Peng Haoyu

AUTOMATED MEALS ORDERING SYSTEM

This study focuses on designing and implementing an online ordering system in the catering industry to achieve business information management and personnel management. Additionally, it explores the impact of automated processing on industry development

INTRODUCTION

The catering industry is rapidly evolving to meet the demands of modern consumers. With a growing emphasis on convenience and quality, online food delivery services have become essential. This study focuses on implementing an online ordering system tailored for the catering industry, aiming to enhance customer experience and operational efficiency. Through this endeavor, we aim to understand the transformative impact of automation on industry development and competitiveness.

I. AIM AND OBJECTIVES

This study aims to comprehensively examine the catering industry by analyzing challenges faced by traditional catering methods in meeting customer demands, investigating the impact of online food delivery services on addressing time constraints for busy individuals, evaluating the importance of adopting online sales systems to enhance operational processes and customer experiences, designing and implementing an advanced online ordering system with features for efficient business management and automation. Finally, assessing the system's impact on operational efficiency, customer satisfaction, and competitiveness in the catering industry landscape.

- Shopping Cart: Customers can view all ordered items in the cart, ensuring accuracy before checkout.
- Order Records: Completed orders are securely stored for easy reference and tracking.
- Payment Gateway: Our system supports multiple methods for secure transactions.
- Order Tracking: Provide real-time updates on order status.
- Customer Support: Provide easy access to assistance channels.

The functional flow and interactions of these services within the system is depicted in the following Sequence diagram (Figure 1).

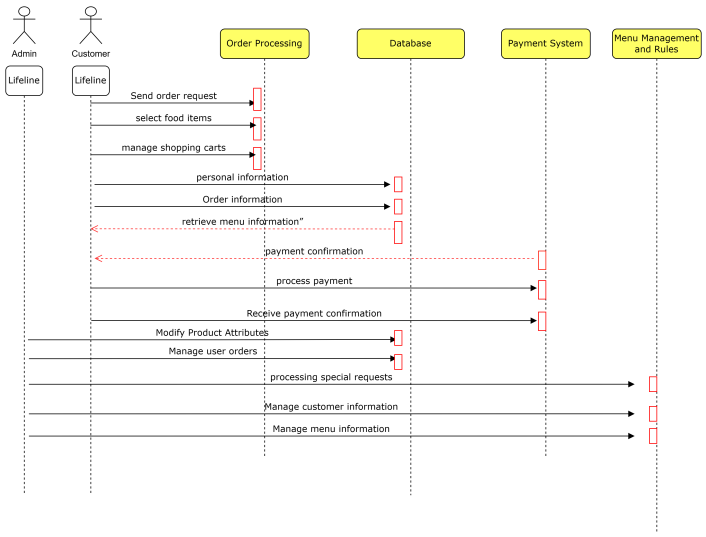

Рис. 1 – Sequence diagram

II. ADVANTAGES

The online ordering system simplifies the entire ordering process and provides customers with a convenient and comfortable ordering experience. Customers can easily browse, select and purchase items. This streamlined approach increases efficiency, reduces manual errors, and ensures a seamless shopping experience, ultimately leading to higher customer satisfaction and loyalty.

Additionally, the system brings numerous benefits to businesses, including increased efficiency and cost savings. With automated order processing and management capabilities, businesses can streamline operations and save time and resources. Additionally, the system's scalability allows it to meet the needs of businesses of all sizes, from small cafes to large restaurant chains, providing businesses with flexibility and adaptability. By providing an efficient and user-friendly online ordering platform, businesses can gain a competitive advantage in the market, attract more customers, and stay ahead of the curve.

III. IMPLEMENTATION

During implementation, we rely on foundational software and hardware infrastructure. Java serves as our primary programming language, alongside MySQL and Redis for efficient data storage. Our development environment, powered by IntelliJ IDEA, ensures seamless project management. For hardware, we prioritize stability and efficiency. We use processors with a clock speed

exceeding 1.5 GHz and prioritize network speed for swift response handling. With a minimum of 4 GB of RAM and 50 GB of storage capacity, our system effectively manages multitasking and data storage. To ensure scalability and security, we adopt an interface-based MVC architecture and role-based access control mechanisms for effective system management and maintenance.

During the implementation process, proficiency in Java programming, HTML design, and SQL syntax is essential. Clear and logical relationship designs between objects are prioritized, while ensuring the privacy and protection of client information remains a key focus.

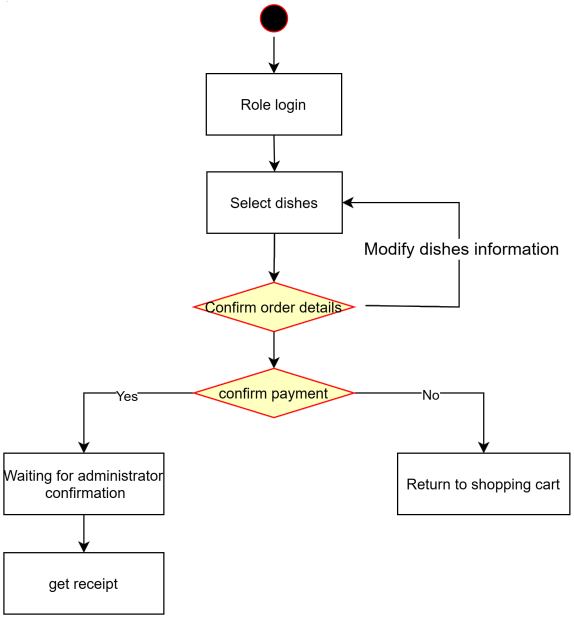

Рис. 2 – User Activity Diagram

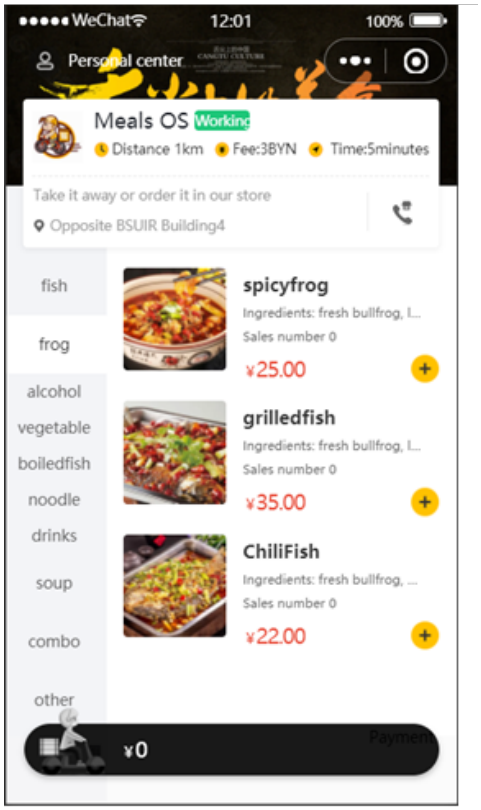

Рис. 3 – User mobile terminal

- Operating System: Windows10/11, Android.
- Programming Platform: IntelliJ IDEA 2022, Visual Studio Code, WeChat Developer Tools.
- Project Type: Java.
- Database: MySQL, Redis.
- Presentation Layer: HTML, CSS.

Peng Haoyu, undergraduate student in the Faculty of Information Technology and Control of BSUIR, 1429603597@qq.com

Scientifc supervisor: Trofimovich Alexey, Senior Lecturer in the Faculty of Information Technology and Management of BSUIR, trofimaf@bsuir.by.