

Design and Implementation of Flexible Employment System Based on Uniapp

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ABSTRACT

To help people achieve and do flexible employment, a system has been developed to provide and publish job and job search information and supervise the entire work process. The back end of the system uses the Springboot framework, the front end uses the Vue framework, and the MySQL database to develop a flexible employment system. The front-end of the system is the client; its main functions include publishing and searching job and job searching information, generating and evaluating orders, etc. The main function of the backend is to manage the data generated by the front end, such as managing user account information, user personal information, order information, etc. Flexible employment systems can allow users to achieve flexible job positions conveniently, improve the stability of flexible employment, and reduce social unemployment rates.

KEYWORDS

Flexible Employment; Gig Economic; Part-time job; Uniapp; Springboot; Vue. js.

1. INTRODUCTION

With the advent of the post-pandemic era, people's lifestyles are also changing. The sharing economy has appeared in people's lives for years. People are gradually accepting new forms of employment, such as the gig economy and flexible employment [1]. Flexible employers refer to freelancers. Globally, 70 million workers are estimated to have registered with online labour platforms that facilitate remote forms of gig work [6]. An index measuring the utilisation of online labour platforms suggests that their use is growing at an annual rate of 26% [5]. According to data from the National Bureau of Statistics of China, as of the end of 2021, the number of flexibly employed people in China has reached 200 million [7]. Meanwhile, the data shows that the unemployment rate in China is on the rise compared to previous years. Employment difficulties have become a common social problem this year. Therefore, we propose a technically feasible proposal to promote flexible employment markets to alleviate the social employment problem. Currently, the mainstream systems on the market provide only a single type of flexible job and are mainly focused on job advertising [2-3].

To improve the limitations of the mainstream system, considering user convenience, a flexible employment system based on Uniapp has been designed to cover multiple types of jobs and the whole progress of the job. The technology is mainly based on the B/S architecture [4][8]. On this basis, MVC three-layer architecture technology [9-11] is added. Based on the current popularity of smartphones and the wide range of users, this paper designs and implements an application system with a front-end based on Uniapp and a back-end based on Springboot.

1.1. Front-End Technology Comparison

The flexible employment system designed in this paper is developed by the technology of the separation of the front-end and back-end, which significantly reduces the coupling between the target system functional modules. Choosing the proper development framework for the front end is crucial regarding the development process and progress. By comparing the currently popular front-end frameworks, the Vue.js framework has advantages such as small size, easy modification, and fast speed. Uniapp is a multi-system adaptation front-end framework developed based on Vue.js, which significantly simplifies the workload of multi-system adaptation of the target system. Therefore, Uniapp is ultimately chosen as the front-end technology for this system.

1.2. Back-End Technology Comparison

The back-end development techniques determine the speed and scalability of the system. By comparing the current popular web back-end frameworks, this system chose the Springboot framework and ultimately integrated it into IDEA.

2. ANALYSIS OF FLEXIBLE EMPLOYMENT SYSTEM BASED ON UNIAPP

The flexible employment job management system has two kinds of user identities: administrator identity and regular user identity. Each type of user can only achieve their content that meets their permissions. Most regular users use the front-end system, while most administrators use the back-end system. Administrator users are mainly responsible for managing the information of regular users, and regular users can edit self-related information.

