

SOEN287 – Fall 2018

Assignment #3

Due Date: By 11:59 PM Friday **November 9th**, 2018

Evaluation: 4% of final mark (see marking rubric at the end of handout)

Late Submission: none accepted

Purpose: The purpose of this assignment is to help you learn the JavaScript and HTML documents, and dynamic documents with JavaScript.

CEAB/CIPS Attributes: This assignment is primarily evaluating your use of JavaScript and HTML, and dynamic documents with JavaScript. (Use of engineering tools).

Question #1

Write a JavaScript script called "CharacterOccurrences.js" that inputs several lines of text and 2 consecutive characters and determines the number of occurrences of this pattern in the text.

- A) You have to declare in your HTML form four (05) ids :
- "searchString" as textarea id in paragraph with 4 rows and 55 columns
 - "characters" as input id in paragraph with text type and size equal 5
 - "searchButton" as input id in paragraph with button type and its value equal to "Search"
 - "Reset" as input id in paragraph with button type and its value equal to "Startover". (hitting this button clears the form information entered by user)
 - "output" as id in paragraph is for the final result.
- B) The JavaScript file (CharacterOccurrences.js) the following function:
- The function **searchOccurrences()** with the following information:
 - Global variables :
 - searchStr** to get the id of "searchString"
 - ch** to get the id of "characters"

- iii. **outResult** to get the id of "output"
- c.
- d. The function **searchOccurrences()** to search the characters pattern (2 consecutive characters) that we are looking for and count the number of occurrences of that pattern.
 - i. local variables: As many as required
 - ii. Use the functions: `charAt()`.
 - iii. If the number of pattern occurrence in the text is equal to 0 (zero) displays this message:
*"The characters pattern **ch** was not found"*
Otherwise displays the result.

Here is 2 sample outputs to illustrate the expected behavior of your program:

Enter your text here :

`SOEN287 is the coolest coolest course I have ever taken.`

Enter a character you want to search for :

Results:

2 occurrence(s) of 'oo' found

Enter your text here :

`I love web programming!`

Enter a character you want to search for :

Results:

The characters pattern 'po' was not found

Question #2

Write a javascript for an ATM withdrawal application. The ATM machine will only accept a transaction if the withdrawal amount X is a multiple of 20, and account has enough balance to perform withdrawal transaction (including bank charges). For each successful withdrawal the bank charges 0.50\$. The account will have an initial balance of 400\$.

A) You have to declare an input type and a button in your HTML form with input type having a placeholder

Question 2

B) Javascript file (Q2.js) has 2 functions validateAmount and withdrwawAmount

- a. validateAmount: Make sure the amount entered is numeric, alert a message "Please enter numeric value" otherwise.
- b. withdrawAmount: Process transaction and **alert** one of the following three messages depending on the withdrawal amount
 - i. Not multiple of 20: "Incorrect withdrawal amount"
 - ii. "Insufficient funds"
 - iii. "Successful transaction! \n Current Balance is: " + balance

Question #3

You have a server-side script called "Ampersands.js" that cannot handle any ampersands (&) in the form data. Write a script to convert all ampersands to " and " in the form field when the field loses **focus** element (**blur**).

A) Your script contains one (01) variable and two (02) functions:

1. Global variable: dom.
2. The function **getElementAmpersand()** that reads the field element by using the existing function *getElementById()* to access to the element using its id ("field") specified in your HTML file by using the function *addEventListener()* to register the event handler, which takes three (03) arguments : (a) the name of event as a string literal (here use "**blur**"), (b) the handler function convertAmpersands, and (c) the Boolean value false.

3. The function "**convertAmpersands()**" that converts all ampersands in the form field to " and " when the field loses focus ("**blur**").
 4. The html document called "*Ampersand.html*", which invokes the "*Ampersand.js*" in the head section.
- B) At the end of the JavaScript file, finish with this line to fire the load event when a resource and its dependent resources have finished loading:
- ```
window.addEventListener("load", getElementAmpersand, false);
```

Here is a sample output to illustrate the expected behavior of your program:

The screenshot shows a web browser window with a menu bar (File, Edit, View, History, Bookmarks, Tools, Help). The page content includes the instruction "Enter some text that includes at least one & then click outside the input box". Below this is an input field containing the text "SC&SE". Further down, the text "Result is" is displayed, followed by the same instruction and an empty input field.

