Design and Development of B/S Mode Based Student Party Member Information Management System

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Abstract

The B/S mode based student party member information management system is a typical management system, and the development of this system is primarily composed of two aspects: establishment and maintenance of foreground application and background database. This system is developed by using the ASP.NET platform, C# language, SQL Server database in the integrated environment of Microsoft.NET framework in combination with Web development technologies. When this system is completed, it can manage a full range of information of all the student party members in a standardized way. The general design provides a detailed description of the functionality of each module and the design of the database. Besides, it describes the login page, main page and the implementation processes of several functions such as data adding and query in details.

Keywords: MIS; Browser/Server; Party member management; ASP.NET

1. B/S Model is Introduced

As the Internet becomes more and more widely used, a new architecture of Browser/Server arises at the historic moment, and get a rapid development. On essence, Browser/Server is also a kind of Client/Server structure, it is a kind of from the traditional Client/Server structure and on the second floor and three-tier Client/Server structure of the special case of the application on the Web.

Under Browser/Server three layers architecture, the Presentation layer, Business Logic layer, the Data services layer was cut into three relatively independent units.

Presentation layer-a Web browser. System display logic contained in the presentation layer is located in the client. Its task is by the Web browser from a Web server on the network service request, a Web server to authenticate user's identity after using the HTTP protocol to the home page to the client, the client accept files from the home page, and display it in a Web browser.

Function layer, which has the function of expansion of the application Web server. In the function layer contain transaction logic system, located in the Web server. Its task is to accept the user's request carries on the corresponding processing, such as querying the database, and then will return to the Web server, the result of data processing by the Web server will send to the client.

Data layer, the database server. System of data processing logic contained in the data layer is located in the database server. Its task is to accept the Web server requests for database operation, implement a database query, modify and update, and other functions, the results back to the Web server.

Compared with the traditional C/S mode, B/S model with open standards, lower development and maintenance costs, simple to use, friendly page, simple client and system flexibility and other advantages.

2. The System has the Function of Specific Description

1) The students information management

Provided will be of "students' basic information table" (students) data entry, update, modify, delete, query, *etc.*, Queries can be in accordance with the class, name, nationality, *etc.* To find. Modify, delete, update operation is simple and convenient.

2) Submit application for student management

Submitted the application in our student information (shengqing) data entry, update, modify, delete, query and other operations. Queries can be looking for according to actual needs.

3) Active membership management

To our basic information "activist" initiation (jijifenzi) for data entry, update operations. Can also according to the need to query, and other functions.

4) Member management

To our "members prepare basic information table" (yubei) for data entry, update operations. Can also according to the name, class, *etc.*

5) Membership management

Can be in our membership information table (zhengshi) for data entry, query operation. Can also according to the name, class and student number.

6) Punishment member management

Can in our "disciplined members information table" (chufen) information recorded, modify, and delete operations.

7) Member management awards

Can in our "rewards membership information table" (huojiang) information recorded, modify, and delete operations.

3. The General Design of the System

The development of this system is using a Rapid Prototyping (Rapid Prototyping) or with a small amount of cost to quickly construct an executable software system model. In this way, can quickly determine the demand, and then USES the cyclic evolution way of development, to make continuous refinement of the system model, the system required properties increase gradually, until all the functions are all satisfied.

Rapid prototyping method, also known as object-oriented program design method is in recent years in view of the structure defects put forward a new way of design, is to adapt to the current progress of computer technology and the enormous growth of the software requirements. It is a fast, flexible and interactive software development methodology. Its core is to use, interactive, fast to build a prototype of replaced, stiffness in the form of big is not easy to modify the specifications of the manual.