2.1. Overall System Design

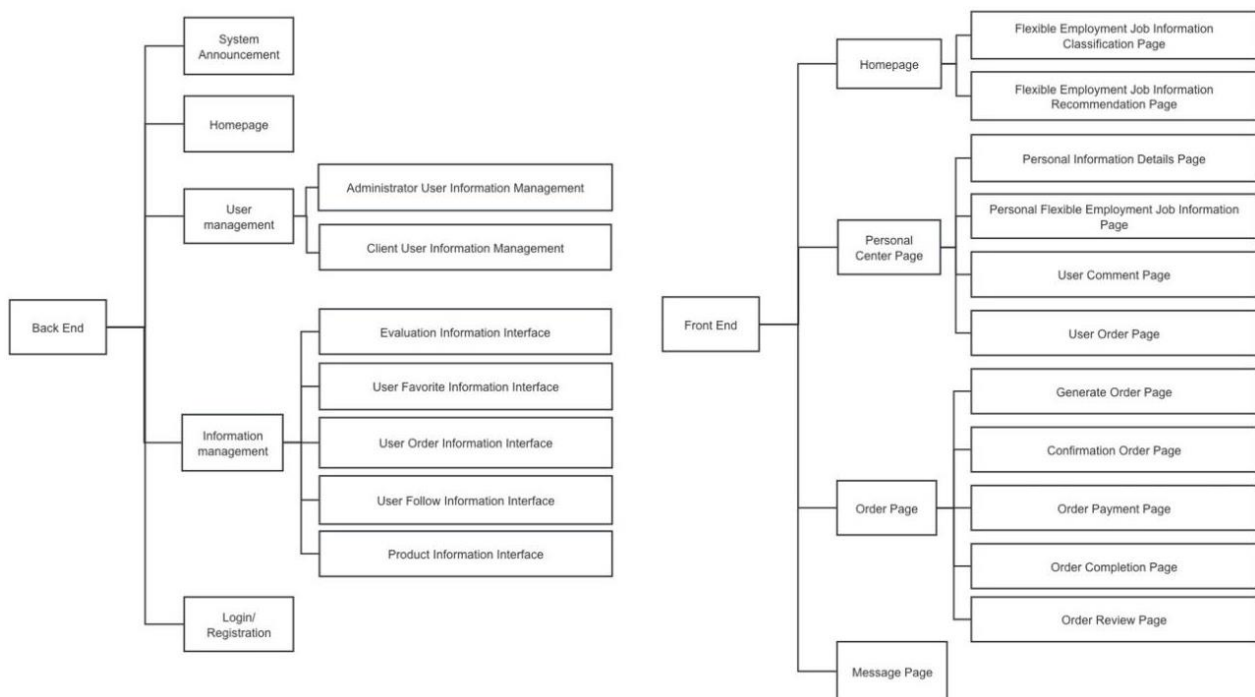


Figure 1. Overall system design.

Figure 1 shows that the system is divided into front and back ends. The front end is the client, mainly used by regular users. The back end is the management end, mainly used by administrators to manage various types of data generated by the front end. In the back end, there are primarily user account

management modules and information management modules. The front end mostly has personal information modules, flexible employment job information modules, order information modules, etc.

Main modules:

- (1) User Management Module: After successful login, the administrator enters the operation interface and is mainly responsible for adding, deleting, modifying, and searching for administrator and regular user account information.
- (2) Information Management Module: The operation interface is displayed after the administrator successfully logs in. The administrators can add, delete, modify, and search order information, user personal information, and part-time information.
- (3) Personal Information Module: After the user successfully logs in, the operation interface is displayed, which allows for the editing of personal information such as username, user profile picture, user password, address, etc.
- (4) Flexible employment job information module: Users can edit and post flexible employment job information on the interface after successfully logging in.
- (5) Order Information Module: After logging in, users can generate orders and edit order information on the relevant interface. After completing the order, they can also comment on the order and the user.

2.2. Database Design

Based on the analysis, most users in the system are administrators and regular users. Administrator: Mainly manages general user information. Meanwhile, senior administrators can manage the information of other administrators, but normal administrators cannot. Regular users: mainly responsible for personal information, such as basic personal information, order information, etc. The connections between various entities include the following: An administrator can manage multiple regular users and multiple order information. The regular users can manage multiple orders, all of which belong to one-to-many relationships. Each regular user can manage their personal information, which belongs to a one-on-one relationship.

3. SYSTEM TEST AND IMPLEMENTATION

3.1. Client (Front End) Testing

As Figure 2 shows, users need to log in first before they use the application. A corresponding prompt will appear on the interface if the user login fails.

