

My report

by Lu Han

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Design and implementation of film review website based on PHP + MySQL

Abstract

This report starts with the analysis of the needs of the film review website, transforms the requirements into corresponding functional modules, and designs the entire website. The focus of this article is a comprehensive introduction to the function of the website and the corresponding implementation. The implementation of the login is the highlight of this website. Finally, the website test, summarize the problems in the entire development process, and analyse the security, scalability and usability of this website.

The establishment of this website is mainly implemented by php language, MySQL database and Apache server. The established film review website can basically fulfil the expected requirements.

keyword: PHP , MySQL

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1.introduction

My website is a film review website. This article will introduce my website from four aspects: website functional requirements analysis, website design, website implementation and website testing. Each aspect is an independent chapter. This film review website was constructed with PHP, MySQL, JavaScript and CSS technology.

2.Requirements function analysis

Demand analysis is the first step in website construction. Its role is to analyse the various problems that users need to solve, to clarify the requirements of the problem, including what data needs to be entered, what results to get, and what to output.

2.1 Website design goal

The goal of the film review site is first to implement user registration and login. After logging in, users can access information and upload comments and pictures. At the same time, administrator can manage users and view user comments.

2.2 Website function

The website function are as follows:

- i. Ability to complete administrator/user login and registration.
- ii. Ability to complete user management (view, add, modify and delete) of the site, as well as view user comments.
- iii. Ability to complete user upload pictures and comments.
- iv. Ability to separate administrator page and user page.
- v. Ability to display time and date and corresponding information.
- vi. Ability to control web security.

The system can perform basic information display and administrator management, providing users with a friendly interface and relatively simple operations.

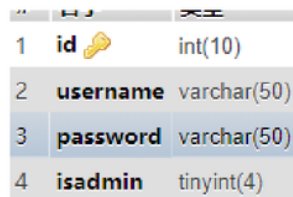
3.Website design

3.1 Database design

Before building a website system, we must classify and structure the data used by the system, both to be clear and understandable, and to be able to adapt to the call of various functions of the system. This website needs to create two data tables: user table and comment table.

3.1.1 User

The user table contains the user id, username and password of the administrator and user. To distinguish between administrators and users, isadmin was added. 1 is the administrator and 0 is the user. The default value is 0. The user table is shown in Figure 1.

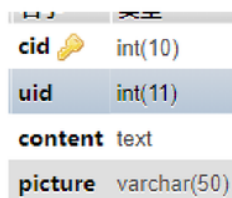


1	id	int(10)
2	username	varchar(50)
3	password	varchar(50)
4	isadmin	tinyint(4)

Figure 1 User table

3.1.2 Comment

The comment form contains the comment id, user id, comment content and picture. The comment table is shown in Figure 2.



cid	int(10)
uid	int(11)
content	text
picture	varchar(50)

Figure 2 Comment table

3.2 Interface design

This website is mainly divided into login page and index page. Most of the functionality of the website implementation is shown on the right side of the index page. This interface design makes the website clear and easy to operate.

3.2.1 Login page

There are three areas on the login page that require user input: username, password and captcha. The login page is shown in Figure 3.

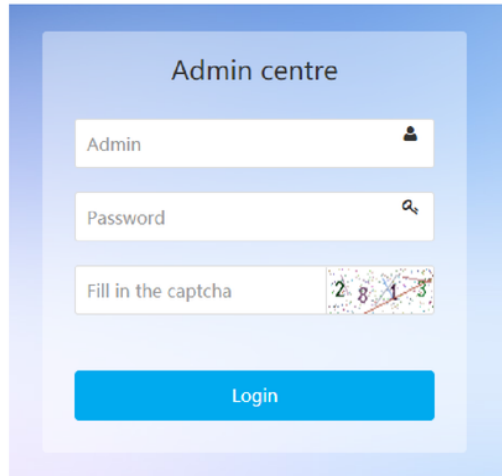


Figure 3 Login page

3.2.2 Index page

The index page is divided into three main sections: upper part, left part and right part.

- i. The upper part implements administrator and user perspective switching, user login and registration.
- ii. The left part shows the function.
- iii. The right part shows the content clicked on the other part.

The index page is shown in Figure 4.

