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本科毕业论文（设计）

文献综述

论文题目：Design and Implementation of Employee Suggestion Management System

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ABSTRACT: This article is a literature review on the design and implementation of employee suggestion management system for WeChat applets. According to the practical needs of enterprise management, according to the existing employee suggestion management system based on WeChat applet, the employee management module, suggestion management module and background management module have been upgraded. The system uses WeChat applet and applet cloud service function, which enables employees to get started quickly and quickly. The system is based on WeChat applets. It uses the WXML (WeiXin Markup Language) tag language and WXSS (WeiXin Style Sheets) style language in the applets to design the overall structure layout of the page, uses JavaScript language to write and realize the logical processing of the pages in the applets, uses json files to configure the page information of the applets, and uses the cloud development services provided by the applets to complete file storage, Database storage and other functions.

KEYWORDS: Employee Suggestion Management System, WeChat applet, JavaScript

1 Introduction

Mobile Internet technology has completely subverted people's lifestyle. WeChat is the most widely used social tool[1] in the field of mobile applications, with a large user group。By the end of 2018, WeChat had more than 1 billion active users and maintained a steady growth trend. WeChat applet is a new software model developed on the basis of WeChat. Users do not need to download it, but only need to scan or search to open the application, so as to prevent the memory of mobile phone from being occupied by too many APP; There is no need to close the unloading[2] after use; Simplified operation steps, saved time and memory, and improved user experience . For developers, WeChat applets have the advantages of low development threshold, low difficulty and multiple functions. Linking to WeChat official account can better realize[3] the jump between applet and official account, and meet various use needs。Therefore, WeChat users and enterprises are willing to adopt the WeChat applet model。

2 Research Significance

Compared with the traditional mobile app, WeChat applet is more convenient, faster, more portable, no need to install, can be opened at will, does not occupy the memory of the mobile phone, and is more convenient to use. At the same time, the development process of WeChat is simpler and cheaper than iOS applications and Android applications.

At the same time, the marketing cost of WeChat is also very low, so enterprises of different industries and sizes will have a good market prospect in the development of WeChat ”small programs”.[4]At the same time, with the continuous development of technology, the enterprise management system is facing various challenges. In order to meet these challenges, enterprises must develop an effective management system - employee suggestion management system. In recent years, as an emerging software, WeChat applet has the characteristics[5] of convenience, security and reliability, providing more possibilities for the employee suggestion management system.This article will review the literature of WeChat applet of employee suggestion management system, show its advantages and disadvantages, and compare it with other management systems.

First of all, WeChat applet can provide more functions, such as fuzzy query, voice input, intention recognition, etc., to provide users with more convenient query and use. Where, users can enter

By entering keywords, you can quickly obtain effective information[6] about employee suggestions, thus improving user experience and efficiency. In addition, it is easier to share information using WeChat applets, which can effectively realize information sharing within enterprises.

Secondly, the WeChat widget can also be used as an event tracking system to help enterprises monitor the implementation of employee recommendations, thus improving the quality of the system. In addition, it can also help enterprises find internal problems in time, thus improving efficiency.

Finally, it is worth mentioning that the personalized functions provided by WeChat applets can improve the availability of enterprise management systems and help enterprises better benefit from customers, partners and other suppliers.

In short, the WeChat widget provides a new possibility for the employee suggestion management system, which can improve the internal communication and management of enterprises, help enterprises find problems in time and improve efficiency. However, WeChat applet also has some limitations. It needs active management and timely[7] security update, as well as effective integration with enterprise management system, to maximize its role.

In the current situation, WeChat applets can be used as a comprehensive tool to provide enterprises with more effective management methods and help improve the overall economic benefits of enterprises. Therefore, enterprises should think about how to use WeChat applet reasonably to provide better support for enterprise management system.

3 Research Status and Difficulties at Home and Abroad

In recent years, as a new light and small application, WeChat applet has attracted wide attention in the market, and its specific status has also become a hot topic. During the weak period of the App market, small applications quickly filled the gap of user demand, really connected everything, and pushed the development of light applications to a new stage. At the same time, various industrial sectors around the app have also been built in the process, supporting an ecological network comparable to the App market.

The development of WeChat applets[8] has gained a huge scale in China, and has gradually begun to enter foreign markets, which has brought many developers and businesses considerable economic benefits. What is the status quo of research and development of WeChat applets at home and abroad?

1. Domestic research and development status in China:

WeChat applets have formed an independent development platform in China, which allows developers to develop a series of meaningful applications. Since 2019, the number of WeChat applets developed and operated across the country has increased, especially in the new retail field, which has become a new business model.

2. Current situation of research and development abroad:

In foreign markets, due to the widespread use of WeChat, WeChat applets have also received a lot of attention abroad. At present, countries such as the United Kingdom, Singapore and the United States have included the development of WeChat applets, and WeChat has also announced plans to establish WeChat applets in Hong Kong. However, at present, the development of WeChat applets in foreign countries is still relatively backward, and it still needs more time to promote them in order to truly gain the acceptance of global users.

