

WWW Technologies and Applications 2021

Assignment 4 — AJAX/JSON

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Deadline: 11:59pm, May 27, 2021

Demo Video: <http://xxx>

1. Task Description

In this assignment, you will learn:

- How to use JSON format to transfer the data
- How to build and enhance a blog website by using AJAX
- How to use javascript/jQuery to make your website more interactive

2. Blog implementation

In this assignment, you are required to create a blog platform and make it more interactive with users by using AJAX to avoid web page refreshes. You need to implement three main functions for the following tasks: "sign-in and register pages," "search and view the articles," and the "main page." The latter two of the above three tasks must be written by AJAX; otherwise, they will not be scored, and the implementation techniques of the remaining functions are not limited. You should link your homework 4 button on the page you completed for assignment 1 to this assignment. If your homework 4 button could not link to this assignment, this assignment will NOT be graded. The details of the required features are described as follows.

2.1 Sign-in and register pages

For sign-in, register, and the MySQL connection methods, please refer to the description in homework 3. You may reuse your codes of these methods you implemented for Homework 3 as you wish. The functions of the sing-in and register pages are required but ungraded. If these functions are not implemented, the entire assignment will not be scored. There must be a button on the article page that can be viewed by everyone as shown in Figure 1 to provide a link to enter the registration page and the login page, respectively. As shown in Figure 2, the first row on the register page is the user's nickname, the second row is the mailbox, and the next two rows are the password. When creating an account and after logging in, it is necessary to prevent entering empty values, verify the account password, and display an error message on the page immediately. The error messages are shown when the input data are not entered, the password is wrong, or the account is incorrect in the field. The sign-in page also needs to verify the input

fields and display error messages on the page. The error messages are shown when the input data are not entered, incorrect passwords are entered, or the account doesn't exist. The register page and login page are shown in Figures 2 (a) and (b), respectively. After a successful login, the main page is displayed as illustrated in Figure 6, where there is a user's information panel with the number of lottery tickets and the account balance on the left and the article panel on the right to show all the posting articles of the login user.

Article Page

[Article](#) / [Log in](#) / [Register](#)

| Articles | | |
|----------|------------------------------|---------------------|
| Search | | |
| Author | Title | Time |
| KBH | Search title | 2021-02-18 13:46:38 |
| KBH | DEMO | 2021-01-26 16:32:14 |
| Lee | Hw4 | 2021-01-25 16:22:05 |
| Lee | www_HW | 2021-01-25 16:20:23 |

Figure 1: The article page.

Register

Register a new membership

Username

Email

Password

Retype password

有資料未輸入

Register

Cancel

I already have a membership

Sign in

Sign in to start your session

Email

.....

有資料未輸入

Login

Cancel

Register a new membership

(a)

(b)

Figure 2: Register and sign-in pages.

2.2 Article Page (35%)

On the article page, please create a text field to take a user's input as the keyword to search for the articles, and you can click on an article title to view the article, leave a comment, and press the like button.

2.2.1 Search articles (20%)

When users search for articles on the article page, you should implement the search function and display results on the page. There are several essential points on this page:

- (1) Searching articles should be executed on the same page, and AJAX should be used to avoid page refresh.
- (2) When users search for articles, you must pass the data to the database (**must use MySQL**) through the AJAX method. Ajax can only use data in JSON format when transferring data, and the search results are updated on the article page in real-time. If you use other methods to transmit data, it will not be scored.
- (3) The search function is to determine whether the search field's text has been changed, search for articles by keywords, and update the article results in real-time. The results must include the author's nickname, article title, and posting time. Each article can be viewed by clicking on the article title, and all articles are displayed when no keyword is entered. An example of the search result of the above function is shown in Figure 3.

