SY306 Lab Two

Bring on the Style + ClickJacking & Redirects

During class 3 and 4 we discussed how CSS works. The following review may be helpful before proceeding with the lab.

Introduction

Web sites are meant to provide information, promote something, and/or attract users. Up till now, we have looked mostly at the structure of web pages. Now we will look at formatting – an important additional aspect of good web site design. The techniques used in HTML5 are cascading style sheets (CSS). For this lab, dress up your site using CSS.

Part of the role of web author is to be creative, using the available tools. Again, this lab will be building on the pages you created last week. Therefore, it is highly recommended that you use a copy of the pages you created last week as the basis for this lab. At a minimum your store Home Page (index.html), products page and sign-up form from the previous labs are required and shall be adapted to CSS. In addition, your pages should convey a set purpose, be organized in such a way that it promotes that purpose, and be visually appealing.

Since the focus in this lab is on appearance, a larger than usual portion of your grade will depend upon aesthetics.

Lab Requirements

Directory: You must create a folder under your public_html called "Lab02" (without the quotes) and store your work in that directory. You should copy your lab from last week into this directory and make changes to it here! **Make sure you do not modify the files in Lab01 folder.** Note: You do not have to have Lab 1 completed in order to work on this lab, but you do need your store home page (index.html), products page (products.html), and sign-up form!

Tip: an *easy* way to copy your Lab01 files to Lab02 is to run the following command from your `~/public_html$` directory:

```
cp -p -r Lab01 Lab02
```

1. **(15 points) New style sheet:** Create an external style sheet to contain a core set of styles used in all pages within this lab's site. The name of the style sheet must be "**styles.css**" (without the quotes). At a *minimum*, the following CSS properties must be defined and used:

    a. background-color

    b. color

    c. margin-xxx (left, right, top, or bottom) or padding

    d. border-style or border-color or border-width

    e. text-decoration or text-align or font-weight or font-size

2. **(15 points) Existing HTML pages:** modify all of your existing HTML5 pages (that you have copied into the Lab02 directory) to link to the style sheet you created above. Then make any additional changes to each page so that the overall appearance is noticeably different now that the stylesheet has been added (hint: you don't necessarily have to modify the body of your page to achieve this, though it is fine to do so). Try to make use of CSS to make your pages more attractive and more functional.

3. **(10 points) New HTML5 page:** Create a new page, "detail.html", that provides details about one specific product in your list of products. Provide a link from the products list to the new page and ensure the new page links back to your products list.

In an embedded stylesheet, define at least two classes. Apply styling using those classes:

    a. Use span or div tags in styling

    b. Use a floating technique to put an image on the right or left side of a page

    c. Use the CSS properties:

        - position
        - opacity

4. **(10 points) Navigation bar:** Create and style a navigation bar for your website. The navigation bar should have at least 2-3 links: to the home page (index.html), to the products.html page, and to sign-up form, if that is on a different page. Add the navigation bar to all the pages on your website.

5. **(15 points) CSS Grid:** Use CSS grid to either:

    a. Format at least one object/component of your website (product list, product details, etc.)

    b. Format the general layout of the pages (Nav Bar, Footer, Sidebar, etc.).

6. **(15 points) Attacks - Redirect:**

    a. In your index.html page, add 1 "misleading" hyperlink that proclaims it is for Google, but instead links to some other website (Rickroll for example!).

    b. In Lab02 create a new file called "newindex.html". Use the starter page to begin, but remove the instructions from it. Research the use of "meta" tag to implement redirects.

Then modify the page by adding a meta refresh tag, such that when the page is loaded in the browser, the user is redirected to "index.html".