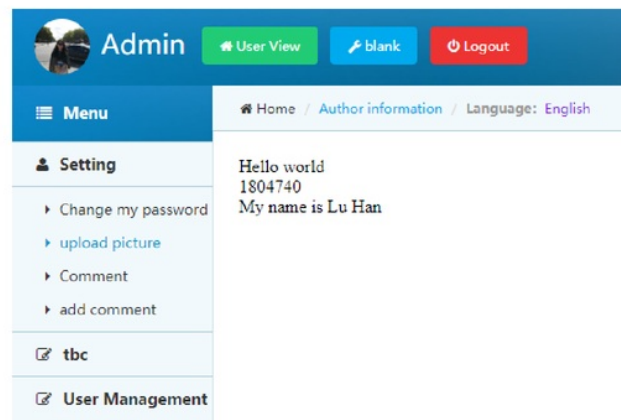


Figure 4 Index page

3.3 Function design

The main functions of this website are divided into two parts: administrator and user.

Administrators can log in, change passwords, manage users, view comments, and log out.

Users can log in, register, comment, upload pictures and log out.

The main functions are shown in Figure 5.

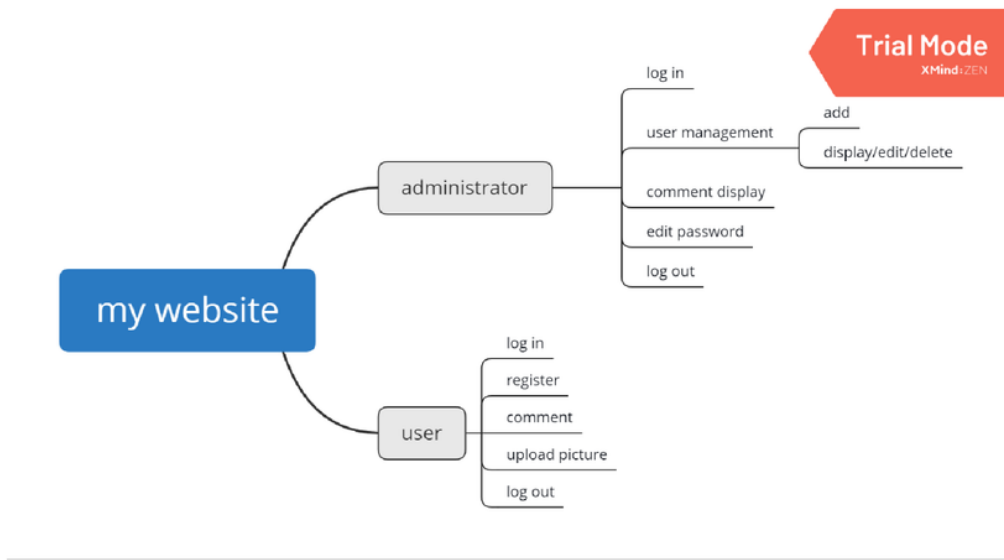


Figure 5 Main function

In addition to these features, the website can also display the time and corresponding information of date.

3.4 Folder structure design

The display of this website is designed according to the separation of administrators and users, so the code folder is divided into administrator folder and user folder, which store their respective codes. Also need a public folder to store public files for administrators and users, including CSS folders, JavaScript folders, image folders and database link files.

The code folder structure is shown in Figure 6.

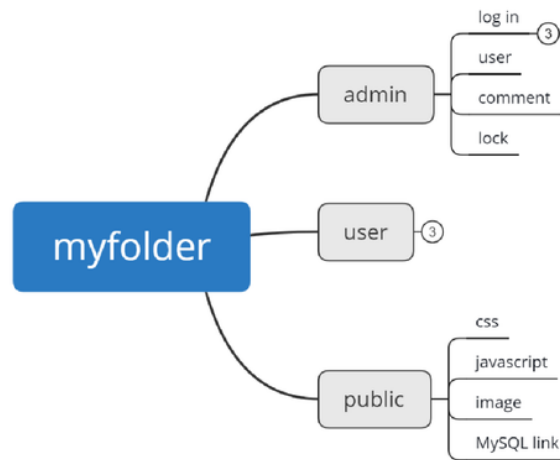


Figure 6 Folder structure

The main purpose of the figure is to show the folder structure, so not all files are shown.

4. Website implementation

4.1 Public function: login

The login page needs to obtain the information of the user in the database and make corresponding judgments. The captcha will be changed every time when it is refreshed, so there is no need to store.

The function that needs to be implemented on the login page is to match the information in the user table with the input information, generate a captcha and match the input captcha.

4.1.1 MD5 for password encryption

MD5 is a hash function encryption algorithm. In php code, MD5 [1] can be used to simply encrypt passwords and increase website security.

```
$password=md5($_POST['password']);
```

Simple numbers will become an irregular combination of numbers and letters through the MD5 algorithm.

