Development for Assignment Management System of E-Learning Portfolio Platform

Jiong MA and Yan-jun HE

School of Education Science and Technology, Northwest University for Nationalities, Lanzhou, Gansu 730030 China

Keywords: The Assignment Management System, E-Learning portfolio, System development

Abstract. The subsystem of Assignment Management is part of the E-Learning Portfolio Platform, it provides a platform for the exchange of teachers and students, makes the paperless Assignment Management standardization, automation. The job management subsystem using Linux + Apache + MYSQL + PHP open-source development tools, the use of B/S architecture, introduced the technology under the Session, MD5 encryption algorithm, PHP forms technology and so on. E-Learning Portfolio focuses on the core technology of operations management subsystem implementation, such as the file upload on PHP, PHP and MYSQL database implementation of the interface and so on.

Introduction

Early portfolio is mainly used by painters and photographers. They choose a summary of their creative works into the portfolio to show people. U.S. Northwest Evaluation Association defined the portfolio as: “Portfolio is a collection of student works for the purpose of the use of works and show the learning process, progress and achievements of the efforts for students. Portfolio not only including the participation of students in the content selection, selection standard for portfolio work, but also need quality standards for student’s works and the evidence of self-reflection for students.”[1]

Hellen C. Barrett is an expert on Electronic Learning Portfolio (E-Learning Portfolio) evaluation method research, she summarized E-Learning Portfolio as follows: “E-Learning Portfolio used electronic technology, allowing the developer to form a variety of media collect, organize portfolio (audio, video, pictures, text) standards-based portfolio using a standard database or hyperlinks (or target), the typical relationship between work and reflection had been clearly displayed.”[2]

Operations management of E-Learning Portfolio is one of the major daily management involving all aspects of the schools, teachers and students. It is a part of system in development of E-Learning Portfolio. With the continuing reform of the teaching system and the development of computer technology, the daily management of academic work has become increasingly complex, Pressing needs of the development of management software for researching and teaching courses. A mass of the technicians provide service to support from all over the world. All the school continuously increased its fund input not only to improve the hardware situation, but also on the construction of the software system. However, due to the theoretical system is not perfect, and the lack of high-level professionals, there is a gap in the teaching management system from foreign universities.

Analysis of the Current Research Situation

So we should analyze the problem and exploitation actuality in assignment management subsystem. So far, Electronic portfolio system operation management website that had already opened has some problems:

(1) the lack of effective interaction, communication platform has already built through internet for teachers and students, in general, it has interactive design but the lack of human design, many can not meet real needs.
Many teaching sites system technology using winnt + iis + asp + sql2000 architecture, security, robustness, efficiency has been overtaken by the implementation of teaching development needs.

Maintainability is poor: Many courses teaching web development tools used in relatively backward, the system defects are more frequent cause many problems, including: management is not convenient, is not conducive to update, the layout integration and installation is very difficult.

Portability is poor: the majority of teaching sites used asp scripting language programming, the pages and code separation is not enough, less portable.

Key Technologies

Technology of Session

In computer jargon, Session is the time interval that communicates between an end-user and interactive system, usually the time that had already took from the register into the system to log out the system.

Specifically, the Session means time that had spent through entering website from browsing site to close the website. So from the above definition, we can see, Session is a specific notion of time actually\[1\]. Note that the concept of a Session is needed to include specific client, client-specific server-side and operation time not interrupted. The session that connected between A and C is different from the connection between B and C.

So, for different domain names: the main domain names, sub domain names, cross-site domain names or cross-domain server name. The user will have a different Session ID when he opens the page. In order to make these sites when the user logs only, then we have to solve the Session ID issue that must be shared Session ID in these sites have only once. Simply, when a user visits a site, they often need to visit many web pages. For a building site with PHP, the user access, the user needs to perform many of the PHP script. However, due to the characteristics of the HTTP protocol itself, each user needs to execute a PHP script to re-establish a connection and a Web server and also because the characteristics of non-state memory, the connection can not be the last state of the connection. If the user evaluates the variable in a PHP script, so the user can not use the variable that in same value in another PHP script. For example, users log in the PHP script responsible for setting the $ user = "wind", but not in another PHP script by calling $ user to get this value of the "Wind". In other words, we can not be set in PHP global variables. Each PHP script defined in the script variables are valid only in the local variable.\[3\]

Encryption Algorithm of MD5

Now, the encryption and decryption technology has swept through all areas of software applications, through the encrypted password stored in the database.