So-called rapid prototyping is fast set up can be run on a computer program, it can complete functions are often the final system to complete a subset of the functionality. As shown in Figure 1 (FIG. Solid arrows indicate the development process, the dotted arrows indicate maintenance process), the first step in the rapid prototyping model is quickly built a prototype model can reflect the basic demand, and let it can run on the computer, through the practice to understand the general picture of the target system.
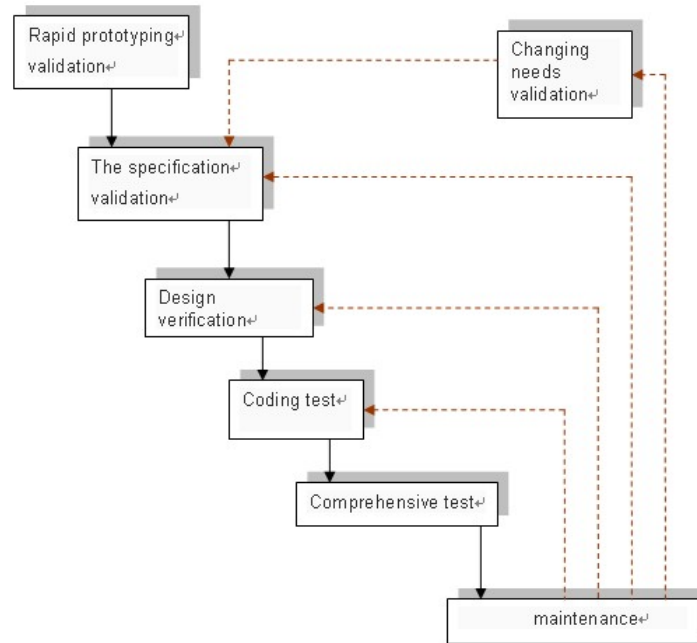
Figure 1. Rapid Prototyping Model

As can be seen from the above, the rapid prototyping model with no feedback loop, which is the main advantage of this process model, system development is basically in linear order. System is verified by interact with users, according to the verified correctly describes the user requirements, therefore, in the subsequent stages of development process won't find the mistake in the design of the document for rework.

By establishing the prototype system can learn many things, can at least know "system what to do, not what to do, and how not to do what not to do", so, the possibility of error in the design and coding phase is small, which naturally reduces the need of correction in the subsequent stage in front of the stage the possibility of mistakes.

Rapid prototyping is the essence of "fast". Prototype purpose is to learn the user's real demand. Once demand decides, the prototype will be abandoned. Therefore, the internal structure of prototype is not important, important is, must rapidly prototype components, and then based on the change of user requirements for rapid prototyping.

4. The System Database Design

4.1. ASP.NET and Database

Hasn't started yet popular in the Internet era, the layer structure of Client/Server system is the mainstream of the database application system structure in LAN environment. As the Internet penetration, database application system development and implementation of the method, great changes have taken place from the Client/Server system structure on the second floor extended to consists of a Web Browser, application Server, database Server, system of Browser/Server three layers structure. In three layer structure as shown in Figure 2 of database application system, the client does not need to install what equipment and software, only need a Web browser, is responsible for the shows the results of an application running on the server side, with the aid of a Java Applet, VBScript, JavaScript and ActiveX technology carry on some simple client transaction processing. The application Server to accept remote or local

page request, then run the script on the Server, with the aid of middle part such as CGI, ADO request to send the data to the DB Server in order to obtain related data, then convert the result data to HTML and script back to the client Web browser. Database server is responsible for managing the database, data update and complete query requirements, run the stored procedure.

Figure 2. ADO Three Layer Structure

In the early days of the file service type Web applications, the pages are static, release data is done by hand, need to pay a large amount of labor, to update the data. How to dynamically distribute data, and real-time refresh data, become the key technology of dynamic Web database application system is realized. Before the launch of the.net framework technology, many are using ADO and ASP dynamic Web application technology, through the use of these two technologies, is a good way to achieve dynamic update of the page. But with the.net framework technology, using ADO and ASP technology to realize dynamic Web applications require a large number of programming jobs, and in the. NET framework technology provides some very powerful in the form controls, can save most of the programming work.

To develop dynamic Web database application system, mainly used to. ADO.NET and ASP.NET component technology in the.net framework technology.

4.2. The Main Base Table is Introduced

This management system according to development needs only to set up a database, the database is established in the following the user table.