4.1.2 Captcha

The CAPTCHA is a public fully automatic program that distinguishes whether a user is a computer or a person. It can prevent: maliciously crack passwords, Forum flooding, effectively prevent a hacker from constantly logging in to a registered user with a specific program brute force method. Most websites have a captcha that requires a click to fill in the box and then automatically pops up the captcha image.

Flow chart for creating captcha [2] is shown in Figure 7.

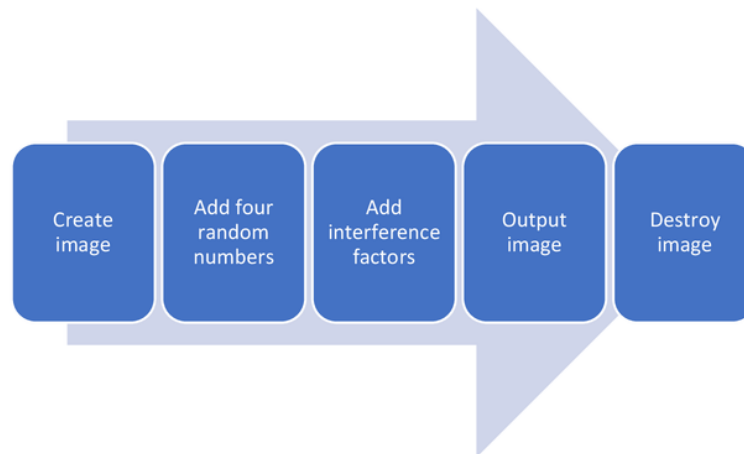
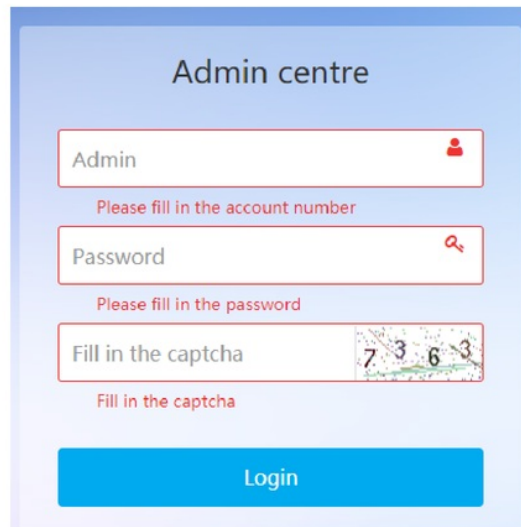


Figure 7 Create captcha

4.1.2 jQuery for validity judgement

jQuery is a fast, concise JavaScript library that makes it easier for users to work with HTML documents [3]. When no information is entered, the login page displays the corresponding prompt, as shown in the Figure 8.



The image shows a login form titled "Admin centre". It contains three input fields: "Admin" (with a red user icon), "Password" (with a red eye icon), and "Fill in the captcha" (with a captcha image showing the numbers 7, 3, 6, 3). Each input field has a red error message below it: "Please fill in the account number", "Please fill in the password", and "Fill in the captcha". A blue "Login" button is at the bottom.

Figure 8 jQuery at login

4.2 Administrator function implementation

4.2.1 User management

Administrator management of users includes viewing, adding, modifying, and deleting user information. In the view user interface, click edit or delete to achieve the corresponding function. Adding a user interface will pop up a confirmation window when you click Submit (Figure 9) [4]. After clicking ok, you will be redirected to view the user interface.

User Info

ID Username Edit Delete

2	user1	edit	delete
3	user2	edit	delete
4	user3	edit	delete
6	user19	edit	delete
7	user20	edit	delete
10	user100	edit	delete
13	Anna	edit	delete

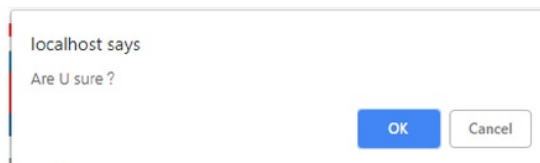
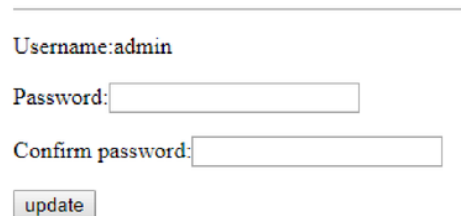


Figure 9 User information display and Popup confirmation window

4.2.2 Change password

This website has only one administrator. The default username is admin and does not need to be changed. The password and confirm password must be entered the same to successfully change the password. Change the password as shown in Figure 10.