Log in

Welcome back !

Account:

Password:

[Log In](#)

Don't have an account?
Please register

Figure 2. Login-Frontend

If the user does not have an account, they must register first and then log in. As Figure 3 shows, Currently, the system provides three types of users: student users, regular users, and enterprise users.

Student Register

Username:

Account:

Password:

School:

+Upload
Student ID

[Sign In](#)

[Go to Login](#)

User Register

Username:

Account:

Password:

[Sign In](#)

[Go to login](#)

Enterprises Register

Username:

Account:

Password:

Enterprise:

+Upload
Business
License

[Sign In](#)

[go to login](#)

Figure 3. Register

After logging in, users can see flexible employment job advertisements posted by other users on the homepage and search for flexible employment job advertisements. As Figure 4 shows, users can go to different pages through the homepage, such as the order generation page, personal information center page, etc.

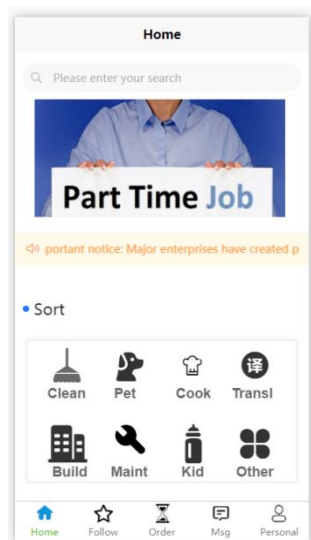


Figure 4. Homepage

As Figure 5 shows, users can generate orders, edit order information, and leave comments on orders and users on the order generation page.

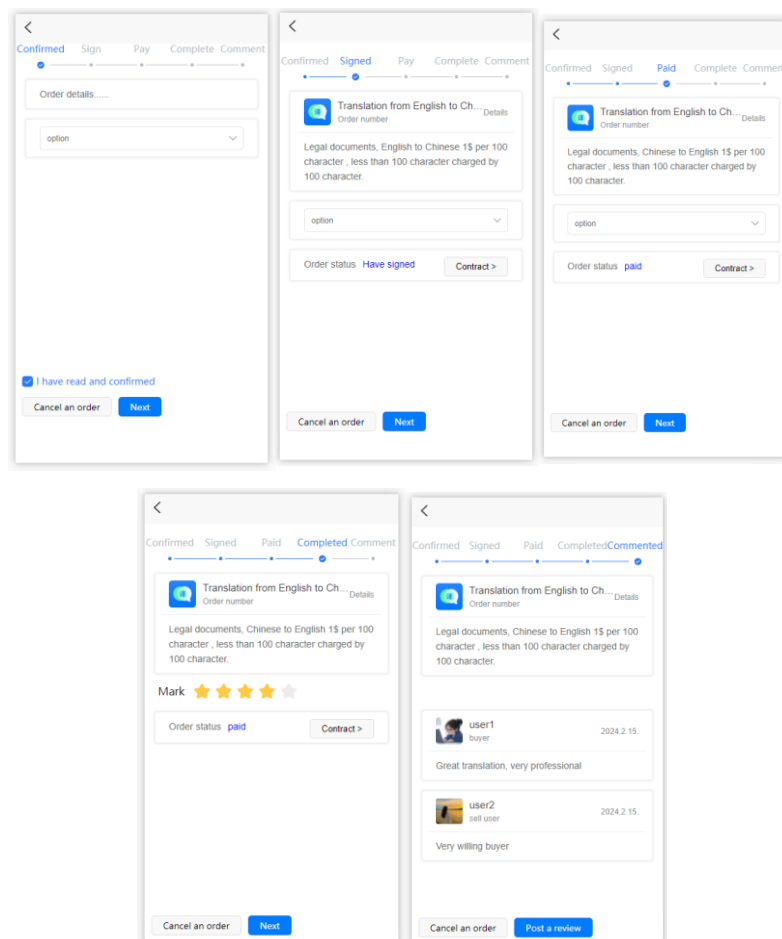


Figure 5. Order generation pages

As Figure 6 shows, users can see personal information, past orders, comments, etc, On the personal information centre page.