| Article Page | | | Article / Main page / Log out |
|--------------|------------------------------|---------------------|-------------------------------------------------------------------------------|
| Articles | | | |
| Search | | | |
| Author | Title | Time | |
| KBH | Search title | 2021-02-18 13:46:38 | |
| KBH | DEMO | 2021-01-26 16:32:14 | |
| Lee | Hw4 | 2021-01-25 16:22:05 | |
| Lee | www_HW | 2021-01-25 16:20:23 | |

| Article Page | | | Article / Main page / Log out |
|---------------------------------|------------------------|---------------------|-------------------------------------------------------------------------------|
| Articles | | | |
| <input type="text" value="hw"/> | | | ✕ |
| Author | Title | Time | |
| Lee | www_HW | 2021-01-25 16:20:23 | |
| Lee | Hw4 | 2021-01-25 16:22:05 | |

Figure 3: An example of the search results.

2.2.2 View articles (15%)

When the user clicks an article title on the article page, the user can view the corresponding

article. The primary function here is to display the content of an article and allow a login user to leave a comment and press like. The function of leaving a comment and pressing like needs to be implemented by AJAX. As shown in Figures 4 and 5, the Like icon needs to be changed when you press it, and the number of likes also needs to be changed. When leaving a comment, the comment area and the number of comments must be updated. Only registered users have the privilege to leave comments and press the like button. When there are more than ten likes in the article, the author of the article can get a lottery ticket. When an unregistered user or a non-login user clicks on the like button, an error message "Please login the system first!" will be shown on the page.

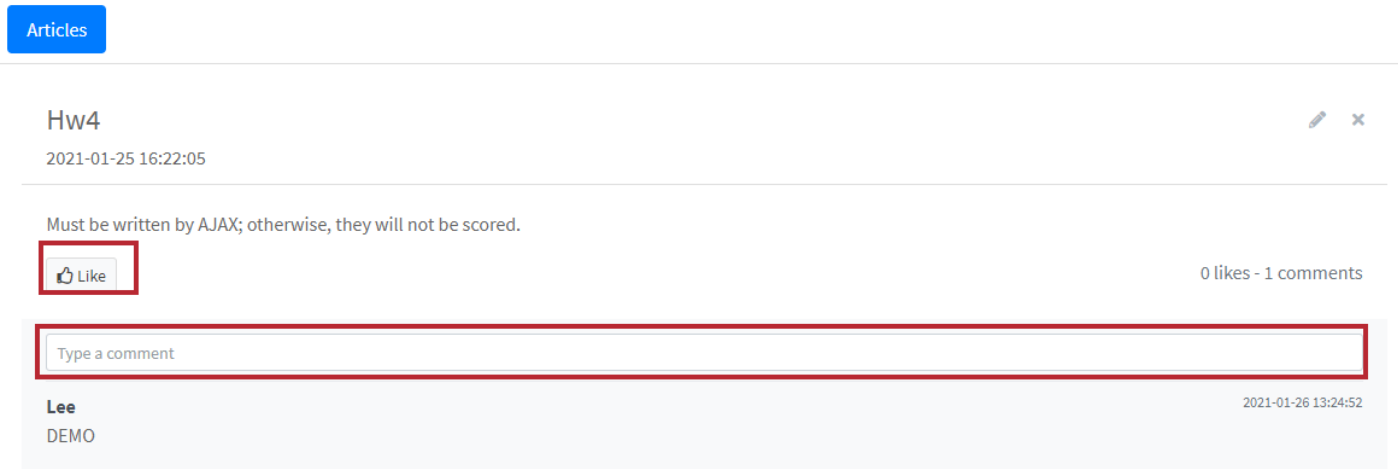


Figure 4: Like button and the comment area.