Md5's full name is the Message-Digest Algorithm 5, in the early 1990s it rives developed by the MIT Laboratory For Computer Science and RSA Data Security Inc's Ronald, it evolved by md2, md3 and md4. Its role is to make large amounts of information in the digital signature using the private key to sign before the software is "compressed" into a confidential format. That is to make an arbitrary length string of bytes converted into a certain length of large integers).\[3\]

In PHP, It is very convenient to use MD5 encryption, we do not need to develop MD5 algorithm by ourselves. Only need to use the function of MD5, please see the following script code:

```php
<?
$password = "123456";
echo "The original string is: $password";
$p = md5 ($password);
echo "MD5 encrypted hash value: $p";
?>
```

The results are:
The original string: 123456.
The results:
The original string: 123456.
MD5 encrypted hash value \(^{[4]}\): e10adc3949ba59abbe56e057f20f883e.
MD5 is a one-way encryption algorithm encryption, In other words decryption algorithm that does not exist. Typically, the use of MD5 encryption for user passwords, or the way to GET passes parameters using the GET method, already used by the hash value of MD5 encryption string is now over after the realization of MD5 checksum.

**PHP Form**

Form is the most common web application component that is made of Submit button and other related elements. Forms as a start tag with `<form>` to `</form>`, otherwise it will not have any effect. There are two very important labels in the Properties tab: action and method in `<form>`. The action tag refers to the file location to receive the results. Method tag is to describe the method used to submit data, it has two values: GET and POST, if we not set the method property or the property is null, the browser's default method is POST method. GET method is that use the browser address bar to pass values when user access a URL. The disadvantage is that they can modify the URL string sent to the server when access to the site, if the procedure was not good enough. And the length of the string is not exceed 250 characters when passed GET. If the string is too long, the browser will automatically cut off and be resulting in data loss. In addition, GET method does not support any characters other than ASCII characters. The user is opaque when POST method sends to variable data. According to the HTTP protocol, the user can not be modified when the data attached to the header of the header information, security is much better which in terms of web applications, and It can use POST to send a large volume of data to the web server.

The approach of managing form is Check the source of the form is submitted, $_SERVER super server of PHP provides a global array called $_SERVER['HTTP_REFERER'] variable to hold the previous source. We can compare with "http://<SERVER_NAME><PHP_SELF>==<HTTP_REFERER>", if the same, it is a legitimate form submission, or no treatment.

The approach of Verify form data is the user submits a form to verify the process that user input which requires both ends of the client and PHP validation. We can use PHP Script on the client to verify the contents of the form, if the data is correct before allowing submission to the server. Use server-side data validation, is to use PHP script to process form data. there are several advantages by Compared with the client to use server authentication offers, it is more secure, seamless connection with all browsers; the drawback is costly, slowing user feedback and increasing the server load. Another advantage is that you can use PHP validation rules for any changes; you can easily change the calibration of the data type, length, and check the scope of the text box number by the use of many functions and flexible features of PHP.

The action of Determine form is Forms can be allocated through the same procedure to deal with the action, you can submit button name to determine the form in a different form of logic in the submission and only press the submit type button It will be sent to form an array, the user can know so long as to determine the value of the button.

**Development**

**File Uploads of PHP**

Function of PHP upload can support the following data formats (MIME) file, as shown in the Table-1.
Table 1. Function of PHP upload.

