

Concordia University
SOEN 287: Web Programming 1 – Fall 2016
Assignment 3

Due Date: By 11:55pm, Nov 13, 2016

Evaluation: 6% of final mark

Late Submission: none accepted

Type: Individual Assignment

Purpose: The purpose of this assignment is to have you practice JavaScript and use JavaScript to operate on DOM model

Exercise 1: Code JavaScript

All your JavaScript functions must be declared in the document head section and each functions name must be as specified below. To demonstrate the functionality of each method, you must make function calls in the document body. Include a heading (h1... h6) that indicates which function is being tested before each function demonstration. The use of Global Variables is forbidden!

A. **Function:** addNumbers

Parameter(s): Array of numbers

Each element in the array must be added and the summation (answer) must be returned.

B. **Function:** getCurrentDate

Parameter(s): None

Retrieve the current date in the format similar to: *Monday, May 10, 2010* and return it.

C. **Function:** arrayToString

Parameter(s): Array of words

All the elements of the array must be concatenated into a single string and returned.

D. **Function:** findMaxNumber

Parameter(s): None (Hint: Make use of the arguments array – page 167 in course book)

From the arguments array, find the number element that is the largest and return it.

E. **Function:** getDigits

Parameter(s): A String

Scan the string and find all the digits (0-9), concatenate them into a string in the order that they are found and return the string of numbers.

F. **Function:** reverseString

Parameter(s): A String

Reverse the entire string (character by character) and return the resulting string.

Exercise 2: Temperature Units Converter

You are asked to design a Temperature Units Converter webpage which can convert between Celsius, Fahrenheit and Kelvin formats. As shown in Figure 2, a user can enter a temperature value in the first input box labeled “Enter Temperature” and select a temperature unit for the input from a drop-down option list with three options: “C” (Celsius), “F” (Fahrenheit) and “K” (Kelvin). Once a unit is selected for the input and the “Convert” button is clicked, the input temperature is converted to the other two units. The results are shown in the second input box labeled “Result”. For example, if the input is 32 and option “C” (Celsius) is selected for the input, once the “Convert” button is clicked, the result should come with its corresponding Fahrenheit “F” and Kelvin “K” value in the second input box: “89.6F = 305.15K”.

Temperature Converter



Hint: Temperature conversion formulas can be found in the following table.

| From | To Fahrenheit | To Celsius | To Kelvin |
|----------------|---------------------------|------------------|---------------------------|
| Fahrenheit (F) | F | $(F - 32) * 5/9$ | $(F - 32) * 5/9 + 273.15$ |
| Celsius (C) | $(C * 9/5) + 32$ | C | $C + 273.15$ |
| Kelvin (K) | $(K - 273.15) * 9/5 + 32$ | $K - 273.15$ | K |

Exercise 3

Given the following XHTML page:

```
<html>
  <head>
    <title>Exercise 3</title>
  </head>
  <body>
    <p><strong>User Information:</strong></p>
    <div id="content"></div>
  </body>
</html>
```

Create an embedded JavaScript function named `getUserInfo` that prompts the user with the following two questions after the XHTML page has loaded:

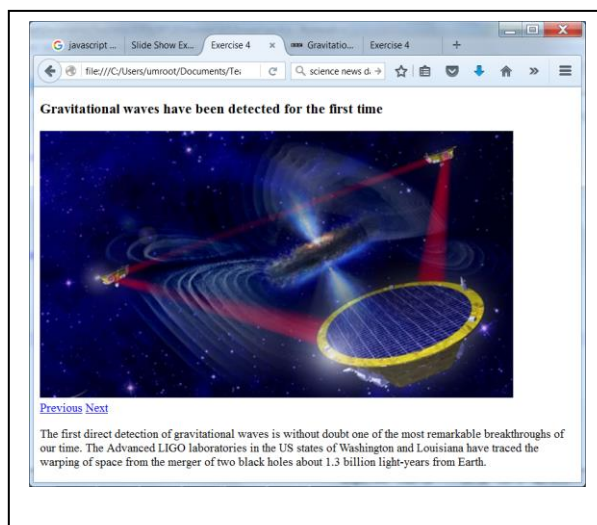
- What is your full name?
- How old are you?

The function should then build a string in the form of:

Hi, my name is *FULL-NAME* and I'm *XX* years old.

Exercise 4: A simple slide show

Slide show is normally implemented by JavaScript. Here is a simple one. This page shows news about gravitational wave discovery. Under the image, there are two links. When you click on the link, the image changes to the next image. Please implement this slide show.



The text and the images used for this exercise are from a BBC news report on Feb 11, 2016. The link <http://www.bbc.com/news/science-environment-35523676>. Just for classroom use.

Exercise 5:

Following are the additions for the Website started in assignment 2

- 1) **Date and Time:** In the header area of your website, use JavaScript to display the current date and time. The Time should automatically refresh every second.
- 2) **Browse available goods:** Create a Browse available goods page linked from the side menu. Inside the content area of this page, create a list of goods. Include an image, along with the description of goods. Make sure the format of the page is easy to read and that the look is consistent with the rest of your site.
- 3) **Have something to sell:** The form was created in the previous assignment. In this assignment you are asked to use JavaScript to do client-side validation. When the forms submit button is pressed you should check that no fields is left blank and that the email

provided is in valid format. Hint: Regular Expressions are your friend, but you should look up what a valid format for an email is.

Note:

- 1) Although it is not a functional requirement, your site should always be well organized with properly named files and well defined directories.
- 2) All CSS should be in external files.
- 3) It can be very difficult to achieve the same look and feel across all browsers. Obviously it is preferable to have the site look good across all major browsers (ie: Internet Explorer, Firefox, Chrome, Safari...) but for the sake of this course just focus on building the website so that it is compatible best with one browser.

| | |
|---|---|
| Question 1 – 6 points | |
| a) addNumbers() | 1 |
| b) getCurrentDate () | 1 |
| c) arrayToString () | 1 |
| d) findMaxNumber() | 1 |
| e) getDigits() | 1 |
| f) reverseString() | 1 |
| Question 2 - 4 points | |
| a) Temperature Converter form | 1 |
| b) Calculate & display result | 3 |
| Question 3 - 2 points | |
| Prompt user and imbed string | 2 |
| Question 4 - 2 points | |
| Implement simple slide show | |
| Question 5 - 6 points. | |
| a) Date and time in header | 2 |
| b) Browse available commodity | 2 |
| c) Validate input for <i>Have something to sell</i> page | 2 |