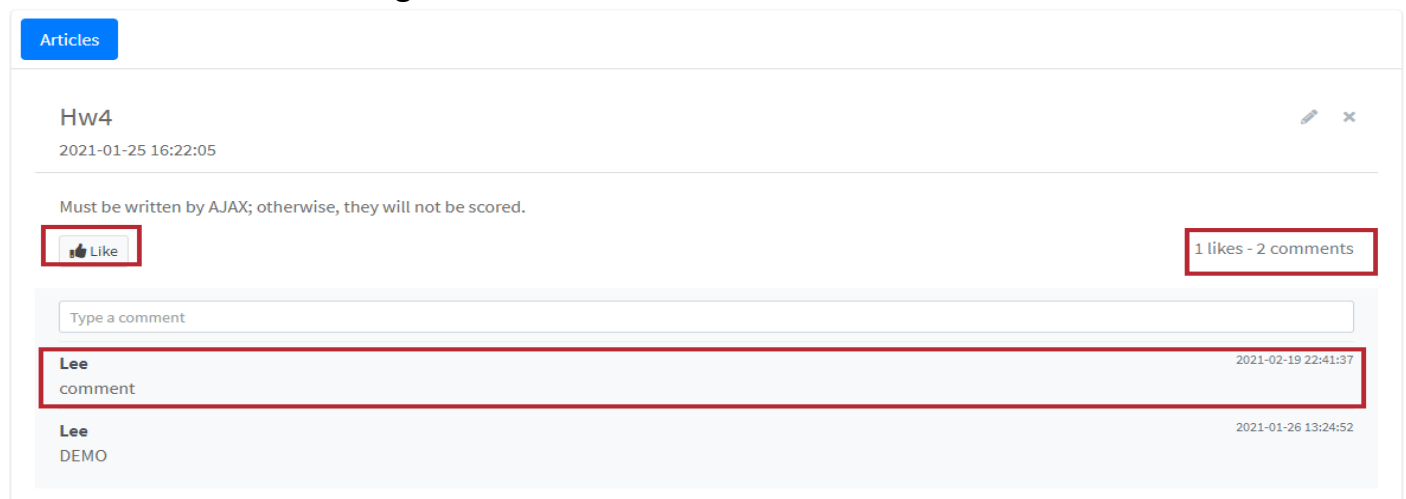


Figure 5: Updates on the number of likes and comments.

2.3 Main page (65%)

In this session, you must complete the functions of "displaying article and account information," "posting, editing, and deleting articles," "leaving comments, pressing the like button, and gaining lottery tickets" on the main page which is as shown in Figure 6. The details are as

follows.

2.3.1 Display article and account information (10%)

The article and the account information as well as the lottery function must be displayed on the user's information panel on the left of the main page. On the main page, there are buttons for posting, editing, and deleting articles of the login user. When the user posts an article, twenty points of the account balance are be deducted. If the article is liked more than ten times, the author awards a lottery ticket.