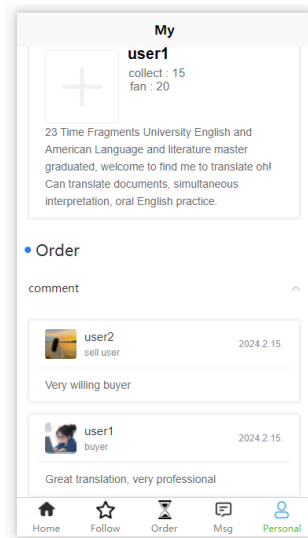


Figure 6. Personal information centre page

3.2. Management end (Backend) Testing

Administrators need to log in first, and then they can use the back end of the system. As Figure 7 shows, the first page that appears after logging in is the homepage. As Figure 8 shows, the administrators can modify all the user and administrator account information. After entering the information management module, administrators can add, delete, modify, and search for personal, order, flexible employment job, and comment information.

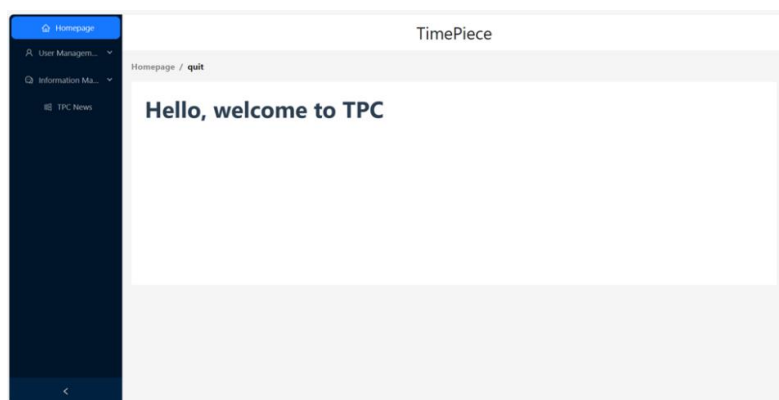


Figure 7. Homepage-Backend

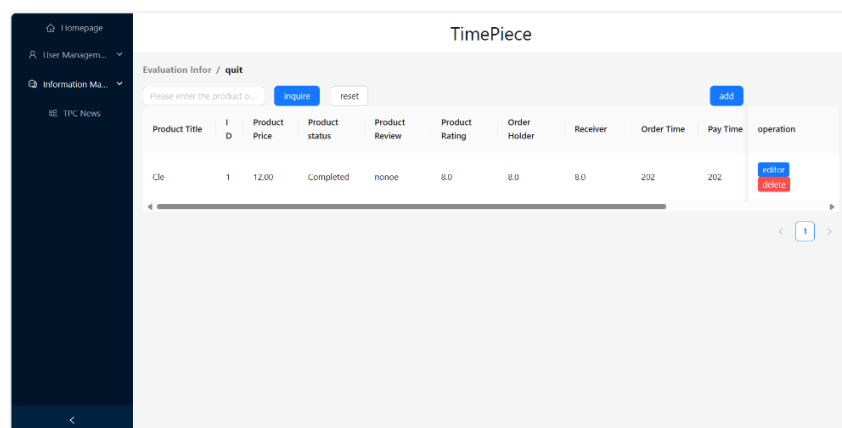


Figure 8. Order information management page

4. CONCLUSION

The system combines practical needs to analyse the new employment model under the sharing economy and high unemployment rate. The back end of the system uses the springboot framework, and the front end uses the Uniapp framework for development. MySQL is the database of the system. The system effectively alleviates the problem of unemployment, lowers the threshold, and enhances

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