CSci 4131 Internet Programming

Fall 2015

Assignment 2: Programming with JavaScript
Due Date: October 5, 2015
This assignment must be done <u>individually</u>

Goals:

In this assignment you will learn about HTML, CSS, and JavaScript programming. The primary focus of this assignment is on JavaScript. You will learn how JavaScript is used for dynamic content generation and modification on the client-side by interacting with the Document Object Model tree of the HTML document being dispalyed by the browser. You will learn the event handling model and mechanisms in JavaScript.

<u>Do not use JQuery in doing this assignment</u>.

Problem Statement:

You will create an interactive HTML page that will show photos and information about various campus buildings. It will provide slide-show like functionality to view the photos.   This page will support <u>two modes</u> of operation.

1. In the <u>manual mode,</u> it will provide buttons for the user to manually browse the information about various campus buildings.
   In this mode, the user may also click on an image thumbnail to display that image as a bigger image.
2. In the <u>slide show mode</u>, the page will automatically keep on displaying photos and   information about various campus buildings.

You will be writing an HTML page containing JavaScript code along with a separate file containing CSS style sheet commands to create an interactive campus building information page. This page should contain the following elements:

- Five Buttons: Start, Next, Previous, Start Slide Show, Stop Slide Show
- A slider based range input (using HTML5) to control the slide-show presentation rate.
- A Select element that contains the following options: "None", "Architect", "Year", and "Description" to choose the information to be displayed along with the building photo.
- Thumbnail photos of building images.
- An area to display an image of a campus building in bigger size.

Functionality:

1. Clicking the "Start" button should display the photo of the first building in the larger display area. You will also display the type of information that has been selected.
2. Clicking the "Next" button should display the image of the next building. You will also display the type of information that has been selected. Clicking "Next" button while last building is showing should move to first building.
3. Clicking the "Previous" button should display the image of the previous building. You will also display the type of information that has been selected. Clicking "Previous" button while first building is showing should move to the last building.
4. If a thumbnail image is clicked, it should be displayed in the larger image area.
5. The thumbnail images should have the size 50 by 50 pixels.

6. The larger image display area will have the size of 500 by 300 pixels.

7. When the user selects an information type from the selection menu list: The information should appear on the right side of the bigger image. The information should appear in bold and font size 20.

8. Clicking "Start Slide Show" button should start the slide show. When the last image is displayed, the slide show will continue again with the first image. When "Start Slide Show" is clicked, you should disable "Start", "Next", and "Previous" buttons. These buttons should be enabled when "Stop Slide Show" button is clicked.

9. Using the slider based range control, the user should be able to set the presentation rate from Slow (one image in 10 seconds) to Fast (one image every second).

10. When making transition from the current image to the next, the currently displayed image should gradually fade-out and the new image should fade-in. This you will do by controlling the opacity property of the displayed image.

11. While a slide show is active, it should not be possible to start another slide show. You should display an alert if the "Start Slide Show" button is clicked while the previous slide show is still active.

12. Clicking "Stop Slide Show" button should stop the slide show.

13. The specific thumbnail image that is being displayed in the bigger image area should be highlighted in red color border box. This requirement should be satisfied in both manual mode, and slide show mode.

Here are the screenshots demonstrating the campus building information HTML page corresponding to above functionality.

- **Screenshot 1:** This is the initial screen shot when no button is clicked.
- **Screenshot 2:** This is the screen shot after "Start" button is clicked.
- **Screenshot 3:** This is the screen shot after selecting "Architect" in the selection menu.. Notice that "Architect"information is being displayed.
- **Screenshot 4:** This is the screen shot after "Next" button is clicked.
- **Screenshot 5:** This is the screen shot after selecting "Year" in the selection menu.
- **Screenshot 6:** This shows a faded image when transitioning to the next image. The slide show rate is set to Fast, i.e. one photo per second.

You can download the images here, and building information here.
You can download ALL of the the images and information by clicking here for tar or compressed tar - tgz formats.
We are giving you information about ten campus buildings. You should use the following order while displaying the photos and information for the following **10** buildings:
Armory, Pillsbury Hall, Folwell Hall, Jones Hall, Pillsbury Statue, Wesbrook Hall, Nicholson Hall, Eddy Hall, Music Education, Wulling Hall.

Design Guidelines:
You can assume that the images are stored in the same directory as your HTML files.

Grading Criteria:

1. Functionality of Start, Next and Previous buttons - **15 points**
   Appropriate image and related information should be displayed as specified in the requirement above.
2. Display Information Functionality (architect, year, description)- **10 points**

3. Thumbnails are displayed and have red border for the selected current image for display in the larger window- **10 points**

4. Images have specified dimensions - **5 points**

5. Slideshow Functionality - **50 points**

    a. Functionality of Start Slide Show   (10 points) and Stop Slide Show   (5 points) - *15 points*

    b. Enabling/disabling of the buttons "Start", "Next", and "Previous" on starting/stopping of the slide show.- *5 points*

    c. Fade-out and fade-in during image transitions in the slide show.   - *10 points*

    d. Correctly controlling the rate between Slow and Fast. The display periods should be roughly around 10 second and 1 second for the two extremes of this range. - *10 points*

    e. Starting another slide show while once slide show is active should not be allowed - *5 points*

    f. If the user selects a different information type while the slide show is active, appropriate information should be displayed along with the images - *5 points*

6. HTML and CSS files should pass W3 validator check using http://validator.w3.org   (There should be no errors but warnings are acceptable.) - **5 points**

7. Proper coding style and indentation **- 5 points**

Submission Instructions:

You will submit a <u>tar file</u> of the directory containing the following files

        a. An HTML file containing and JavaScript code, and a CSS file. Name the files as assignment2.html and assignment2.css.

        b. All image files   and any other files used in your code should be included.

        c. A README file

a. It should state any special cases or exception cases that the graders should keep in consideration.