This screenshot shows the same web browser window after the 'blur' event has been triggered. The input field now displays "SC and SE", where the ampersand has been converted to the word "and". The rest of the page content remains the same.

## **Question #4**

Copy and paste the following HTML code into a new document:

```
<!DOCTYPE html>
<html>
<head>
<title>Q4</title>
</head>
<body>
 <div id="container">
 <h2>Order Your Food Online</h2>
 <form action="" id="frm">
 <fieldset>
 <table border="0">
 <tr>
 <th>Item</th>
 <th>Quantity</th>
 <th>Price</th>
 </tr>
 <tr>
 <td>Pizza</td>
 <td><input type="text" size="3" id="pizza" /></td>
 <td>$19.5</td>
 </tr>
 <tr>
 <td>burger</td>
 <td><input type="text" size="3" id="burger" /></td>
 <td>$15.5</td>
 </tr>
 <tr>
 <td>Salad</td>
 <td><input type="text" size="3" id="salad" /></td>
 <td>$10.00</td>
 </tr>
 <tr>
 <td>Soup</td>
 <td><input type="text" size="3" id="soup" /></td>
 <td>$5.00</td>
 </tr>
 </table>

 <input type="submit" value="Place Order" id="sub"/>
 </fieldset>
 </form>
 </div>

 <script type="text/javascript" src="Q4.js"></script>
</body>
</html>
```

a) Write JavaScript code (Q4.js) that is executed during form submission to calculate the cost of each item (based on quantity specified) entered the online form and the overall total cost. The results should be displayed on the same page under the form submission button.

All JavaScript code must be external. If any fields are left blank or do not contain a number, an alert box should display an appropriate error message upon form submission.

b) The following style rules must be implemented using an external CSS. Ensure that the stylesheet is properly referenced in the HTML code

- All text in the page must be displayed in *MediumBlue*.
- The background color of the form is *LightSteelBlue*.
- The input form should have a fixed width of 540 pixels.
- The input form should be surrounded by a *red* border and the distance from the content to the border should be 10 pixels.

The resulted page looks like as the following.

## Order Your Food Online

Item	Quantity	Price
Pizza	<input type="text" value="1"/>	\$19.5
burger	<input type="text" value="2"/>	\$15.5
Salad	<input type="text" value="1"/>	\$10.00
Soup	<input type="text" value="1"/>	\$5.00

Pizaa (Quantity = 1): \$19.5  
Burger (Quantity = 2): \$31  
Salad (Quantity = 1): \$10  
Soup (Quantity = 1): \$5

**Final Total: \$65.5**

## Question #5

The running problem to build a website of cottage a search (To be continued in Assignment 4). We resume the Cottage Search Web site in Assignment 1.

Please create another section called “Expert suggestion” after the section of “What you are looking for”. Style it properly and make it invisible at first. Once the user’s selections meet the following criteria, use JavaScript to insert the suggested text into this section and make it visible.

- If the Number of Bathroom/Bedroom is 2/5 and the selected location is Quebec City, show the expert suggestion: “It is very difficult to find a cottage with this size at Quebec city
- Note: make sure the search type is “button”
- Here is the sample output:



**Cottage Search Form**

**Renter(s) Information**

How many people will come to this cottage?

Smoker? ☐ Yes ☐ No

Any pets?

