1 Add jQuery to your Site

Download the most recent version of jQuery from jquery.com and add it to your website. You must use jQuery to make your site "fancier", i.e. make the user interface more user-friendly, more attractive, appear more responsive, etc. You can use existing plugins or roll your own. What you do completely at your discretion, but you must use it in some way. Here are a few examples:

(a) **Client-side validation** Use jQuery to validate form input on the client. This can make the user experience better by validating before making a request to the server, or even before submitting the form.

(b) **Fading effects** Most form submissions display some sort of status in a "flash" message to the user. These say things like "Invalid user credentials" or "Your post has been sent". You can use jQuery to make these message divs fade in and out, or some other effect like scrolling off the page.

(c) **Tooltips** If your site contains sections that could benefit from adding additional information, such as instructions for new users, use jQuery to add tooltips. These are obvious help buttons (like question marks) that, when clicked, will pop-up a small box with useful information.

(d) **Image Gallery** If your site contains a list of photos, like a photography portfolio, consider using a jQuery plugin to make an image slider, rotator, carousel, or some other appropriate effect.

(e) **AJAX** Add Ajax to make your site feel more like an application. Eliminate page reloads by making form posts and updates asynchronous. This will also help make your site feel more responsive.

2 Design and Usability

As part of the design and usability lectures, make sure your website meets the following minimum usability requirements:

(a) **Persistent and Context-aware Navigation** You should have a navigation bar that is in the same location as you traverse each page. As you click on your navigation links, the nav bar must give a visual cue for what page you're on by remaining active or highlighting the link in some way.

(b) **"for" labels on Form Element Tags** Most form elements should have a label. Make it easy to bring focus to the form element by adding a "for" attribute. For example:

```
<label for="email">Enter your email:</label>
<input type="text" id="email" name="email">
```

(c) **Re-populate Forms When Validation Fails** Form elements must "remember" what the user entered in the event of submission failure. Making the user fill out a form again typically induces rage.

(d) **List All Form Errors at Once** When multiple errors occur on a form submission, list all errors at once, and make them specific. “An error occurred” is too vague.

(e) **Custom Web Font** Import a web font into your website using a third party like Google Fonts or Typekit. Make sure to reference it in your style sheet. Custom web fonts add some personality to your site. Import example:

```
<link href="http://fonts.googleapis.com/css?family=Open+Sans"
  rel="stylesheet" type="text/css">
```

3 Secure Your Site

Your site should already be safe from SQL injection attacks because you’re using prepared statements with PDO. Using techniques discussed in class, secure your site from the following additional exploits:

(a) **Cross-site Scripting** All untrusted data (anything from the user) must be sanitized to prevent XSS attacks.

(b) **Encrypt All Sensitive Data** Passwords and all sensitive data must be encrypted by a one-way hashing algorithm, such as SHA256 or BCRYPT. You must use a salt when using a one-way hash of sensitive data.

(c) **Restrict URL Access** Make sure all URLs requiring a valid login are restricted to only logged-in users. This is done by add a permissions check to the top of every page as necessary.