Design and Implementation of University Teachers Management Information System Based on ASP.NET

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Abstract. With the continuous reform of the education system, the scale of colleges and universities is expanding, and the demand for teachers in colleges and universities is also increasing. How to assign teachers' work tasks reasonably and manage teachers' team scientifically has become the main problem to be solved urgently in colleges and universities. Therefore, this paper combines Web technology with computer application technology, and constructs a college teacher management information system based on ASP.NET, to solve a series of problems encountered in current college teacher management. With the help of ASP.NET as the development framework of the system, this system makes use of the layered advantages of MVC to deploy each part of the content layer by layer, and sets up another aspx page under the functional module, so as to improve the detailed functions of the university teacher management information system. The overall development of the system takes the computer as the development hardware, Windows 10.0 as the standard operating system, and C# as the programming language of the system development for the subsequent construction of the system. Choosing SQL server as the database to store system data increases the security of data information and lays the foundation for the subsequent system development.

Keywords: university teacher management; information system; ASP.NET; SQL Server

1 Introduction

With the further implementation of the national education reform, the enrollment of colleges and universities is expanded, and the number of students is sufficient, so the scale of colleges and universities is also expanded. [1] In the information technology era of current scientific and technological development, China's modernization reform in the field of education has entered a formal stage. As the main place to cultivate talents, colleges and universities should make changes to the information management mode of teachers with the help of the development advantages of information technology. At present, the information management of teachers in colleges and universities still has the following shortcomings. First of all, the management of teachers' information in some colleges and universities is still in the stage of manual input. Compared with the electronic system, the manually input paper version information is not easy to save and has a big potential safety hazard, and it takes time and effort to retrieve it. Secondly, the management system of university teachers' management information system is imperfect, and information cannot be shared. Finally, the functions of the university teacher management information system are incomplete and the system security is low.

Based on the above problems, this paper combines digital electronic technology with information management, and constructs a college teacher management information system based on ASP.NET. The system creates data sharing and communication among modules, avoids the problem of data islands, ensures the consistency of teacher information among systems, and facilitates the retrieval and use of later data.

2 Key technology

2.1 ASP.NET

ASP.NET is a kind of Web development platform, which provides an overall programming framework for the subsequent development of the platform, is the infrastructure used for development, and also provides various required services for web programs. ASP.NET relies on HTTP protocol, and uses HTTP commands to set up two-way communication between browser and server. ASP.Net can also realize caching, update the performance of some applications, and then cache frequently used pages of users and store them in temporary locations, which can retrieve these pages more quickly and give better feedback to users. When using ASP.NET backend code, it is written in C#, F# or Visual Basic. Because ASP.NET will extend. NET, you can use all. NET packages and libraries, and you can also create your own library. ASP.NET technology inherits the excellent hypertext transfer web page attribute of ASP technology, which not only can realize single view design, but also is more stable and feasible than ASP technology. [2]

2.2 MVC

special mode for creating Web applications. MVC layering helps to manage complicated program applications, and programmers can pay attention to one aspect for a long time. Besides, MVC layering can also focus on view design without relying on logical business, making it easier to test program applications. MVC can divide system components into three layers in detail, namely view, model and controller. [3] The detailed operation structure is shown in Figure 1. The view layer is mainly responsible for page display and user data interaction. There are many technologies to realize page view, including HTML, CSS, JS and other front-end technologies. The model layer is mainly responsible for the realization of system function modules, the modules that carry data and calculate the requests submitted by users. The controller layer is responsible for summarizing the work of the first two layers, that is, corresponding the view to the model. [4]
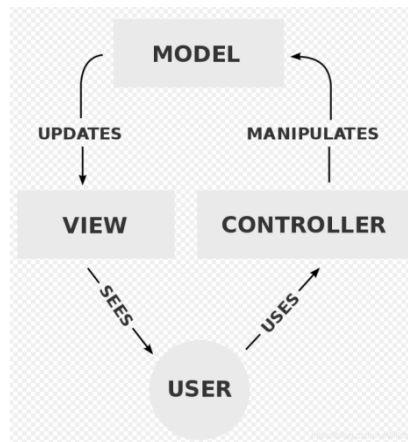
Fig. 1. The MVC running structur