Table 1. Main Base Table

Students' basic information table	students
Submit application for student information form	shenqing
Active membership student information form	jijifenzi
Prepare member information table	yubei
Membership information table	zhengshi
Disciplined members information table	chufen
Rewards member information table	huojiang
The system user information table	manager

4.3. With the Database Connection is Established

This system is through the ADO.NET technology and the database connection. ADO.NET is used for dealing with a data source.net technology. It contains a lot of Data, will, used to access

the different Data sources, depending on their use of a database or agreement. However, no matter use what kinds of Data the Provider, the use of objects that interact with the Data source methods are similar. SqlConnection object is used to manage with the data source connection. The SqlCommand object can send SQL commands to the data source. SqlDataReader can quickly from the data source to obtain read-only, forward the flow of data. Using a DataSet can deal with those who have broken data (stored in memory), and through the SqlDataAdapter data source of reading and writing.

This procedure the main code to connect to the database are as follows:

```
    public class db_conn// The database connection class
{
  public static SqlConnection myconn;// Define an SQL connection object
    public SqlConnection conn()//Get the connection attributes
   {
    string conntring = "server=.;database=dangyuan;uid=sa;pwd=sa";
      myconn = new SqlConnection();
      myconn.ConnectionString = conntring;// String to connect to the database
      myconn.Open();//Open the database
      return myconn;
   }
  public static void close_conn()
  {
    try
    {
      myconn.Dispose();
      myconn.Close();//Close the database
    }
    catch
    {

    }
  }
}
```

5. The Detailed Design

5.1. The Realization of the Landing Page

Login page implementation is to use.net controls to implement, and use is a Login control in VS. Such controls can be used directly from the Web form of the kit. Login controls are.net Framework2.0 version added in control, it is mainly to provide the user Login to the website page elements. The system "Login" control code is as follows:

<asp:LoginID="Login1" runat="server" BackColor="#EFF3FB" BorderColor="#B5C7DE" BorderPadding="4"BorderStyle="Solid"BorderWidth="1px" Font-Names="Verdana"

Font-Size="0.8em"

ForeColor="#333333" Height="135px" Width="242px" // Format control

DestinationPageUrl="~/student.aspx" // Get or set the login success page URL that is shown to the user

OnAuthenticate="Login1_Authenticate">// After verify the identity of the user

<TitleTextStyle BackColor="#507CD1" Font-Bold="True" Font-Size="0.9em" ForeColor="White" />

<InstructionTextStyle Font-Italic="True" ForeColor="Black" />

<TextBoxStyle Font-Size="0.8em" />

<LoginButtonStyleBackColor="White"BorderColor="#507CD1"BorderStyle="Solid" BorderWidth="1px"

Font-Names="Verdana" Font-Size="0.8em" ForeColor="#284E98" />

</asp:Login>

5.2. On the Surface of the Home Page

The implementation for the home page and by using the female version of the design. A female version is other pages that are inherited from the mother's version of design, is to make all use of the female version of the page with a uniform page collocation (such as header, navigation, footer, *etc.*).

Master page of extension. The master (such as one. The master, of course it was also the ASP.NET file, there are also other. NET page function, just different name), it contains the predefined layout of what we want to use the file contain each, such as images, text, controls, *etc*. Master Page recognition by a special @ Master instruction, the instruction to replace the used in the ordinary. Aspx Page @ Page directive. This instruction class looks like below.

The < % @ Master Language = "c #" % >

Master page has the following advantages:

On page 1) Using a master page can focus on general function, so that can be updated in only one location.

2) Using the master page, you can easily create a set of control and code and apply the results to a set of pages. For example, can be used on the master page controls to create and apply to all pages of the menu.

3) By allowing the control way, the master page allows you to control the final on detail page layout.

4) Provide a master page object model, using the object model can be from various custom master page content page.

Create for the ContentPlaceHolder control areas of the master page shown in new pages for Content controls.