Username:admin

Password:

Confirm password:

Figure 10 Change password

4.2.3 View comments

User reviews are displayed using pagination techniques. Pagination is a technique for presenting all data segments to users. When a site user's comments arrive at a large amount, paging makes it easier for administrators to view comments.

The paging function implementation process consists of the following four steps [5] [4]:

- i. Connect to the database
- ii. Send out the data we want from the database
- iii. Use sql statement to get paging data
- iv. Get the total number of data, calculate the number of pages and the data displayed

User comments are shown in Figure 11.

user2	123456	The film's design is both aesthetically pleasing and practical, and it's a cool coat that complements the underwater environment. The design team used more than 2,500 materials. The most difficult of these is the gold armor of Neptune, which not only uses 3D printing technology, but also several teams to complete the production. In addition, Jura's dark green tight-fitting suits, Aum's reflected light armor, black manta rays of the gods restored helmets, and underwater warrior's luminous equipment have their own characteristics.	
user2	123456	whatWarner Bros. Pictures and director Wen Ziren have teamed up to present you with a magnificent action-adventure movie, "Sea King"! The vast underwater world spanning the seven oceans is slowly unfolding, giving the audience a stunning visual spectacle. The film is starring Jason Momoa, who talks about Arthur Curry, who is half-man and half Atlantis, on an unforgettable journey. He not only needs to face his special life, but also has to face life. And the test of the king: Can you deserve the name of "King of the Sea"?	

<<Prev Page 1 2 3 Next page>>

Showing results 3 to 4 of 5

Figure 11 User review

4.3 User function implementation

Functions that users need to implement include new user registration, uploading images, and adding comments.

4.3.1 User registration

New users of this website can register. It is implemented in much the same way as an administrator changing a password. The difference is the addition of a username input. If the entered username already exists in the database, the registration fails, and the pop-up displays 'User already exists'.



Figure 12 User registration fail

4.3.2 Upload image

The <form> of the uploaded image file must have the enctype attribute, which is multipart/form-data, which is used to make the form upload binary data. The server uses \$_FILES [6]to get the files in the form.

Uploading images limits the size, type, and display size of the image so that all images that can be uploaded to the site are available for this site.

4.3.3 add comment

The user name and comment entered by the user are in the user table and the comment table of the database respectively. Through two tables combined query, if the username exists, this comment can be stored in the comment table.

Add a comment page as shown in Figure 13.

A web form for adding a comment. It consists of two input fields: a single-line text box for the username and a multi-line text area for the comment. Below these fields is a blue rectangular button with the text 'Submit' and a small icon of a document with a checkmark.

Figure 13 Add comment

4.4 Secure

All pages of this website can be opened directly via the URL. In fact, all the websites in daily life must log in first and then see the index page. For this purpose, this site joins the session to improve the security of the site.

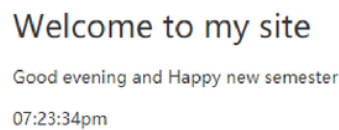
The Session principle is that each session of the server maintains a session information data, and the client and server rely on a global variable `$_SESSION` to access the session information data. In the Session mechanism, the data is stored on the server, so it cannot be forged. To obtain the data, you must use the `$_SESSION` provided by the server. Web security is guaranteed through the session [7].

Each time open the session, that is, when there is `session_start()`, it will automatically generate a `session_id` to indicate the unique ID of the session, and automatically write a variable named `PHPSESSID` to the cookie. The value is exactly `session_id`. When the session is not over, when the visit is again, the server will read whether the cookie of this `PHPSESSID` has expired. If it can be read, continue to use this `session_id`. If not, then A new `session_id` will be generated and a `PHPSESSID` cookie will be generated. Since the

PHPSESSID cookie generated by default is a session, that is, closing the browser will expire, so when re-browsing, a session_id will be regenerated.

4.5 Time display

Time display is an independent part of web design and has no connection to other parts. Apply `document.getElementById("message")` and `message.innerHTML` in JavaScript to judge the current time and output the corresponding event [8]. The time display of this website is shown in the figure 14.



Welcome to my site

Good evening and Happy new semester

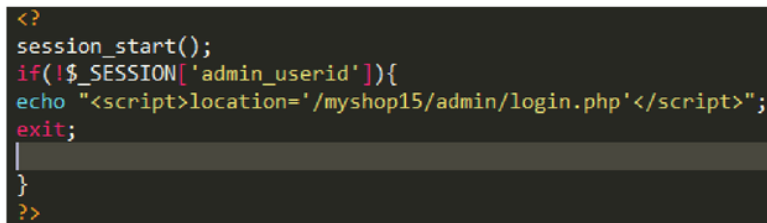
07:23:34pm

Figure 14 Time display

5. Website test analysis

5.1 Issues affecting dynamic websites

Security : Use MD5 to encrypt passwords, use captcha to prevent machine damage, and use session to allow admin to log in to perform other functions. To protect the security of the site, I put SESSION in a separate lock.php file and include it in index.php. Figure 15 shows the code in lock.php.



```
<?
session_start();
if(!$_SESSION['admin_userid']){
echo "<script>location='/myshop15/admin/login.php'</script>";
exit;
}
?>
```

Figure 15 lock.php

Any page that you can't view without logging in can be implemented by simply adding lock.php.