2.3 Development process

According to the introduction of the above-mentioned related technical contents, the configuration and deployment of the development process of university faculty management information system based on ASP.NET is completed. In order to improve the overall function of ASP.NET-based university teacher management information system, the platform will be constructed by using ASP.NET and other related technologies. [5] The bottom development tool is Visual Studio 2019, and the operating system is based on Windows 10.0. Choose IIS version 10.0 for the web server to improve the operation ability of the server. Select SQL server 2019 as a data storage tool to ensure the security of information storage of university teachers.

In the development process of the platform, first, choose Visual Studio 2019 tool in the menu, create the required project in the File section under the file, and select ASP.NET Web in the application. Then, after the configuration attributes and paths of the newly created project are preset, click Next, select MVC in the pop-up window and name it. Then, you can create the ASP.NET MVC project and carry out the follow-up writing of the ASP.NET-based university teacher management information system. Then, use Visual Studio to create a new Web site and name it. Add another template page, select the contentplaceHolder server control, add a table in the control, and set it in detail. [6] Right-click the site just now, and click "Site Map" in the new option under Add to add it, so that the configuration of the above two parts is basically established. Then, add the map file to the template page. Add the Treeview control to the table of the parent template page, then select the site map under the new data source from the task list in the upper right corner of the Treeview control, and finally click OK to complete the overall configuration. Through the description of the above key technologies, the overall framework of the university teacher management information system is roughly planned, and the feasibility of establishing the university teacher management information system is clarified.

3 Functional implementation

3.1 Personnel management side

Archives information management module: In this module, users can use the batch storage function of the system to divide the teachers' information files according to their needs, and the arrangement order is distributed according to the employment time. Users can also use the corresponding functions of the system to manage the staff on campus. [7] In the recruitment process, the resumes submitted by candidates will be classified according to their major. Users can enter keywords on the information page as screening criteria, and the system can screen the resumes of candidates according to the criteria. Resumes that meet the needs of the school, the system will uniformly issue interview invitations. Those who have passed the interview will enter the probation period of the school. Users need to upload the files of trainee teachers to the temporary library. Users can use the page of teacher add.aspx to add information about teachers. At the end of the probation period, users need to click Batch Transfer in the system to merge the temporary database with the local database, so as to ensure the correct storage path of teachers' files. [8] After a teacher applies for resignation, the system will automatically retrieve the teacher's personnel files. Users can click Delete Data on the left to delete the files of the resigned teacher from the database and update the overall information of the system. The realization code of teacher's file information consulting function is shown in Figure 2.

```
public partial class admin_ Default:
Systerm.web.UlPage {SqiDataAdapter myadapter;
Sq1CommandBuilder scb;
DataSet myDataSet;
SqlConection mysqlconncction;
sqlCommand mysqlcommand;
protected void Page__Load(object sender, EventArgs e)
{GridView1.PageIndex- 0;
selectAl1studentO;}
public void selectAlljaoshi()
{mysqlconnection = new
SqlConnection
(System.Cofigurtion.Confnruatioietning.Appettings
["Grademanage"I);
string stremd = "select* from jiaoshi"";
mysqlcommand"new SqlCommand(strcmd , mysqlconnection);
myDataSet = new DataSet();
myadapter = new SqiDataAdapter();
myadapter.SelectCommand = mysqlconmand;
mysq1connection.OpenO;
int numberOfRow = myadapter.Fill(myDataSet, "jiaoshi");
GridView1.DataSource = myDataSetables["jiaoshi".DefaultView;
GridView1 .DataBind(;
Labe11.Text= "There are "+numberOfRow+" teachers in total";
mysqlconection.Close();}
```