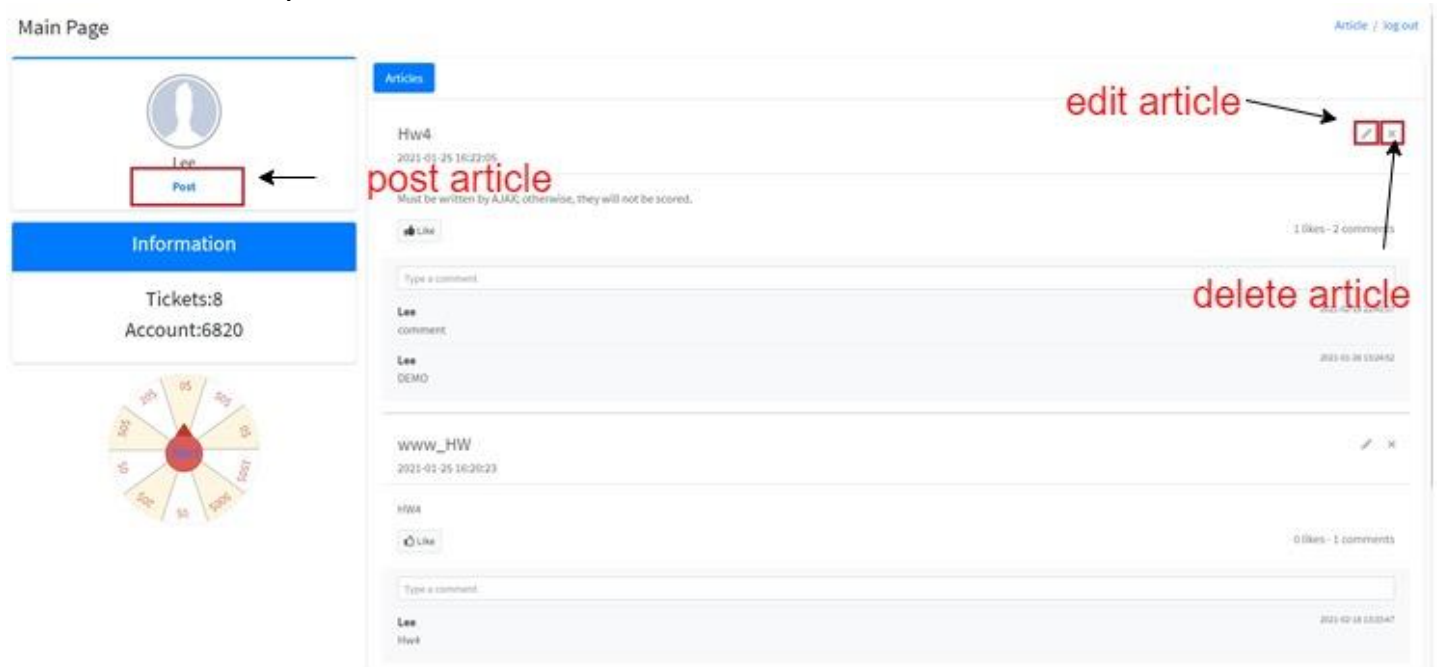
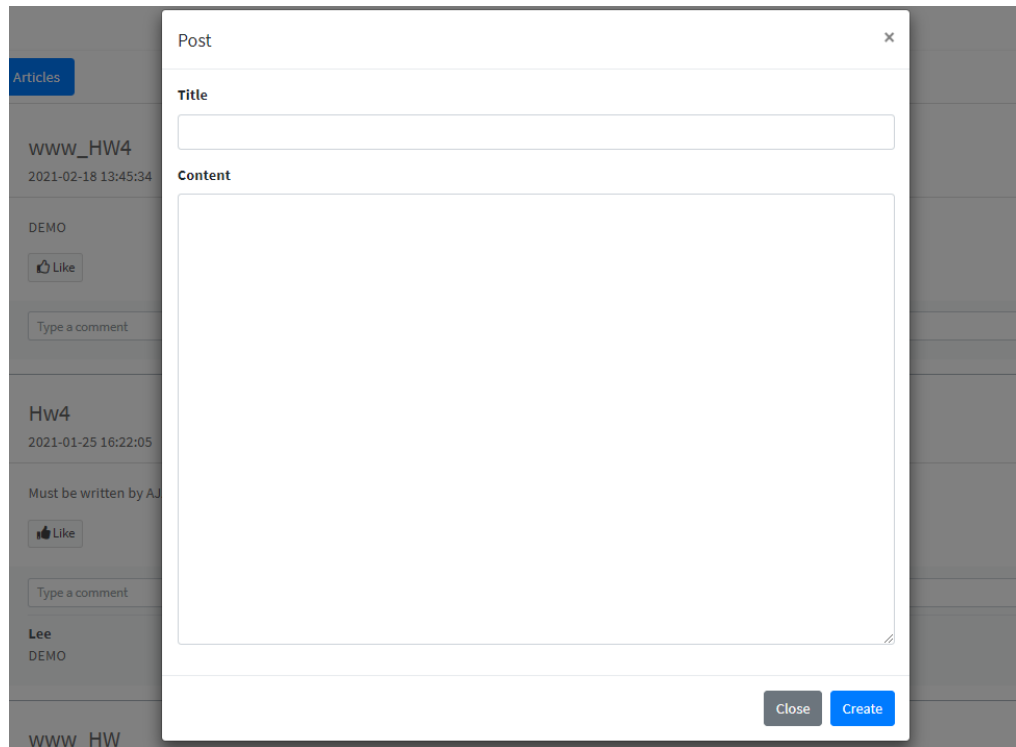