<table>
<thead>
<tr>
<th>File Type</th>
<th>Type of MIME</th>
</tr>
</thead>
<tbody>
<tr>
<td>Files of Image</td>
<td>Image/gif,image/jpeg,image/png</td>
</tr>
<tr>
<td></td>
<td>image/x-png</td>
</tr>
<tr>
<td>Plain text and HTML</td>
<td>Text/txt,text/html</td>
</tr>
<tr>
<td>Binary file or data</td>
<td>Application/octet-stream</td>
</tr>
<tr>
<td>stream</td>
<td></td>
</tr>
<tr>
<td>Audio format</td>
<td>Audio/basic</td>
</tr>
<tr>
<td>Video Format</td>
<td>Video/mpeg</td>
</tr>
</tbody>
</table>

Database Interface of PHP with MYSQL

Using PHP to obtain data from the database need to follow these steps:

(1) Establish a connection to the database server.

```php
<?php
    $host="local host";
    $user="root";
    $password="123456";
    $db="course";
?>
```

(2) PHP using `mysql_connect` function to establish a connection with the database server.

```php
<?php
    $Connection = mysql_connect ("local host", "root", "123456") or die ("can not connect to database server:". mysql_error ());
?>
```

(3) When using $connection to connect to the database, you need to use `mysql_select_db()` function to select a database:

```php
<?php
    mysql_select_db ("course", $ Conn) or die ("can not select database:". mysql_error ());
?>
```

(4) The establishment and implementation of a query, we use the `mysql_query()` function to achieve this function.

```php
<?php
    $Query = "select * from student";
    $Result = mysql_query ($query) or die ("error in query: $query.". mysql_error ());
?>
```

(5) If `mysql_query($query)` executed successfully that returns the result set of records will be stored in the $result variable. The results may contain one or more rows or columns of data depending on the query we use the command. We can use `mysql_fetch_row()` function to deal with the resulting data into a separate array. According to the returned result, the array is stored in a $result array. We can access the array of field values by use standard PHP array notation continuously. Each call to `mysql_fetch_row()` function will return a result set the next record, this feature allows `mysql_fetch_row()` very suitable for” while “and “for” loops.

(6) Since it take up memory for each query result sets are returned, we use the `mysql_free_result()` function to free memory. If no other queries, you can use the `mysql_close()` function closes a connection to the server and `mysql` When Result set to be released.

```php
<?php
    Mysql_free_result ($ result);
    Mysql_close ($ connection);
?>
```
Summaries

The subsystem of Assignment Management is part of the Electronic Portfolio Platform; you can dynamically build the student's work study files, it pays attention to students' self-evaluation and reflection and achieves multi-evaluation. Students select important information by the learning of Electronic Portfolio. It included the knowledge summary of unit, answers to difficult problems, the design of exploring the activities and process records, the information collected and data, methods and learning strategies, self-evaluation, evaluation from others and reflects on the results. It has contributed to the improvement of learning efficiency and learning ability.

Through the design for management subsystem, a lot of relevant experience were started as follows:
(1) Set the object module:
It is to be used to determine by Portfolio which would include or involve content. It has a strong purpose to choose Portfolio content and content elements are interrelated between others. We should show the basic goal, “record the teaching process, present teaching reflection and show the individual results, “during the design of electronic portfolio. We should integrate many factors that include content that Students will reflect and influence; it will be divided into several modules that it will not only present content of teaching and learning theory and teaching experience, but also reflect on their record collection and research.
(2) The job submission categories:
It will include as follows: 1. Peacetime operations; 2. electronic works (photos, video, audio, web); 3. case studies; 4. professional internship report; 5. social practice report; 6. subjects research projects; 7. Self-planning.
(3) The implementation of multiple evaluation:
We can evaluate various forms in Real time, teachers for students, students for teachers and students for students, self-evaluation and reflection, etc; it can evaluate students' abilities in various domains such as communication ability, reflection and collaboration and so on.

Electronic Portfolio as a complex learning platform, there are many separate but interrelated sub-modules, the main purpose of job management subsystem is to enhance efficiency that evaluate for teachers and students, but the use is different from the assessment for electronic portfolio system, it is two sides. Front-line educators for the implementation of electronic portfolio assessment and development of electronic portfolio assessment support system is needed a long and continuous practice of reflection that they provide first-hand experience for the reform of teaching evaluation. With the development of new curriculum reform and information technology has become more sophisticated, electronic portfolio assessment is used with a certain degree of feasibility and prospects.

References