THE UNIVERSITY OF WINNIPEG

Applied Computer Science
Internet Programming
ACS-2909-001

Assignment 4

Total Marks: 30 Marks
Due date: Thursday, Dec. 8, 11:59 pm (CST)

Objectives

This assignment aims to familiarize you with the dynamic behaviour that JavaScript language can provide to a webpage. This assignment is two parts. In the first part, you will add dynamic features such as event handling upon clicking on and hovering over some existing HTML elements. In the second part, you will use XMLHttpRequest (XHR) to communicate with an external URL and retrieve values in JSON to generate new HTML elements and manipulate some other existing elements. The goal of this task is to reinforce your understanding of the client-server asynchronous communication and JSON format.

Part A (10 Marks)

You are given three files: assign4_partA.html, assign4_partA.css, and assign4_partA.js. Your task is to complete the implementation of JS code as follows.

- Add click event handlers to `h1` and `div` elements wrapping the "Abstract," "Introduction," "Contributions," and "Results." A click on an element should "toggle" its style. Toggling means that each click switches the effect from off, on, off, on, etc. Initially, none of the changes are enabled (i.e., they start as off). There are two toggling rules:
    - **For h1,** toggling will change the position to static/fixed.
    - **For the div elements mentioned above,** toggling will change the padding background colour to green/red, where the green colour has code `#1ee62f`, and the red colour has code `#e61e1e`.
- Complete `mouseover` and `mouseout` events' handlers to the `img` element and the `p` element with id= "tableId". Hovering over these two elements will have the following effects.
    - **For img,** once the mouse is over the `img`, the size becomes 20% larger than its original size, and it returns to the original size once the mouse is out. You are given a bigger image for this purpose.
    - **For p element with id= "tableId",** hovering over this paragraph will switch its background colour to blue/green, where the green colour has code #1ee62f, and the blue colour has code #0000ff.
- You must use `addEventListener` for all your event handling.
- You are not permitted to change any part of the given HTML file.

Part B (20 Marks)

Create a webpage that uses XHR to communicate with an external URL, retrieve JSON data, and generate colourful sticky notes based on the returned values. Note that we use this JSON file to demonstrate the client-server communication. The information in this file is not necessarily accurate.

- The page includes a drop-down list on the page that says "Colour:". The drop-down list consists of four colours: YELLOW (default), GREEN, PINK, and BLUE.

- The page includes a button, add_button, that says, "FETCH AND ADD NOTES".
- The page includes another button, del_button, that says, "DELETE ALL".
- You are given both HTML and CSS files, and you are not permitted to alter them.
- Your task is to create a JavaScript file called "assign4_partB.js"; place it in a directory called "partB_js"
- Clicking the add_button will trigger a `GET` XHR request to `JSON` file (data.json) located at your local machine. See the folder partB_json.
    - Parsing the response JSON data generates one object with 8 properties of type object, each of which has two `String` properties and one `Number` property. Consequently, there will be 8 sticky notes (one for each object) with a background colour matching the “color” property in each object.
    - The text on a sticky note has the following format: `key +" ("+year +")<br> "+ title +”.<br> <br>”`
- Clicking the del_button will delete all available sticky notes.

Note: the attached video demonstrates the assignment's requirements and all the dynamic features of the two parts.

Submission Instructions
Zip all files and folders into a single archive named *StudentNumber_Assignment4.zip*. Submit the zip file through Nexus.