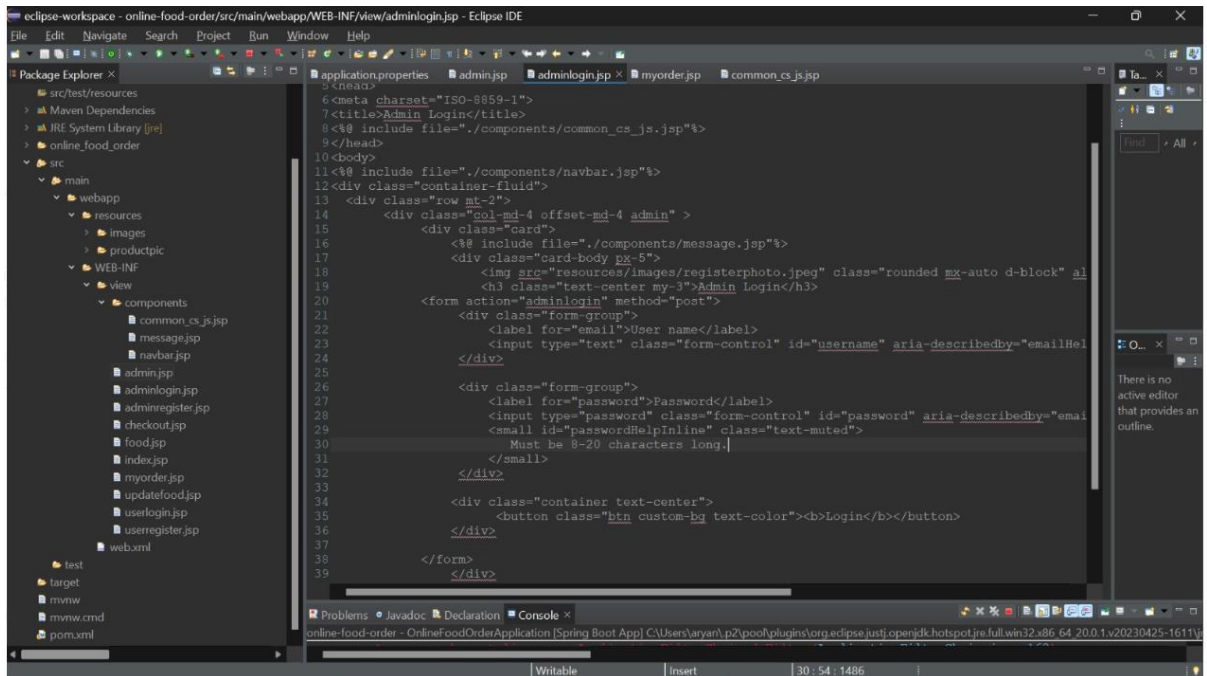
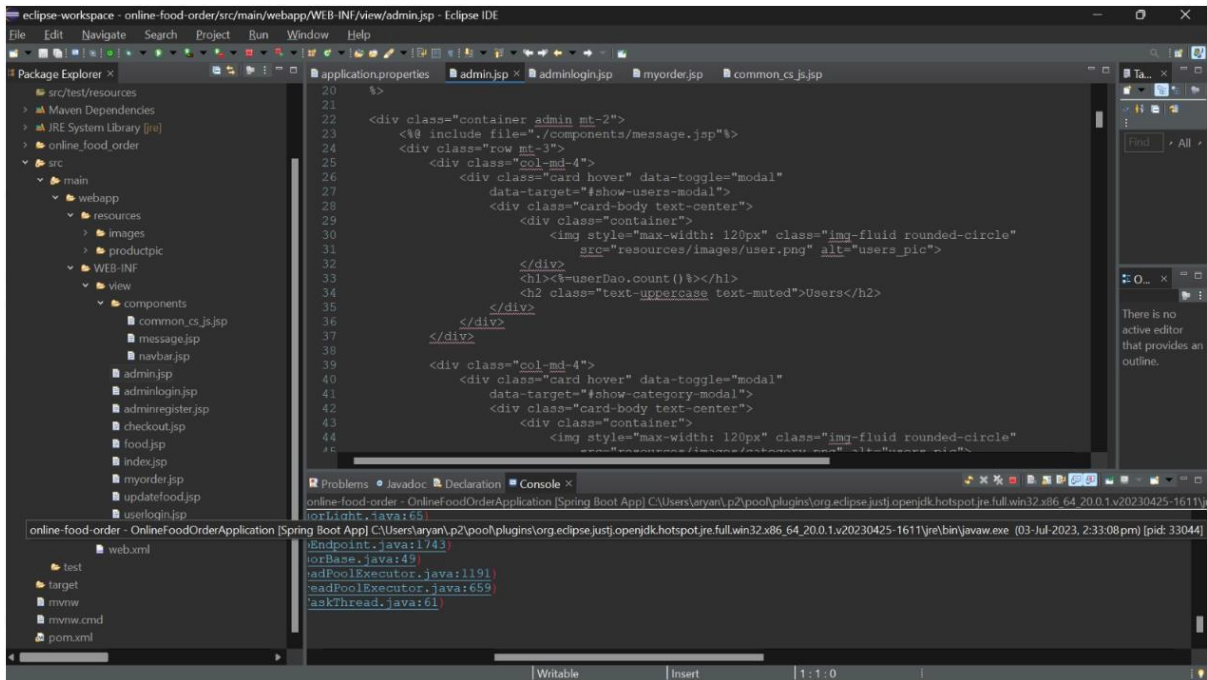
Search By Order Id

Enter Order Id..

