

Design and Implementation of Value-added Services Platform Valet Operating Subsystem

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Abstract— Customer relationship management system is a system through systemic research towards the client. In order to improve the service level for client, establish a long-term, stable relationship between enterprises and clients, and elevates the rate of client's loyalty, and so as to seek more profits for enterprises. This system is divided into information platform and management platform. This system is constituted of the module of customer manage, the module of product manage, the module of action manage, the module of sale manage, the serve of customer manage module, the module of expend manage, the module of resolution assay. This article introduces the development environment and tools of valet operating system which it needs, and import the Struts & Spring frame structure and MVC (Model-View-Controller) design patterns, After analyzing the demand in this system, business process and designing the database, Puts forward detailed design, coding and realizing ringtones order/gift, music box order/girt, personal ringtone library, number group management, ringtones group management etc. Combined with the advantage of open source framework design and MVC design idea shorten the development cycle, and ultimately complete a J2EE-based B/S information management system.

Keywords-Telecom Value-Added Service Customer Relationship Management; database; J2EE1 valet operating system.

I. INTRODUCTION

A. The research background

With the development of mobile phone music, the content of the music are enriching. Each SP need connection with the bells platform and upload bells. With the increase of the SP amount and the bells platform amount, it has brought huge workload to the operators, As in bells audit, upload and download, etc. the group bells users can't manage the SP uniformly, business and maintenance workload increase, business and maintenance workload increase. Through constructing unified music management platform, solve the maintenance of the bells audio source, publish united list and related business, Centralized

management the upload, examination and approval of the SP bells, United the bells audio source files, Perfect the bells between each platform, realization the copy and giving function.

B. Research projects in the purpose and significance

Using information technology to achieve this strain of way, at present the hottest customer relationship management will appear, the customer relationship management is to show enterprise through meaningful communication, understanding and influence the customer behavior, eventually improve the customer acquisition; customer retention, customer loyalty and customer create profit. Improve customer service, Through the analysis of customers to meet their demand and to provide customers with the greatest value of goods, make enterprise's profit maximization.

II. TECHNOLOGY INTRODUCTION

A. JAVA language introduction

Java is a simple, cross-platform, object-oriented, distributed, explicable, strong, safe, structure, neutral, portable, performance is excellent, multithreading, dynamic language.

B. SSH framework Profile

The Struts is the Apache foundation Jakarta project team Open Source project. It uses the MVC mode, can help Java developers using J2EE development Web applications. Like the other Java architecture, Struts is an object-oriented design, played very well ability in separation presentation logic and business logic of the MVC mode. The core of the Struts framework is a flexible control layer, Based on Java Servlets, JavaBeans, ResourceBundles and XML standard technology, and some class library of the Jakarta Commons. The Struts composition by a group of cooperation components, Servlet and JSP tag lib. The web applications Based on struts architecture basically accord with JSP Model2 design

standards, can say is a change type traditional MVC design model.

Spring is an open source framework, it created by Rod Johnson. Create to solve the complexity of the enterprise application development. Spring uses the basic JavaBean to complete some things which only done by the EJB before. However, the use of Spring not only limited to the server development. In the view of the simplicity, testability and loose coupling, any Java application can be benefited from Spring.

Hibernate is an open source object-relational mapping framework, it is very lightweight to JDBC object encapsulation, makes Java programmer can follow one's inclinations use object programming thinking to manipulate the database. Hibernate can use in any occasions where JDBC uses, it can use in Java client program, also can be use in Servlet/JSP Web applications. The most significant is that Hibernate can replace the CMP for use the EJB in J2EE framework, complete the persistent data.

III. SYSTEM IMPLEMENTATION

A. Technical analyses

1. java: The definition of the bean class in Data persistence layer, service business layer Logical judgment, action logic jump. Base on the MVC pattern, use the SSH (struts2 + spring + hibernate) frame technology.

- 2. ExtJS: Front desk display the data.
- 3. Oracle 10i: Database design, Check the data.

B. System function introduction

1) Landing interface

The landing interface shown in figure 1. Through the landing interface into the system, input the correct user name and password in the specified location. It can't be submitted if any input box is empty, and activated suggest, submit user name or password mistake, page message, input the correct into the system interface.



Figure1. Landing interface.

2) Bells order/ gift modules

As shown in figure 2 is the bells order/ gift module interface, User can browse all the bell detailed information in the interface. User can click the name of the first line on the list, reorganizes the list and selective view.

The user can order for the bell and gift operation:

Bells order: choose the bell, click on the **【order bells】** button , on the popup dialog box type user number, user name and order time, click the **【order】** button to complete the order.

Bells gift: choose the gift bell, click the **【gift bells】** button on the popup dialog box type user number, user name and giving number and giving time, click the **【gift】** button to finish the gift.

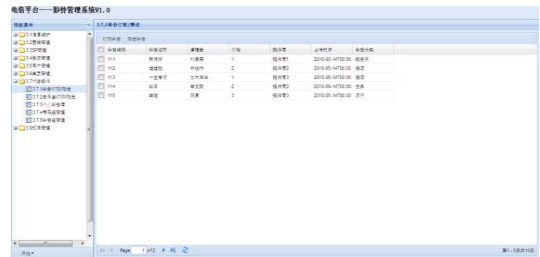


Figure2. Bells order/ gift module interface.

