

JavaScript Assignment 1

The objectives in this tutorial will be:

- 1) to begin programming in JavaScript,
- 2) to become familiar with embedded JavaScript,
- 3) to declare variables and assign values to them
- 4) to execute problems using arithmetic operators
- 5) to understand order of execution

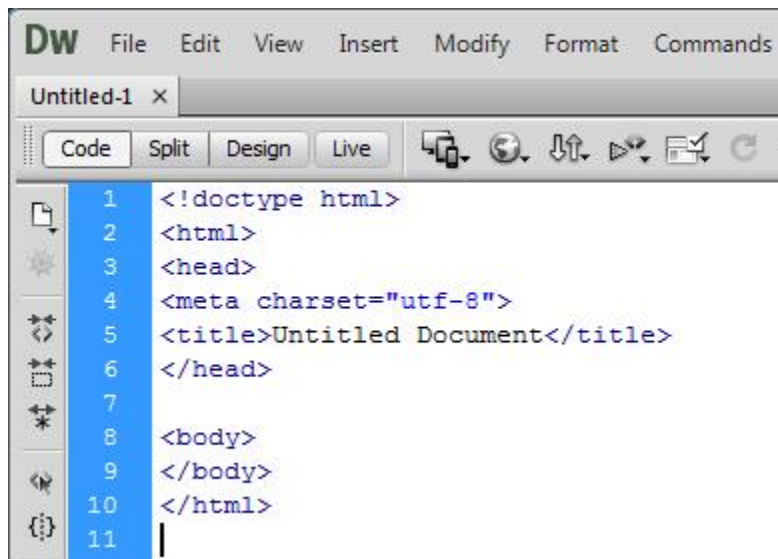
Finished documents:

- 1) *javaScriptAssignmentA.html*
- 2) *javaScriptAssignmentB.html*
- 3) *javaScriptAssignmentC.html*

Creating Embedded JavaScript

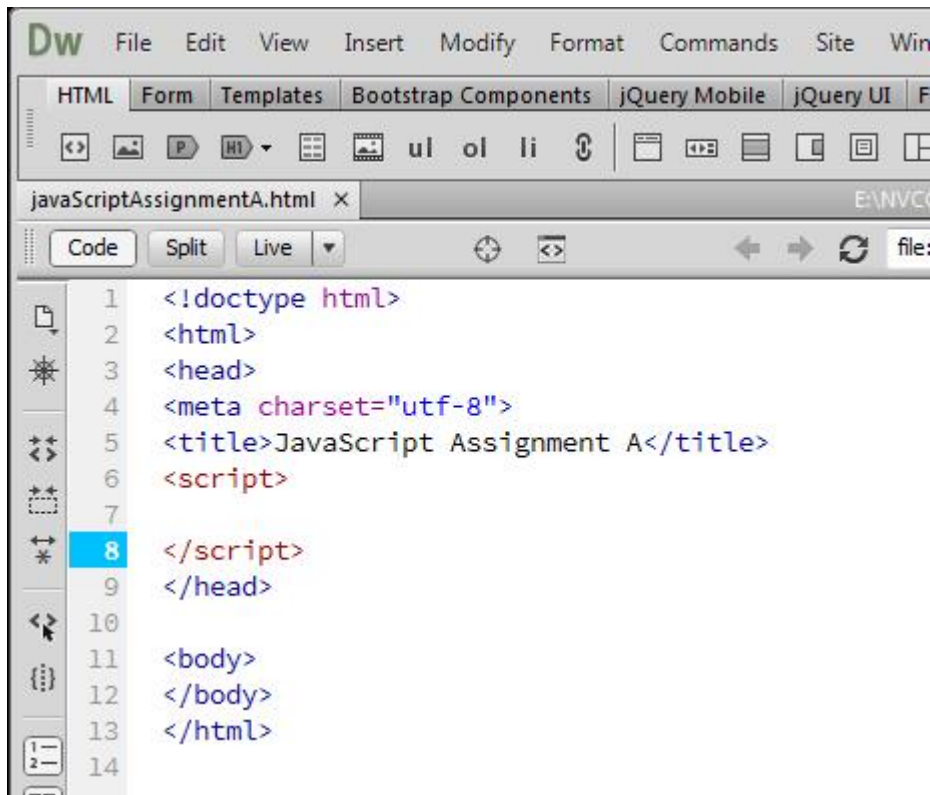
The Embedded JavaScript will be contained in the **<head>** element.