4 System Design

4.1 Overall System Architecture

According to the actual needs of managing employees, the system has set up the functions of suggestion management, employee management, suggestion approval, task view, etc. Figure 1 shows the functional structure of the system.

4.2 System Function Design

In Figure 1, the main functions of each subsystem are as follows:

(1) Background management module

It is mainly used to facilitate the administrator to effectively manage the suggestions

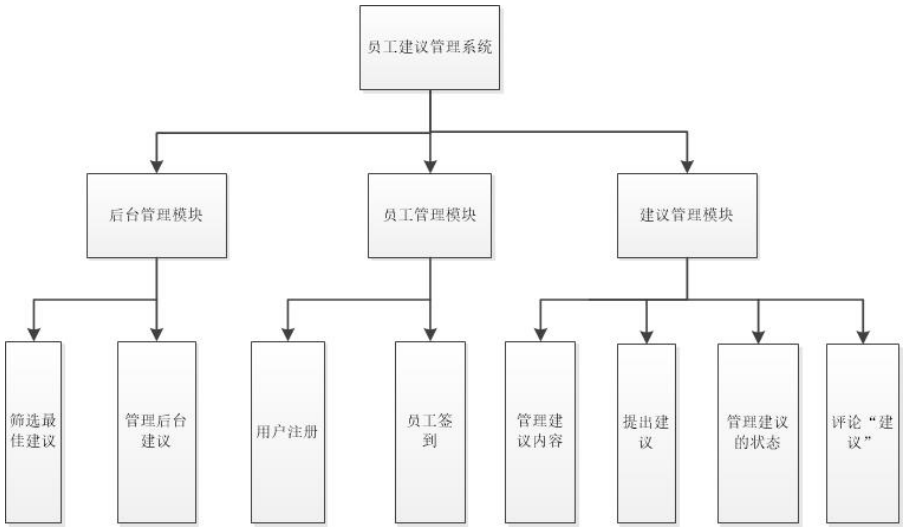

Figure 1: System Function Structure Diagram

in the background, produce the best suggestion report, notify all employees of information and other functions.

(2) Employee management module

It is mainly convenient for employees to register their accounts, realize the functions of employee sign-in and search for personnel in each department.

(3) Recommendation management module

It is mainly convenient for employees to put forward suggestions, select the person in charge of implementing the suggestions, and timely check the implementation status of the suggestions, whether they are delayed or being implemented; At the same time, it is convenient for the person in charge to comment on the proposal and upload photos to support the implementation of the proposal.

5 Research on System Implementation Technology and Methods

The implementation technology of the employee suggestion management system is diverse, so it is also a major link to select a reasonable technology to implement the system. If the selected technology is inappropriate, it will cause some trouble to the implementation of the system, and may also affect the performance of the system. It adopts the design idea of separating the front end from the back end, adopts B/S architecture, and is divided into client end and server end. The front end, that is, the client, is divided into two platforms, WeChat applet and Web client, which can run on any platform after deployment. The back-end, that is, the server side, includes the SSM framework and SQL database. After the https network request sent by the client is received by the server, the server analyzes the request and transmits the corresponding instructions to the database.

The database returns the required data to the client according to the instructions received. As shown in Figure 2. WeChat applet development and web browser both use the design concept of MVVM. The applet framework is composed of the WXML and WXSS languages defined by the applet itself, and the native interface of the WeChat applet (written in JavaScript language). The web side mainly uses Vue framework for development. The server side uses the Linux-based SpringBoot+MySQL technology stack. The following are the simple features of the framework and its role in system development.

5.1 MVVM Framework

WeChat applet development and web browser both use the design concept of MVVM. MVVM (Model View View Model) is an improved version of MVC (Model View Controller). The MVVM function diagram is shown in Figure 3. Model represents the data analysis model, in which you can define the service logic for data analysis. View represents the UI (user interface) module, which can convert the data analysis model[9] into an interface for display. The main function of ViewModel is to synchronize the process objects of View and Model. Under the MVVM framework, because the View and Model cannot communicate directly with each other, it is necessary to use the ViewModel to achieve communication. Because the communication between the Model and ViewModel and between the View and ViewModel is mutual, the instantaneous change of the View message will be reflected in the Model at the same time, and the change of the Model message will also be reflected in the View at the same time. ViewModel uses the information binding of both sides to link View and Model, and the information synchronization operation between View and Model is independent without human intervention, so developers do not need to consider the operation logic, which greatly simplifies the development process[10] and reduces the development difficulty.