☐ Cat(s)

☐ Dog(s)

☐ Other Specify:

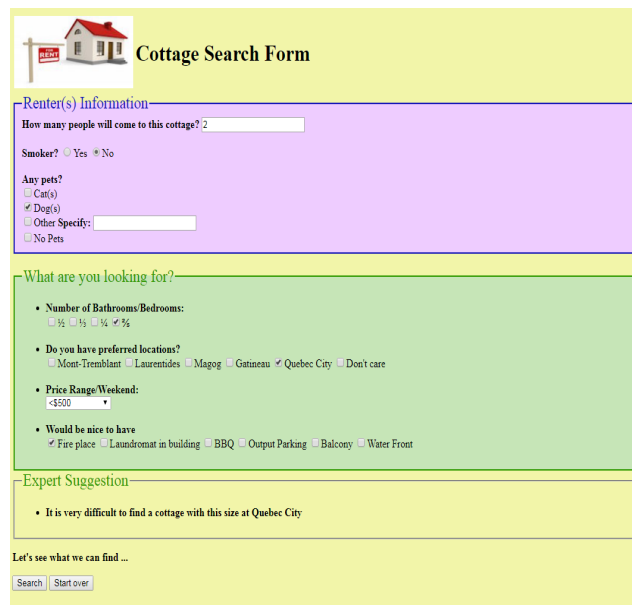
☐ No Pets

**What are you looking for?**

- Number of Bathrooms/Bedrooms:  
☐ 1/1 ☐ 1/2 ☐ 2/2 ☐ 3/3
- Do you have preferred locations?  
☐ Mont-Tremblant ☐ Laurentides ☐ Magog ☐ Gatineau ☐ Quebec City ☐ Don't care
- Price Range/Weekend:
- Would be nice to have  
☐ Fire place ☐ Laundromat in building ☐ BBQ ☐ Output Parking ☐ Balcony ☐ Water Front

Let's see what we can find ...

a) Initial form



**Cottage Search Form**

**Renter(s) Information**

How many people will come to this cottage?

Smoker? ☐ Yes ☒ No

Any pets?

☐ Cat(s)

☒ Dog(s)

☐ Other Specify:

☐ No Pets

**What are you looking for?**

- Number of Bathrooms/Bedrooms:  
☐ 1/1 ☐ 1/2 ☐ 2/2 ☒ 3/3
- Do you have preferred locations?  
☐ Mont-Tremblant ☐ Laurentides ☐ Magog ☐ Gatineau ☒ Quebec City ☐ Don't care
- Price Range/Weekend:
- Would be nice to have  
☒ Fire place ☐ Laundromat in building ☐ BBQ ☐ Output Parking ☐ Balcony ☐ Water Front

**Expert Suggestion**

- It is very difficult to find a cottage with this size at Quebec City

Let's see what we can find ...

b) after filling the form and hitting the search button

## Submitting Assignment #3

- Zip the source code (HTML and JavaScript files only please) of this assignment.
- Naming convention for zip file: Create one zip file, containing all source code files for your assignment using the following naming convention:
  - The assignment is done individually:  
 The zip file should be called *a#\_studentID*, where # is the number of the assignment *studentID* is your student ID number. For example, for the first assignment, student 123456 would submit a zip file named *a3\_123456.zip*
- For submission instructions please refer to the course web page.
- Assignments not submitted to the correct location or not in the requested format will not be graded.
- Submit only ONE version of an assignment. If more than one version is submitted the *last one will be graded* and all others will be disregarded.

## Evaluation Criteria of Assignment #3 (20 points)

HTML Document with JavaScript source code	
<b>Question #1 (3.5 pts.)</b>	
HTML form four (05) ids	1 pt.
Function searchOccurrences()	2 pts.
Display the result	0.5 pt.
<b>Question #2 (4 pts.)</b>	
HTML form	1 pt.
Function validateAmount()	1.5 pts.
Function withdrawAmount()	1.5 pts.



<b>Question #3 (4.5 pts.)</b>	
HTML form one (01) id	0.5 pt.
Global variables& register the event handler	1 pt.
Function getElementAmpersand()	1 pts.
Function convertAmpersands()	1.5 pts.
Display the result	0.5 pt.
<b>Question #4 (5 pts.)</b>	
CSS file	1
Calculate the sum	1.5pts.
Display the result	1.5 pts.
Validation	1 pt.
<b>Question #5 (3 pts.)</b>	
checked values test and changing the visibility	1.5 pts.
Display the result& event handler	1.5 pts.