Search

Get Todays Order

Order Id	User Id	User Name	User Email	User Phone	Food Image	Food Title	Qty	Price	Ord. date	Delivery date	Delivery Status
ZVLJ8qlk7y	1	Aryan	aryan.sharma2020a@vitstudent.ac.in	7013275106		Italian Pasta	1	225.0	2023-07-03	Pending	Pending
ZVLJ8qlk7y	1	Aryan	aryan.sharma2020a@vitstudent.ac.in	7013275106		Chicken Biryani	2	396.0	2023-07-03	Pending	Pending



- d) **Real-time Menu Updates:** Restaurants can update their menus in real-time, ensuring that customers always have access to the most current offerings and prices.
- e) **Improved Order Accuracy:** By eliminating the need for phone calls and reducing the chance of miscommunication, online ordering systems help improve order accuracy and reduce errors.

Disadvantages of the Proposed Solution:

- a) **Technical Issues:** Online food ordering platforms may encounter technical glitches, server outages, or slow loading times, leading to a frustrating user experience and potential loss of business.
- b) **Dependency on Internet Connectivity:** Customers and restaurants both require stable internet connectivity to access and use the online ordering system, which can be a limitation in areas with poor internet infrastructure.
- c) **Hidden Costs:** Some online platforms may charge restaurants high commission fees or impose hidden costs, affecting the restaurant's profit margins.
- d) **Data Privacy Concerns:** Customers may be wary of sharing personal information and payment details on online platforms due to data privacy and security concerns.
- e) **Lack of Human Interaction:** Ordering food online removes the personal touch of interacting with restaurant staff, which some customers may prefer.

8. APPLICATIONS:

Online food ordering systems have numerous applications across the food industry, benefiting various stakeholders and enhancing the overall dining experience. Some of the key applications include:

- a) **Customer Convenience:** Online food ordering systems offer customers the convenience of browsing menus, placing orders, and making payments from the comfort of their homes or on the go using their smartphones, tablets, or computers.
- b) **Restaurant Management:** These systems streamline restaurant operations by efficiently managing incoming orders, reducing the chances of order errors, and providing a centralized platform for order processing.
- c) **Order Customization:** Customers can easily customize their orders, such as selecting toppings, specifying dietary preferences, and requesting special instructions, providing a more personalized dining experience.
- d) **Real-time Menu Updates:** Restaurants can update their menus in real-time, enabling customers to view the latest offerings, prices, and availability, ensuring a consistent and up-to-date ordering experience.
- e) **Contactless Delivery:** Online food ordering systems facilitate contactless delivery options, which have become crucial during times of health concerns or when customers prefer minimal physical interactions.

9. CONCLUSION:

In conclusion, the online food ordering system has revolutionized the food industry, providing a host of benefits to customers, restaurants, and delivery services. The convenience and accessibility it offers have transformed the way people order food, making it easier and faster to access a wide range of cuisines from the comfort of their homes or on the go.

Customers benefit from the ability to browse menus, customize orders, and track deliveries in real-time, enhancing their overall dining experience. The online platform allows restaurants to reach a broader customer base, increasing their revenue potential and streamlining the order management process. Delivery services also benefit from the increased demand for their services, contributing to a growing sector in the food industry.

10. FUTURE SCOPE:

The future scope of online food ordering systems is promising, as technology continues to advance and consumer preferences evolve. Here are some key areas where the online food ordering system is expected to expand and improve:

- a) **AI and Personalization:** Integration of Artificial Intelligence (AI) and machine learning algorithms will enable more personalized recommendations for customers based on their past orders, preferences, and behavior. This will enhance user experience and increase customer loyalty.
- b) **Voice-Based Ordering:** With the growing popularity of voice assistants like Amazon Alexa and Google Assistant, voice-based ordering systems are likely to become more prevalent. Customers will be able to place orders using voice commands, making the process even more convenient.
- c) **Integration with Smart Devices:** Online food ordering platforms may integrate with smart home devices, such as smart refrigerators or ovens, to provide a seamless ordering experience. Customers could easily reorder groceries or prepared meals through these devices.
- d) **Augmented Reality (AR) Menus:** AR technology can be utilized to enhance the visual representation of restaurant menus. Customers can see 3D images of dishes and view additional information, making the ordering process more engaging and interactive.
- e) **Drone and Autonomous Vehicle Delivery:** As drone and autonomous vehicle technology advances, they may be used for faster and more efficient food deliveries, reducing delivery times and costs.

11. BIBLIOGRAPHY

1. **Spring Boot Reference Guide:** Official documentation for Spring Boot, which provides in-depth information about various aspects of developing applications with Spring Boot. You can find it at: <https://docs.spring.io/spring-boot/docs/current/reference/>
2. **Spring Framework Reference Documentation:** Comprehensive documentation for the Spring Framework, of which Spring Boot is a part. It covers a wide range of topics related to

building Java applications with Spring. You can access it at:

<https://docs.spring.io/spring/docs/current/spring-framework-reference/index.html>.

3. Websites used for references are www.geeksforgeeks.com, www.w3schools.com and www.javatpoint.com.
4. Stack Overflow: An online community of developers where you can find a wealth of questions and answers related to Java, Spring Boot, and various programming topics. It can be a valuable resource for troubleshooting and finding solutions to specific problems.
5. References :
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 - Gupta, S. (2022). Microservices with Spring Boot and Spring Cloud. Packt Publishing.
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12. APPENDIX:(github link)

https://github.com/somyarathi/online_food_ordering_springboot.git

<https://github.com/14aryan/JavaSpringBoot---Online-food-Ordering-System.git>

<https://github.com/aryan-sharma30/Javaspringboot-assignments-and-food-delivery-system>

<https://github.com/Akshat2812Sharma/Java-SpringBoot-Food-Delivery-System.git>