This system is a female version of the code as shown below:

```
<%@    Master    Language="C#"    AutoEventWireup="true"    CodeFile="main.master.cs"
Inherits="MasterPage" %>


<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">

<html xmlns="http://www.w3.org/1999/xhtml" >

<head runat="server">

    <title> Student member management system </title>

<style type="text/css">

<!--

.style3 {font-size: 12px; color: #666666; }

body,td,th {

        font-family: Verdana, Arial, Helvetica, sans-serif;

        font-size: 12px;

        color: #666666;

}

body {

        background-color: #FFFFFF;

}

a {

        font-family: Verdana, Arial, Helvetica, sans-serif;

        font-size: 12px;

        color: #666666;

}

a:link {

        text-decoration: none;

}

a:visited {

        text-decoration: none;

        color: #666666;

}

a:hover {
```

```
        text-decoration: underline;

        color: #666666;

   }

   a:active {

        text-decoration: none;

        color: #666666;

   }

   -->

   </style>

   </head>

   <body alink="gray">

      <form id="form1" runat="server">

   <table width="80%" height="600" border="1" align="center" cellspacing="0">

    <tr>

      <td style="width: 817px; height: 76px" colspan=2 align="center"><img src="D:\temp\images\bg-
nav-side.png" style="width: 733px; height: 97px" /></td>

    </tr>

    <tr>

      <td    height="273"    valign="top"    style="width:    17%"><table    height="277"    border="0"
cellspacing="0" style="width: 157px">

       <tr>

        <td style="width: 168px"> </td>

       </tr>

       <tr>

       </table></td>

       <td      style="width:      80%"> <asp:ContentPlaceHolder      ID="ContentPlaceHolder1"
runat="server">

          </asp:ContentPlaceHolder>

        </td>

      </tr>

   </table>

      </form>

   </body>

   </html>
```

Above is the master page. The main master's source code, with the ordinary. Aspx source code is very similar, for example, including < HTML >, < body >, < form > element of the Web, however, there is a difference with normal page. There are two main differences. Differences are a generation of terminals, using the Master Page is Master, and ordinary. Aspx

file using the Page. In addition, both in terms of generation of dock is the same. Differences in the second, the master page declares the ContentPlaceHolder control, but in general. Aspx file are not allowed to use this control. In the MasterPage, the Master in the source code and declares two ContentPlaceHolder control, used in the page template for the content of 1 and 2 placeholder content. ContentPlaceHolder control itself does not contain specific content Settings, is only a control statement.

Using Visual Studio 2005 can edit the master page, and it fully supports "wysiwyg" function. In both code mode, and design mode, using the methods of Visual Studio 2005 edit the master page, and edit general. Aspx file is the same.

5.3. The Realization of the Function of Information to Add

Through this function, the student's basic information can be input operation.

Application main code is as follows:

```
protected void Button3_Click(object sender, EventArgs e)
  {
    int sex;
    if (Sex1.Checked == true)// If Sex1 has been selected
    {
      sex = 1;
    }
    else
    {
      sex = 0;
    }
      String sqlstring = "insert into students(name,sex, age, class,no, college, guanji, minzu)
  values('" + this.Name.Text + "'," + sex + "," + Int32.Parse(this.Age.Text) + ",'" + this.ClassName.Text
+ "','" + this.No.Text + "','" + this.College.Text +"','" +this.GuanJI.Text + "','" + this.MinZu.Text + "')";//
Connect to the database executed statements, said insert
    //Response.Write(sqlstring);
    //Response.End();
    db_conn myconn = new db_conn();
    SqlCommand comm = new SqlCommand(sqlstring);
    comm.Connection = myconn.conn();//Connect to the database
    comm.ExecuteNonQuery();//perform
    Response.Redirect("student.aspx");// Enter the student. Aspx page
  }
```

5.4. The Realization of the Function of Information Query

In this system used in fuzzy query, just don't have to enter complete information can be queried, with the same keyword with the some of the information displayed, together make the query operation is more humanized.