Scalability : The jump between the administrator and the user page can be realized by clicking the view switch on the upper side of the webpage, and some menu options are reserved on the left side of the webpage, which is easy for the secondary development of the web developer. The reserved function addition area(tbc and blank) is shown in Figure 16.

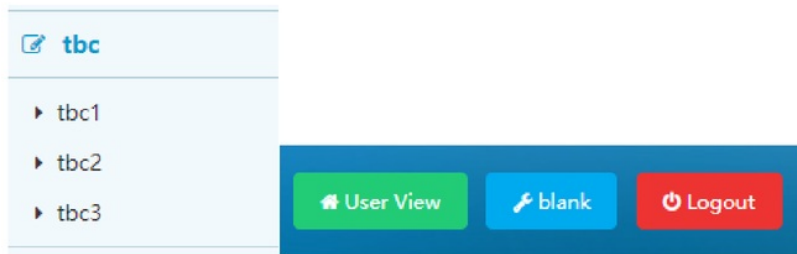


Figure 16 Reserved function add area

Usability : By displaying the main functions on the right side of the index page, the left side is unchanged(Figure 17), so that the website can be quickly and skilfully operated for users who do not use the network frequently.



Figure 17 User friendly interface

Since this is a movie review site, users and administrators are different. The administrator must be logged in to view the administrator web page. Users can view the information directly without logging in to the site, but they must sign up to get a username to submit a review.

5.2 Problems in website testing

After the website is completed, the functions of each module are tested in detail. Some problems were found compared to the predicted output data. Mainly due to connection problems with the database, as well as the relative location between the php files. Changing the location of the php file causes all CSS, JavaScript, and MySQL features to fail. It takes a

lot of time to check the relative position of the files. Therefore, the location of the code files should be strictly designed in the website design part.

6.Conclusion

My report specifically discusses the main functions and implementation of the film review site. It focuses on php and MySQL links and subsequent management, using MD5 encryption algorithm, captcha and jQuery to achieve login function, using SESSION to improve website security and other key technologies. The implementation of these technologies meets the needs of the system.

References

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My report

GRADEMARK REPORT

FINAL GRADE

57 / 100

GENERAL COMMENTS

Instructor

WEBSITE

- Range of PHP coding demonstrated - A good range demonstrated of both Javascript and PHP. Good Javascript validation - but remember that Javascript can be switched off in the browser, so the site went live you would need this to be server-side (ie PHP) to avoid this. Login system and administrator features (add/edit/delete) were present. You did not provide any searches - adding more films to the site would make this easy to do. Be careful about allowing the user to comment anonymously - this really needs to be managed better.

21/30

- Database structure and design – A slightly confused design. Your website is very limited if you only review one film. You need to have a film table so that the user can leave a comment on a film. The two tables you have supplied are simple in their design, but nevertheless normalised sufficiently.

5.5/10

- Overall Integration of Website - A good layout overall, some of the data from the database needs to be styled to fit in with the theme of the page

7.5/10

Knowledge and Understanding of Subject – A reasonable understanding was demonstrated, but seem my comments about the film above

13/20

REPORT

Research-informed Literature – I think you have misunderstood the requirements of this report. The assignment does not ask for an analysis of the implementation of the website, it asks for an assessment from the point of view of security, scalability, usability and accessibility.

Nevertheless, some relevant security points have been identified such as Captcha, MD5 and use of sessions variables to manage log in. . You could also have written about wider security issues such as SQL Injection, Cross site scripting etc.

The scalability section is misunderstood - scalability is about growth of your website. For example, if the number of rows in the database grew to a large number, would mySQL database still be suitable? What would be the implications for website hosting etc.

Usability information is brief and Accessibility seems to have been missed - this is concerned with making the website suitable for disabled people and can be achieved with design considerations such as the use of alt attributes for images and careful use of stylesheets

5/15

Analysis – You have related some of the security points to your website, but since things have been missed in the literature review, it is difficult to include the required detail here.

5/15

Overall = 57%

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