Fig. 2. Implementation code of teacher's archives information consulting function

3.2 Academic affairs office side

Teaching information management module: In the course arrangement module, users can arrange college courses reasonably by using the sorting function of the system, and then send the arranged course schedule to the teacher's personal space with the help of the communication function of the system, so that the teacher can view it. [9] In the performance evaluation module, users can conduct overall evaluation according to teachers' workload, professional ethics evaluation, performance evaluation, student evaluation, etc. The system will set evaluation standards according to the requirements of schools. Click the operation button to grade the details of the teacher's work. After grading, the system will automatically generate the total performance score of teachers and rank them. The specific operation is realized by data check.aspx page. [10] In the process of performance evaluation, firstly, the evaluation indicators submitted by all teachers will be obtained and the corresponding index scores will be calculated according to the weights. Then, the performance plan will be called to obtain the overall indicators that all faculty members are responsible for, and the overall index scores will be calculated according to the weights. The actual index score and the overall index score are combined with the time period to form a triad, that is, the performance score P= (index score Pi, overall index score Pj, time t) and the calculation formula is shown in Formula 1.

$$P = \sum_{i=1, \ j=1}^{n} \frac{P_i}{P_j T} \quad (1)$$

In the business training module, users need to plan training activities according to the documents of the Ministry of Education and the actual needs of the school, and use the system functions to set the training in detail. First, the training process is formulated according to the requirements, then the activity parameters are adjusted in the settings, and then the activity notification is generated. Finally, the generated notice is sent to the announcement module for publicity. After the registration, make statistics on the number of teachers participating in the training, use the audit function to screen teachers who meet the training conditions, and then notify the teachers of the time and place of participating in the training by email. After the training, users need to evaluate the performance of the teachers who participated in the training, and generate the corresponding training summary table according to the evaluation criteria and submit it to the school leaders for viewing, as shown in Figure 3.
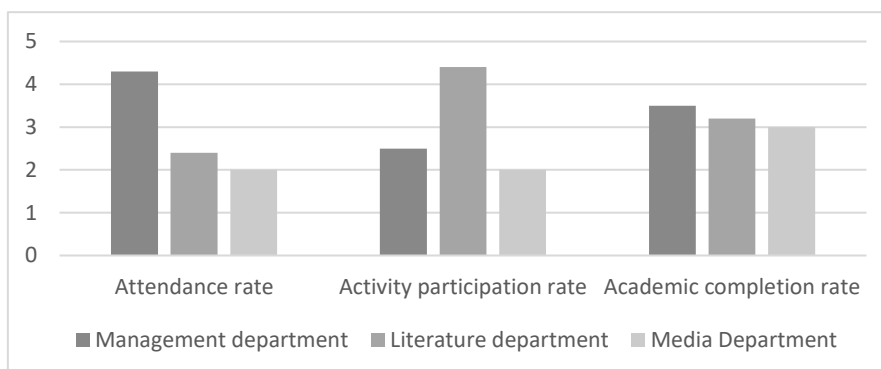
Fig. 3. Frequency of training participation of each department

4 Conclusions

With the development of science and technology and the progress of education, the teaching staff in colleges and universities are further expanded, and the traditional management information model is no longer applicable to the current teaching management. Therefore, this paper combines Internet information technology with teaching information management, and constructs a ASP.NET-based university teacher management information system, which realizes the intelligent storage and management of university teacher information. The system distinguishes users in detail, improves the working efficiency of teaching staff and increases the security and privacy of the system. The construction of this system innovates the teaching mode of information management, improves the office efficiency of staff, and further promotes the construction of intelligent campus integrating teaching and office. The research level of this paper is still relatively shallow. Although the management problems of colleges and universities at present have been improved, the system is only in the initial stage of development and operation, and there are still some deficiencies in details. In the follow-up research, we will further expand the extensibility and applicability of the system, and make the system function more perfect.

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