In the front-end development of WeChat applet, the view layer completes the ren-

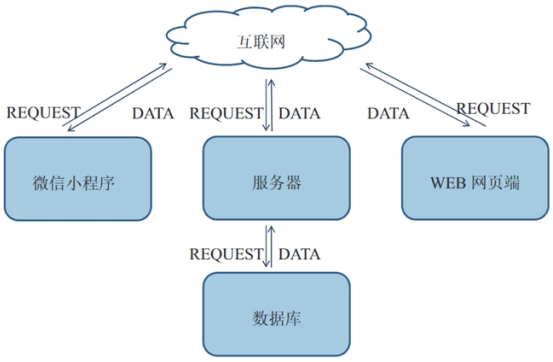

Figure2: System Architecture Diagram

dering of the web architecture, and the service layer completes the logic control, information request, interface scheduling and other work. These functions can be executed in different threads at the same time. The service layer[11] prompts the view layer for information changes. When the view layer triggers page changes, the view layer will transmit the triggered changes to the service layer for business management, while the storage layer will save the offline information of the service layer, thus speeding up[12] the processing speed.There is a Vue framework with corresponding functions on the Web side, ElementUI provides a rich UI component library, which can easily realize page display. Vue-route is Vue's state routing manager, while Vuex is a state management widely used in development, which can realize the sharing of states among various components. Axios is a lightweight HTTP library based on Promise (a special JavaScript object), which can be used to exchange request data[7] and response data, and is a key tool for interacting with the back-end.

5.2 WeChat Applet Framework

The WeChat applet framework is divided into two parts: the view layer (View) and the logical layer (App Service). The view layer is written by WXML (WeiXin Markup Language) and WXSS (WeiXin Style Sheets) languages. WXML language is mainly used to build the structure of applet interface components, and WXSS language is mainly used to define the style of interface components, which is responsible for the appearance of the applet. The logic layer, also called AppService, is written by js and is responsible for the behavior of the applet. The logic layer processes the data and sends it to the view layer, while receiving the event feedback from the view layer. The view layer displays the data of the logical layer to the interface, and sends the events of the view layer to the logical layer. Thus, the interaction between the visual layer and the logical layer is realized.

5.3 Vue Framework

The web side mainly uses Vue framework for development. Vue is a JavaScript framework for building user interfaces. It is based on standard HTML, CSS and JavaScript, and provides a declarative and componentized programming model to help developers develop user interfaces efficiently. Unlike other heavyweight frameworks, Vue adopts the design of bottom-up incremental development, providing MVVM data binding and

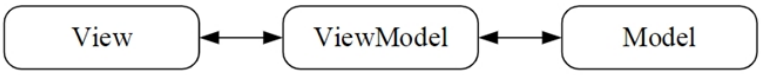

Figure 3: MVVM Function Diagram

composable component system, with simple and flexible APIs, through which responsive data binding and composable view components can be realized. Vue is one of the most widely used JavaScript frameworks in the current production environment. It can easily handle most web application scenarios, and hardly needs manual optimization. Vue is fully capable of handling large-scale applications.

5.4 SpringBoot Framework

The server side uses the SpringBoot+MySQL technology stack. In today's fast-paced and frequent IT environment, developers need various effective technical frameworks to speed up the development process and enable applications to respond to market changes faster. The Spring Boot framework is probably the most effective. It is a container-based streamlined development of the Java Spring framework, allowing developers to quickly build reliable Spring applications. SpringBoot is a new framework provided by the Pivotal team. Its design purpose is to simplify the initial construction and development process of new Spring applications.

Spring Boot can greatly simplify the development process by arranging a complete set of application components (including Web server, data source, persistence layer, message bus, etc.) into a reliable application server. Spring Boot also provides a lot of convenient features, such as automatic configuration, data source automatic configuration, integration test support, etc., which can save engineers a lot of development time and energy.

Another advantage of Spring Boot is that it can provide rich customizable components. It has a powerful component and function that allows developers to build various applications according to their own needs and requirements. In this way, developers can more flexibly apply technical solutions to different business areas. In addition, Spring Boot can support large applications, and it is based on automatic configuration, easy to run and maintain, without too many manual settings.

Spring Boot is a powerful framework that can provide great convenience for developers, speed up development progress, support flexible application requirements, and support automatic configuration of large applications, making the development process more efficient, and also help developers save a lot of time and energy, so that they can easily complete complex development tasks.

Spring framework is an open source application framework on the Java platform. To facilitate developers to call, it integrates various functions of the Spring family. For example, the Spring framework has the Inversion of Control (IOC) feature. IOC is designed to facilitate project maintenance and testing. The Spring framework[13] has the

Aspect Oriented Programming (AOP) framework, which is based on the proxy mode and can be configured at runtime; AOP framework mainly aims at modularization of cross-concerns between modules.

MySQL is a relational database management system used to store various relational data of the system. Relational databases store data in different tables instead of putting all data in a large warehouse, which increases speed and flexibility.

6 Summary and Prospect

The development of mobile devices and information technology makes the development of WeChat applets more rapid, and also brings more possibilities for the development of applets. The small flaws in WeChat applets will also be solved in the constantly updated software development technology, thus bringing a new future[14] for the reform and development of WeChat applets.

”Employee based suggestion management system” is a suggestion management system that integrates employee sign-in, suggestion release, suggestion management, suggestion comment, etc., providing users with a convenient, fast, transparent and efficient suggestion release and implementation environment. The system will effectively improve the work efficiency of employees, administrators and construction personnel, and bring huge economic benefits.

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