

SYSC 4504: Fundamentals of Web Development

Programming Assignment 2: JavaScript and DOM

Due: November 3, noon

Assignment Description

Assignment 2 is based on another of the running end-of-chapter projects, the CRM Admin case study. An initial set of files is provided as ZIP archive on Brightspace, containing `assignment2.html` and a number of subdirectories with (hopefully) obvious names and purpose. When you open `assignment2.html` in a web browser, it should look as follows (here using Microsoft Edge):

The screenshot shows a web browser window with the title "Assignment 2". The address bar shows the file path: `C:/Users/tk/Documents/Web%20Development/Assignment`. The web application has a dark blue header with the text "CRM Admin" in white. Below the header is a section titled "Event Planner" in a lighter blue bar. The main content area features a calendar for "October 2014". The calendar is a table with days of the week as columns and dates as rows. The date "14" is highlighted in a dark blue box. Below the calendar are navigation links for "[« Sep](#)" and "[Nov »](#)". Below the calendar is a section titled "Meeting Details" in a dark blue bar. This section contains a form with the following fields: "Client Name" with a text input field containing "Enter name"; "First Meeting?" with a checkbox; "Client Type" with three radio buttons labeled "School", "College", and "University"; "Meeting Date" with a text input field containing "yyyy - mm - dd" and a calendar icon; and a "Submit" button. At the bottom of the page are two buttons: "Highlight Nodes" and "Hide Highlight".

October 2014						
S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	
« Sep						Nov »

Meeting Details

Client Name:

First Meeting? ☐

Client Type: ☐ School ☐ College ☐ University

Meeting Date:

In this assignment, you need to write JavaScript code that **recursively** iterates the DOM and visually identifies the tag names of all elements on the page. More specifically:

1. Examine `assignment2.html` in the browser and an editor. You will add event handlers to the two buttons at the bottom of the page. You will not need to make any changes to the supplied markup or CSS. All of your event handlers must execute only after the page has loaded.
2. The handler for the `Highlight Nodes` button should navigate every element in the DOM, and for each element within the body, determine whether it is an element node (`nodeType == 1`) element.
3. If it is an element node, add a new child node to it. This child node should be a `` element with `class=hoverNode` as attribute. Its `innerText` should be equal to its parent's tag name.
4. Add an event listener for this child node so that when the user clicks on the new span, an alert popup displays the following information about its parent node: `id`, `tag name`, `class name`, and `innerHTML`.
5. The `Highlight Nodes` button should hide when the user clicks on it. The `Hide Highlight` button should then be displayed. When the page is first displayed, the `Hide Highlight` button should be hidden.
6. When the user clicks the `Hide Highlight` button, all the `` elements with `class=hoverNode` should be removed. The `Hide Highlight` button should then be hidden and the `Highlight Node` button should be displayed.

So once you implemented your solution, you should be able to do/see the following. Initially, when loaded, the page will look as follows:

Assignment 2

File | C:/Users/tk/Documents/Web%20Development/Assignme

CRM Admin

Event Planner

October 2014

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	
« Sep						Nov »

Meeting Details

Client Name:

First Meeting? ☐

Client Type: ☐ School ☐ College ☐ University

Meeting Date:

After clicking on Highlight Nodes, the page will look as follows:

Assignment 2

File | C:/Users/tk/Documents/Web%20Development/Assign

CRM Admin

Event Planner

October 2014

S	TH	M	TH	T	TH	W	TH	T	TH	F	TH	S	TH
							1	2	3	4			
5	6	7	8	9	10	11							
12	13	14	15	16	17	18							
19	20	21	22	23	24	25							
26	27	28	29	30	31								
« Sep												Nov »	

Meeting Details

Client Name: Enter name

First Meeting? ☐

Client Type: ☐ School ☐ College ☐ University

Meeting Date: yyyy-mm-dd

Hide Highlight

Once the user clicks on the `BUTTON` element (next to `Hide Highlight`), the following alert box will pop up:

The screenshot shows a web browser window with the address bar displaying the file path: `C:/Users/tk/Documents/Web%20Development/Assignments/Assignment%202/Solution/assignment2.html#`. The page has a dark header with "CRM Admin" and a sidebar with "Event Planner". The main content area features a calendar for October 2014. The calendar table has a caption "October 2014" and a tbody with rows for each day. The date 14th is highlighted. Below the calendar is a "Meeting Details" form with fields for Client Name, First Meeting?, Client Type, and Meeting Date. At the bottom of the page, there is a "Hide Highlight" button and a "MAIN" button. An alert box is open on the right side of the page, displaying the following information:

```

This page says
Tag:BUTTON
Class:
ID:hide
innerHTML:Hide Highlight<span class="hoverNode"> BUTTON </span>
  
```

The alert box has an "OK" button.

Once the user clicks on `Hide Highlight`, we are back to the page we saw when `assignment2.html` was first loaded.

Submission Requirements

Submit your assignment using Brightspace, under Assignment 2 Submission for the course. You only need to submit your `assignment2.js` file, as this is the only file where you made changes. The TAs will combine this file with the remaining files given to you, using the directory structure in the initial ZIP file, and test your submission.

Marks will be based on:

- Completeness of your submission
- Correct solution to the problem, including the proper use of recursion
- Adhering to the submission requirements

The due date is based on the time of the Brightspace server and will be strictly enforced. If you are concerned about missing the deadline: multiple submissions are allowed. So you can always submit a (partial) solution early, and resubmit an improved solution later. This way, you will reduce the risk of running late, for whatever reason (slow computers/networks, unsynchronized clocks, failure of the Internet connection at home, etc.).