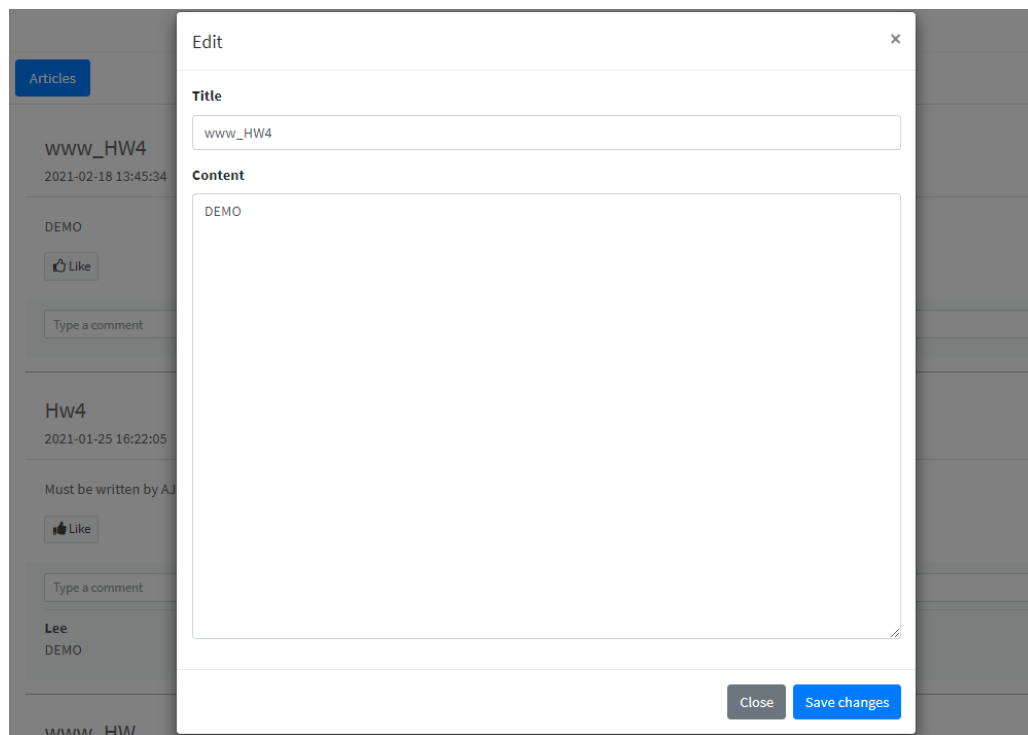
Figure 6: The main page.

2.3.2 Post (10%), edit (10%) and delete(9%) articles

On the main page, the page for posting and editing articles is invisible initially until the button of posting or editing articles is clicked. **You must use JSON for data format transmission; otherwise, no score will be given.** The pages after clicking the posting button is shown in Figure 7 (a). The twenty points of the account balance are deducted when posting an article, and the points will not be returned to the user when the article is deleted. The page after clicking the editing button is shown in Figure 7 (b).



(a) The pop-up page when the posting button is clicked.



(b) The pop-up page when the editing button is clicked.

Figure 7: Pop-up pages of posting and editing articles.

2.3.3 Leave comments (5%), press the like button (6%), and lottery(15%)

The three functions need to be implemented by AJAX, and the data can only be transmitted in JSON format. The comment function and the "like" function are the same as they are described in Section 2.2.2. Please note that when the number of likes is greater than 10, the account balance must be updated on the user's information panel. The presentation style and the content of the turntable below the user's information panel are not limited. However, as the examples are shown in Figures 8 (a) and (b), only the turntable or the pointer can be rotated, and the prize drawn will be displayed. The balance and the number of lottery tickets will be updated in the information column in real-time.