- 1) Open a new HTML5 document:

A screenshot of the Adobe Dreamweaver (Dw) interface. The window title is 'Untitled-1'. The menu bar includes 'File', 'Edit', 'View', 'Insert', 'Modify', 'Format', and 'Commands'. The workspace shows a code view of a new HTML5 document template. The code is as follows:

```
1 <!doctype html>
2 <html>
3 <head>
4 <meta charset="utf-8">
5 <title>Untitled Document</title>
6 </head>
7
8 <body>
9 </body>
10 </html>
11 |
```

- 2) In the **<title>** element, type *JavaScript Assignment A*.
- 3) Save the file as *javaScriptAssignmentA.html*. Be sure to create a folder for this file and the other files you will be creating in this assignment.
- 4) Within the **<head>** element, type in the **<script>** element as follows:



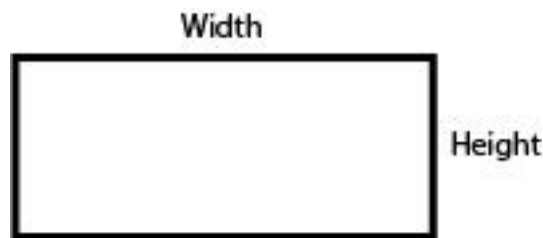
```
1 <!doctype html>
2 <html>
3 <head>
4 <meta charset="utf-8">
5 <title>JavaScript Assignment A</title>
6 <script>
7
8 </script>
9 </head>
10
11 <body>
12 </body>
13 </html>
14
```

Within this `<script>` element is where the JavaScript programming will take place. This style of JavaScript programming is embedded because it is located within the `<head>` element.

Declaring and Manipulating Variables

A variable is a defined memory allocation which stores a value that JavaScript can reference at any time. The name of the variable enables JavaScript to access that particular memory allocation in order to access and change the value within that memory allocation.

In the current webpage, a JavaScript program will be created to calculate the perimeter of a rectangle/square given the width and the height of the shape.



- 5) In the current document, declare a variable `width` and assign a numerical value to the variable.

```
<title>JavaScript Assignment A</title>
<script>
var width = 5;

</script>
```

- 6) Declare a variable **height**, and assign a numerical value to this variable:

```
<title>JavaScript Assignment A</title>
<script>
var width = 5;
var height = 2;

</script>
```

- 7) Declare a variable **perimeter**. Type in the JavaScript for the formula of finding the perimeter of the rectangle and store that into **perimeter** as follows:

```
<title>JavaScript Assignment A</title>
<script>
var width = 5;
var height = 2;
var perimeter = 2*width + 2*height;
</script>
```

Note: The following alternative can be typed instead:

```
var perimeter = width + width + height + height;
```

- 8) Save and test the page.

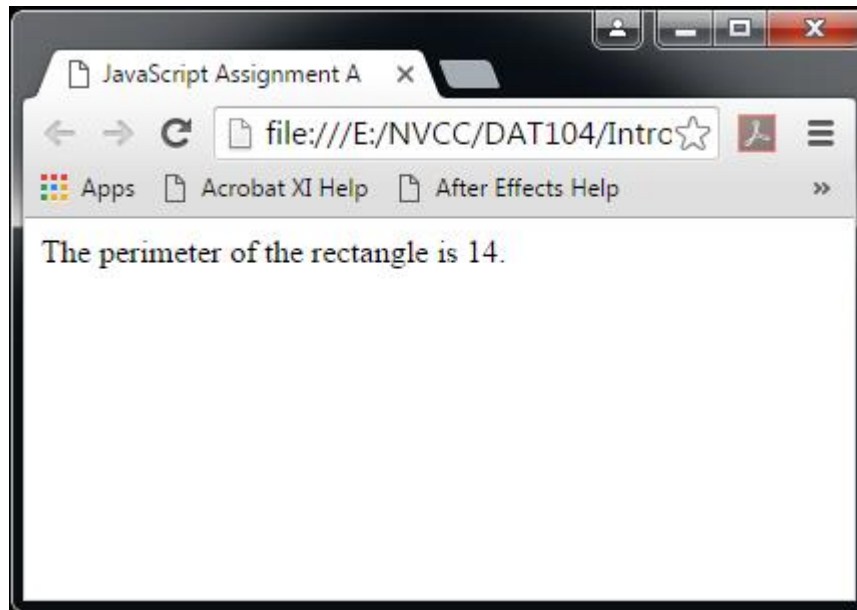
At this point, you will see a blank webpage. The perimeter of the rectangle has been calculated, but the value is not showing. A **document.write** method needs to be added to display the results.

- 9) Add the following JavaScript:

```
<script>
var width = 5;
var height = 2;
var perimeter = 2*width + 2*height;
document.write("The perimeter of the rectangle is " + perimeter + ".");
</script>
```

- 10) Save your work and test the webpage.

A result should display at this point



If an incorrect display occurs (which includes the possibility of a wrong answer), there is an error in your JavaScript. Make the necessary corrections in the JavaScript **NOW** before moving on.

- 11) Experiment with other values for **width** and **height**, and checking to see if the correct answers are displaying. Save your work when you are done.

At this point, *javaScriptAssignmentA.html* should be completed.

- 12) Resave your work with *javaScriptAssignmentB.html* as a new file name. Close *javaScriptAssignmentA.html*.

- 13) Change *javaScriptAssignmentB.html* to calculate the area of the rectangle (recall that the area of the rectangle is equal to the product of its width and height). Be sure to save and test your work.

- 14) Create a new HTML document and save the document as *javaScriptAssignmentC.html*. Have this document calculate the circumference and the area of a circle given the radius. Be sure the answer displays in the browser. Use the value for pi and formulas indicated below:

$$\text{pi} = 3.14159$$

$$\text{circumference} = 2 * \text{pi} * \text{radius}$$

$$\text{area} = \text{pi} * \text{radius} * \text{radius}$$