

DESIGN AND IMPLEMENTATION OF INTELLIGENT ORDERING SYSTEM BASED ON WECHAT MINI PROGRAM

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Abstract: With the continuous improvement of people's living standards, the development of mobile Internet, the popularity of smart phones and the convenience of Internet payment, people's demand for food ordering methods has also changed. In order to solve the problem of offline and online connection of restaurants and help catering enterprises save a lot of manpower expenses, an intelligent ordering WeChat applet was designed and developed. By analyzing customers' ordering history and preferences, WeChat ordering applet can recommend corresponding dishes according to customers' tastes and preferences, and improve the user experience. Users can browse and order dishes through the small program, which is practical and has a wide application prospect.

Keywords: WeChat mini program; Ordering system; WeChat developer tools.

1. INTRODUCTION

The rapid development of The Times, promote the continuous progress of "mobile Internet", so it has brought a huge change in lifestyle and consumption concept. WeChat has become one of the essential applications on people's mobile phones. Compared with the app that needs to be downloaded and installed, WeChat applet occupies less mobile phone resources, so it is more favored by people. So far, most of the restaurants use the mini program function of WeChat scanning code ordering to improve the efficiency of the restaurant's ordering, reduce the waiting time spent on traditional ordering, and avoid the waste of customer time, reflecting the concept of "order in the store"[1].

For users, there is no need to worry about whether too many applications are installed. As a function of WeChat, WeChat mini program can be used without downloading and installing. Compared with the opposite app, it is less difficult to use WeChat mini programs. Users can complete the whole process of ordering and paying directly on WeChat by simply browsing the dishes on their phones.

For businesses, there are many kinds of dishes. Confirming the order of goods is crucial for businesses. After receiving the order, businesses can prepare sufficient materials according to the customer's order to avoid waste. In addition, it is very difficult to develop an independent app, and it consumes more manpower and costs. The use of small programs can save time and effort for businesses, and businesses can use more resources to invest in other aspects[2-3]. At the same time, the use of WeChat applet businesses do not need to worry about the security of the system, the small program can be released after the review of WeChat, ensuring the security, stability and confidentiality of the small program, WeChat applet has a variety of functions, suitable for a variety of scenarios, compared with html more flexible and powerful[4]. Figure 1 shows the statistics of the number of daily active users of WeChat mini program in China from 2018 to 2022.

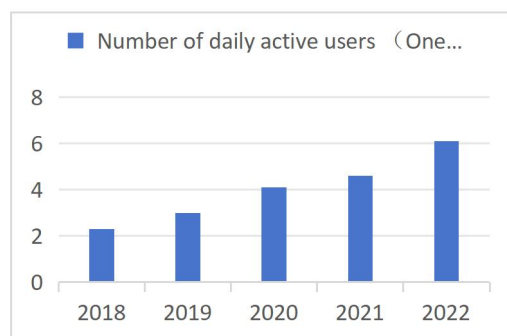


Figure 1 Statistics on the number of daily active users of WeChat mini programs in China from 2018 to 2022

2. SYSTEM ANALYSIS AND PROGRAM DESIGN

2.1 This paper introduces the model design of WeChat mini program

WeChat applet is a mobile application development framework based on front-end technology, using HTML, CSS and JavaScript to achieve. WeChat ordering applets also need to interact with the back-end server, so it includes the development of the back-end, such as data storage, authentication, API interface, etc[5]. In the design of WeChat ordering applet, consider the storage and management of menu, order, user information and other data, developers also need to design and implement database connection, such as MySQL, MongoDB, etc. Figure 2 shows the model design of the WeChat mini program.

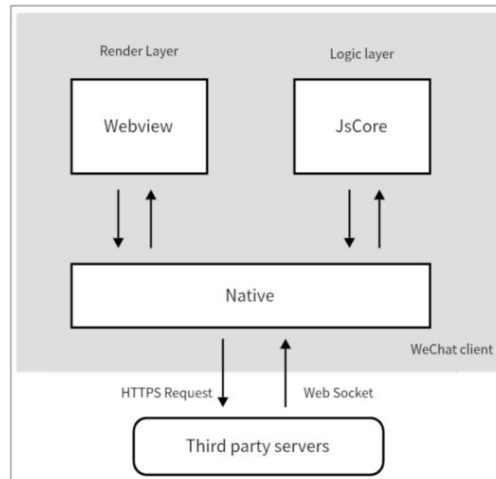


Figure 2 The Communication Model of WeChat Mini Programs

2.2 Function design

The function design of this system is mainly divided into three modules, which are store display module, ordering module and user module[6]. Figure 3 shows the system module diagram.