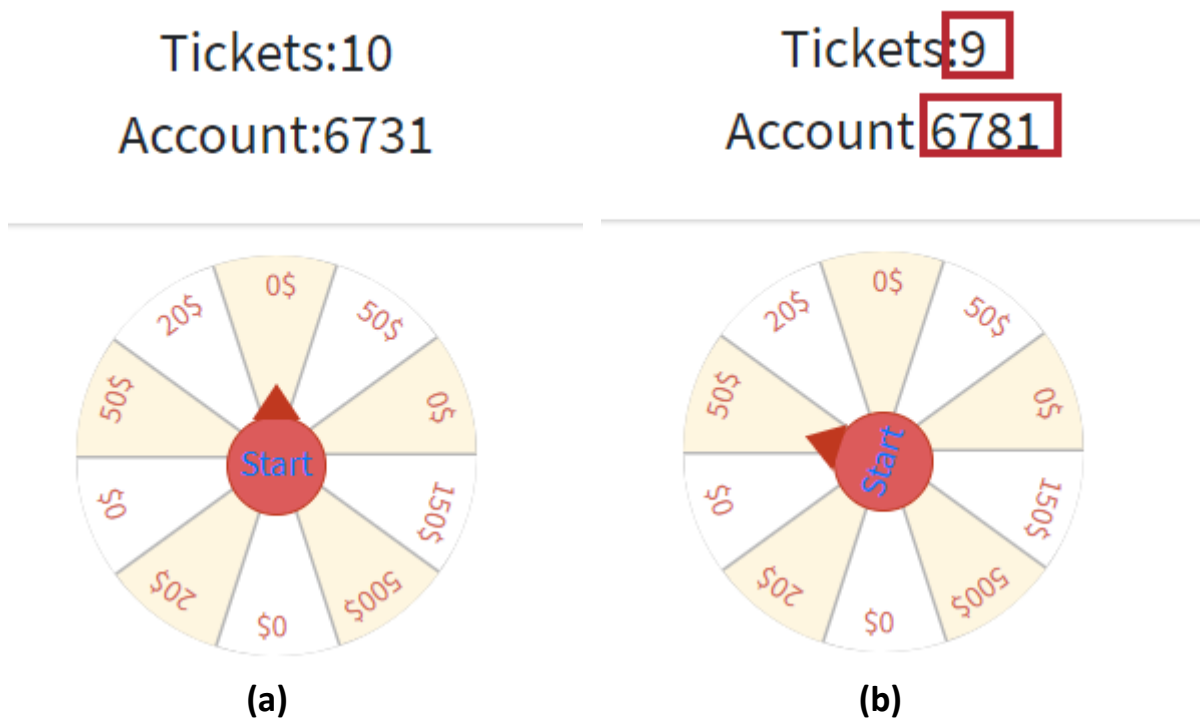


Figure 8: Examples of the turntable.

3. Grading policy

Graders will test your homework only on Google Chrome in 1920*1080. **Homework submitted late will be accepted for up to 7 days after the due date, and will receive an automatic 30% penalty. Homework submitted more than 7 days after the due date will not be accepted. Only one final submission (either one on-time or one late submission) is accepted. Your assignment will not be graded without a demo video. You should explain all function of your assignment in the demo video. The link of your demo video should be submitted to eCourse.** The TA(s) will mark and give points according to the following grading policy:

- Search page: 35%
 - Search articles: 20%
 - View articles: 15%
- Main page: 65%
 - Display article and account information:10%
 - Post: 10%
 - Edit: 10%
 - Delete: 9%
 - Leave comments: 5%
 - Press the like button: 6%
 - Lottery: 15%