3) Music box order/gift

As shown in figure 3 shows is the music box order/gift module interface, user can browse all detailed information of the music box in the interface. User can click the first line name on the list, Reorganizes the list and selective view. Click the **【details】** button, can view the bells in the music box , click the **【audio-visual】** button can seeing and hearing the bells.

Users can use music box for ordering and gift operation:

Order music box: choose order music box, click the **【order music box】** button on the popup dialog box type user number, user name and order time, click the **【order】** button to complete the order.

Giving music box: choose gift music box, click the **【gift music box】** button on the popup dialog box type user number, user name and giving number and giving time, click the **【gift】** button to finish the gift.

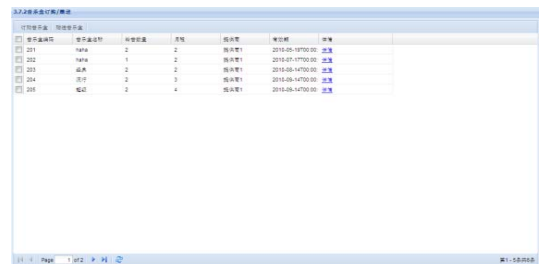


Figure3. Music box order/gift module interface.

4) Personal bells library

As shown in figure 4, is the personal bells library interface, enter your user interface number in the top right corner, click on the **【search】** button, can see someone's bells and music box of information. click the **【audio-visual】**

visual】 button can seeing and hearing the bells, click the 【details】 button see details of the music box . If you want to delete the bells or music box, select the corresponding music box or bells click the 【delete】 button can complete deleted.



Figure4. Personal bells library interface.

5) Number group management

As shown in figure 5, is the number group management interface. Click on the 【add group】 button can add a new number group, in the popup Windows input mobile phone number, number group name and bells name, and click the 【sure】 button to complete the operation. Select any number group click the 【modified】 button can be modified. Click the 【delete】 button can delete the selected number group.

Selected a number group click the 【add member】 button can add new members in the group. Click the 【delete】 button can delete the selected members.



Figure5. Number group management interface.

6) Bells group management

As shown in figure 6 shows, is the bells group management interface. Click on the 【add group】 button can add a new bells group, in pop-up window choose the user types, input Numbers and bells group name, and click the 【sure】 button to complete the operation. Select any bells group click on the 【modified】 button can be modified. Click the 【delete】 button can delete selected bells group.

Select a bells group click on the 【add bells】 button can add new bells. Click the 【delete】 button can delete selected bells.

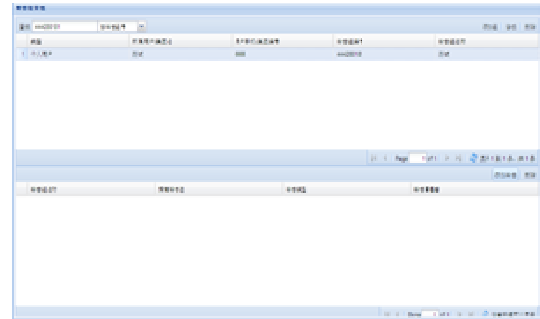


Figure6. Bells group management interface.

C. ExtJS

When loading the page, will automatically call onload event, execute Ext.onReady() in basiclayout.js. By calling the object, background data loading, demonstrate to the front page.

Note: the load () method must be written, this will submit request, get the response.

url corresponding the name attribute in package and action that in configuration files struts_config_3_7.xml . Then go to find the corresponding method findAllData().

D. Struts2 configuration

Main configuration files for struts.xml and module struts_config_3_7. XML documents, struts. XML is main entrance, struts_config_3_7.xml will put in there.

The action will be in struts_config_3_7 jump.xml Settings.Struts2 is different from struts1, it has a default return values SUCCESS, Successful jump. And can use json sent to ExtJs that data take out from background.

E. Spring configuration

Main configuration files have applicationContext.xml and corresponding modules

applicationContext_3_7.xml,etc.All java class files are created in the applicationContext.xml instance, so you can lift the coupling between classes.

1. The name attribute in action-bean and the name attribute in action in struts_config_3_7.xml must be same.
2. The ref in Label property must be same with the id attribute in bean.
3. The name attribute in the property tags must be same with example name in Java files.
4. In the class of Java member variables must have set method, the get method according to the situation and decide.

F. Hibernate

Hibernate.cfg.xml is a configuration file. Including driver-class, url ,user and password. Lead into SQL dialect, because we know that there is little different between Mysql

database and Oracle database is slightly different, so hibernate solves this problem for us, lead into dialect. here are two ways to interact in Hibernate persistence layer. One is the configuration file mapping..hbm.xml; the other is the annotation. We mainly used the annotation for this development.

IV. CONCLUSION AND OUTLOOK

A. Conclusion

Through the background, technical analysis and this code practice, we can see Use Struts2 realized the MVC design patterns system, in the construction of improving the system efficiency, expansibility and maintainability, reusability were outstanding performance.

In this paper the application in code design Struts2 such as architecture design, WebForm construction technology give full play to Struts2 technology advantage, Quickly realized the system demand, has the certain reference value.

B. For further research outlook

Due to the shortage of time, technology and resources, this system which I elaborate have some place can also improve in function and business, for example: in the three

layer structure MVC, The presentation layer can be more refined, the design of business logic can be more detailed. But for an enterprise applications, this article follow-up consider that it should be added log module and test module, solve the multithreaded problems so as to enhance the security of the system.

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