The main program code is as follows:

Protected void the Button1_Click (object sender, EventArgs e)

{

string of mysql;

String classname = this. The classname. Text;

The string Key = this. Key. The Text;

If (the classname = = "student id")

{

mysql = "select * from students where no like '% %" + Key + "' ";

} / / in accordance with the student id lookup

else if (classname = = "name")

{

mysql = "select * from students where the name like '% %" + Key + "' ";

} / / by name lookup

else

{

mysql = "select * from students where the class like '% %" + Key + "' ";

} / / according to class lookup

Db_conn myconn = new db_conn ();

/ / SqlCommand comm = new SqlCommand (mysql);

/ / comm. Connection = myconn. Conn ();

/ / This is another way to connect the database, the database connection operation, SqlDataAdapter and sqlCommand is similar, but the SqlDataAdapter generally used for the connection

SqlDataAdapter da = new SqlDataAdapter (mysql, myconn. Conn ());

DataSet ds = new DataSet ();

Da. Fill (ds, "students"); / / the Fill method is to put the database in the DataSet "students" in the table

Enclosing GridView2. The DataSource = ds. The Tables (" students "). The DefaultView; / / GridView2 help set the data source

This. GridView2. DataBind (); / / the data displayed in the binding to the datagridview

/ / this. Panel1. Visible = true;

}

5.5. Data Binding

Used more than once in this system, according to the data query and editing, *etc*, and ASP.NET this is a control used in distribution. It is GrideView controls. It is this system is the core content, so made comparatively detailed introduction below.

GrideView control used to display data in a data table. By using GrideView controls, the user can display, edit, delete, sorting, and paging through a variety of different data sources (including the database, XML file, and open data business objects) in the table data.

5.5.1. The Definition of the GridView Control

The GridView specific code is set as follows:

<asp:GridView ID="GridView1" runat="server" AllowPaging="True" // 启用分页功能 AllowSorting="True"// To enable sorting function, can according to the student id, name, etc. AutoGenerateColumns="False" AutoGenerateDeleteButton="True"

    CellPadding="4" DataKeyNames="id"// DataSourceID="SqlDataSource1"

//Get or set the control's ID, data-bound controls to retrieve the list of data items from the control

ForeColor="#333333"

    GridLines="None" Height="20px" PageSize="14" Width="550px" BorderColor="#404040" BorderWidth="1px">

    <FooterStyle BackColor="#507CD1" Font-Bold="True" ForeColor="White" />

    <Columns>

     <asp:BoundField DataField="id" HeaderText="id" InsertVisible="False" ReadOnly="True"

     SortExpression="id" Visible="False" />

     <asp:TemplateField HeaderText="name" SortExpression="name">

     <EditItemTemplate>

      <asp:TextBox ID="TextBox1" runat="server" Text='<%# Bind("name") %>'></asp:TextBox>

     </EditItemTemplate>

     <ItemTemplate>

      <asp:Label ID="Label1" runat="server" Text='<%# Bind("name") %>'></asp:Label>

     </ItemTemplate>

     </asp:TemplateField>

     <asp:BoundField DataField="no" HeaderText=" Student id " SortExpression="no" />

     <asp:BoundField DataField="class" HeaderText="class" SortExpression="class" />

    <asp:BoundField DataField="college" HeaderText=" College " SortExpression="college" />

    <asp:BoundField DataField="data" HeaderText=" Application date " SortExpression="data" />

    </Columns>// Get said GridView controls in the field of DataControlField collections of objects

    <RowStyle BackColor="#EFF3FB" />

    <EditRowStyle BackColor="#2461BF" />

    <SelectedRowStyle BackColor="#D1DDF1" Font-Bold="True" ForeColor="#333333" />

    <PagerStyle BackColor="#2461BF" ForeColor="White" HorizontalAlign="Center" />

```
<HeaderStyle BackColor="#507CD1" Font-Bold="True" ForeColor="White" />

<AlternatingRowStyle BackColor="White" />

</asp:GridView>
```

6. Summary

As can be seen from the practice, using the.net framework for dynamic Web database application system development is very convenient. In applications can make full use of by the.net framework technology provides various features (such as Web forms and Web services), and, by the use of these features. The.net framework technology of RAD (Rapid Application Development) and OOP (Object Oriented Programming) technical support, realize the goals to reduce Programming effort, and Rapid Development.

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