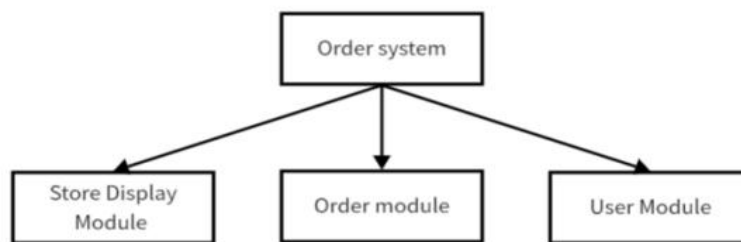


Figure 3 System module

- 1). Store display module: When customers enter the home page to browse, the top of the page shows the hot dishes in the store to attract customers to choose.
- 2). Ordering module: The shopping cart module is mainly to display all dishes, as well as the operation of adding or subtracting a shopping cart for a single product, and settle after the selection is completed. The main difficulty of the shopping cart module is the realization of left-right linkage and the layout design of page style.
- 3). User module: The user module is mainly used to show the operation of some basic information of the user, display my order situation, and solve the problem of online customer service, the user's feedback and suggestion for the meal.

2.3 System Implementation

2.3.1 Home Page

The top of the page is a group of carousel charts, showing the main products of the store so that users can intuitively understand the characteristics of the store. The bottom of the carousel chart is a "Go to order" button, click the button to jump to the ordering page, and put the button in the middle of the page to facilitate user click operation.



Figure 4 Store display module

2.3.2 Ordering page design

The ordering page displays the information of all products in detail, each product has an independent label, and there is a radio box on the left of each label, so you can check the desired product and confirm it. The middle of the label shows the price of the product. The three buttons on the right are used to determine the quantity of the product, and the initial value of the quantity is zero. If the change value is too large, you can click the number to directly define the number of goods, reduce the number of user clicks, and facilitate the user to achieve confirmation.

In the middle, the number of products selected by the user is displayed and the total price is calculated. After the user confirms that there is no error, click the right to place the order immediately, and the page will jump to prompt the user to place the order. Please wait patiently.



Figure 5 Order page



Figure 6 Order success page

2.3.3 User page design

The popup window at the bottom of the user page is used to obtain the user's basic personal information. After selecting the personal profile picture and nickname, click login. After login, the user's avatar and nickname will be displayed. You can click the "My Order" button to view the order details and show whether the order was successful. If there is a problem with ordering food or there are questions about the WeChat mini program, you can solve it through online customer service. After the meal is completed, you can click the feedback suggestion button and jump to the page to put forward your own opinions. After finishing the meal, the user can click to log out and end the application of the ordering program.



Figure 7 User module (not logged in)



Figure 8 User module (logged in)

3. SUMMARY

This system is based on the native framework development, learning and using HTML, CSS, JavaScript programming language, to make the development more perfect. This paper mainly implements the following work:

(1) Conduct research and investigation on traditional ordering methods, compare the differences and feasibility between the research direction and traditional ordering methods, discuss the direction and focus of later research, and the technical difficulties that need to be faced, learn relevant knowledge of WeChat small program development, and lay a foundation for later design.

(2) Functional verification, the focus of the experiment is to verify whether each function is running normally. According to the design requirements, test the display of dishes, the ordering process and the management of the shopping cart to ensure that users can smoothly browse the menu, add dishes to the shopping cart, complete the order and pay. When designing the shopping cart function, a shopping cart button is added to each menu item, and the function of editing the shopping cart is provided on the shopping cart page to facilitate users to manage the selected dishes.

(3) During the experiment, we encountered the problem that the data of the parameter object passed in the url of the WeChat small program was too long. Our team first used the `JSON.stringify()` function to convert, and then accepted the page conversion through the `JSON.parse()` function, and found that the error still occurred, and the team further discussed and learned. Using `encodeURIComponent(obj)` to jump to the url and `decodeURIComponent(options.obj)` page to accept the parameters of the page conversion method to solve the page parameter passing.

The intelligent ordering system of WeChat mini program provides a convenient and quick ordering experience. Users can order food directly on their mobile phones through WeChat mini program, eliminating the trouble of downloading

APP or waiting in line. Just open WeChat, scan or search to enter the ordering system to select dishes, place orders and pay, saving users' time and energy. The intelligent ordering system can provide users with favorite food options and improve users' ordering satisfaction. Through the intelligent ordering system, the display of dishes can be more standardized and accurate, as well as intuitive display for customers to make more informed choices. It improves the user's ordering experience and the operation efficiency of merchants, and becomes an innovative concept in the catering industry.

COMPETING INTERESTS

The authors have no relevant financial or non-financial interests to disclose.

FUNDING

This work was supported in part by Jiangsu Provincial College Student Innovation and Entrepreneurship Training Program (Grant:202311998046Y), the Sixth "333 project" of Jiangsu Province.

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