7. **(10 points) Attacks - Clickjacking:**

   i. **New Years 2019 Facebook & NFCU Promotion!** Click on Navy Federal's like button for a chance to win $100!

   ii. Did you get click-jacked?! Take a look at my source code to see how I did it.

   iii. Your task is to implement a clickjack attack on your index.html. Find a social media icon image such as (Facebook like, yik yak, twitter, Instagram) and place it near the top of your page.

   iv. Add an invisible iframe positioned over the image, so when the user presses that image, you run some obnoxious media from the internet (ex. Youtube, play music, etc.). The site inside the iframe does not have to open in a new tab but it does need to play media inside the iframe. The trick is to make the iframe align exactly on top of the icon

8. **(5 point) Validation:** Validate your CSS code using the CSS validator at http://jigsaw.w3.org/css-validator/

9. **(5 point)** Modify the the main student page of your web site (default.html) to add one new link to Lab02/index.html. Do not remove the link to Lab 01.

Your web page must be constructed using Notepad++, Notepad, WordPad, emacs, Atom, Sublime, Nano, vi or a similar text-only editor. The use of programs such as Microsoft Word, Microsoft FrontPage, Dreamweaver, ColdFusion, Mozilla Composer, ColdFusion, WordPress, etc. will be considered an honor offense.

Extra Credit

Throughout this course, expect extra credit to be worth a nominal number of points – the main purpose is for your additional practice and challenge. Multiple parts may be given; you can attempt all, some, or none of these.

1. For this assignment, add another image to your page, and make this image a hyperlink to some logical target, given the image. Can you find an image and a layout that makes clicking on the image natural, without needing explanation?

2. Explore the web to discover how to add an internal hyperlink - a link to a section on the **same** page. Modify your page to make some logical use of this feature.

3. Attack **Part I:**

   a. Modify the HTML redirect specified in 6.a above, so that the browser status bar also indicates the "true" hyperlink destination (Google) when the mouse hovers over. Upon clicking the link, the user is nevertheless sent to the redirected destination.

4. Attack **Part II:**

   a. On your default.html page, under the Lab02 heading, using the name "good sign-up" make a link to the file specified in the action of your form, with all of form variables specified in the URL, such that all variables are filled out. Clicking this link should have the

same effect as if I filled out the form and submitted it. Hint: if your form uses the GET method (change this temporarily if necessary), then you can create the needed URL for this by filling out your form correctly and hitting submit – look at the resulting URL!

b. On your default.html page, under the Lab02 heading, using the name "bad sign-up", make a link to the file specified in the action of your form, with all the form variables specified in the URL, but the required variable (see the last bullet from part 11 – Form requirements) has no value, and the "hidden" variable has a value different than the value specified in the form. Hint: You can manually modify the "good sign-up" URL.

Deliverables

1. Your main web page should be called "index.html" (without the quotes).

2. Your pages should contain all of the elements described in the requirements section above.

3. All of your files should be in a folder called "Lab02" (without the quotes) inside your `public_html`. **Your instructor will assume that your web pages are viewable at http://midn.cyber.usna.edu/~m21xxxx/Lab02/index.html** You may want to check that this URL is viewable and that everything works correctly from a computer where somebody else is logged in.

4. The main student page of your web site (default.html) must be modified to add one new link to Lab02/index.html. Do not remove the link to Lab 01.

5. Turn in:

   a. **Paper submission:** turn in the following hardcopy at the beginning of Lab03, stapled together in the following order (coversheet on top):

      i. A completed assignment coversheet. Your comments will help us improve the course.

      ii. First page of the output of the CSS validator, as run on your final Lab02/styles.css file. This is a different validator, see http://jigsaw.w3.org/css-validator/ (Note: you will have to use the "File Upload" or "Direct input" option for this to work).

   b. **Electronics submission:** Submit all Lab02 files via the online system: `submit.cs.usna.edu` by 23:59 on Thursday January 24th.

When finished, the structure of your web site should look like this: (items in blue shall undergo creation/modification during this lab):

\\midn.cyber.usna.edu\m21xxxx\public_html

default.html

Lab01/

Lab02/

index.html
newindex.html
products.html
signup.html

index.html products.html signup.html detail.html styles.css
(main page for the course; has links to each week's lab)

(page that redirects to index.html)

(optional)

(modify to use CSS and ClickJacking attack)
(modify to use CSS)
(modify to use CSS – if you had this page from Lab 02)
(new page with details on one of your products and additional CSS styling)
(new stylesheet)