



# CP 160 - Web Programming and Design

## Lab 12: JavaScript and jQuery Basics

### Hands-On Practice 1: JavaScript Basics

In this Hands-On Practice, you will create a simple script with an **alert** message box.

1. Launch a text editor and type in / copy the following HTML and JavaScript code.

```
<!DOCTYPE html>
<html lang="en">
<head>
  <title>JavaScript Practice</title>
  <meta charset="utf-8">
</head>
<body>
<h1>Using JavaScript</h1>
<script>
alert("Welcome to my web page!");
</script>
<script>
  document.write("<p>Using document.write to add text</p>");
  document.write("<h2>Notice that we can add HTML tags
too!</h2>");
</script>
<h3>This document was last modified on:
<script>
  document.write(document.lastModified);
```

```
</script>
</h3>
</body>
</html>
```

2. Save this file as **alert.html**. Launch browser and open your page in the browser.

## Hands-On Practice 2: JavaScript Variables

Sometimes we need to be able to collect information from the user. A simple example is prompting the user for a name and writing the name to the document. We would store the name in a **variable**.

**Part 1:** You will declare a variable, assign string data to it, and write it to the document

1. Open a text editor and type/copy the following code:

```
<!DOCTYPE html>
<html lang="en">
<head>
  <title>JavaScript Practice</title>
  <meta charset="utf-8">
</head>
<body>
<h1>Using JavaScript</h1>
<h2>Hello
<script>
  var userName;
  userName = "Guest";
  document.write(userName);
</script>
</h2>
</body>
</html>
```

2. Save this file as **var.html**. Launch browser and open your page in the browser.
3. Change the code in var.html, `document.write(userName);` to be  
`document.write("<h2>Hello " + userName + "</h2>");`
4. Delete `<h2>Hello` and `</h2>` in var.html.
5. Save this file as **var2.html**. Launch browser and open your page in the browser.
6. Do var.html and var2.html display the same in the browser?

**Part 2:** Collecting Variable Values Using a Prompt. You will use the `prompt()` method to gather data from the user and write it to the document.

7. Modify the script part of var2.html with the following code:

```
<script>
    var userName;
    userName = prompt("Please enter your name");
    document.write("<h2>Hello " + userName + "</h2>");
</script>
```

8. Save this file as **var3.html**. Launch browser and open your page in the browser. The prompt box will appear and you can type a name in the input box and click the OK button.
9. Let's do a variation on this and allow the user to type a color name. The user's preference will be used as the background color of the document. We will use the `bgColor` property of the document object and set it to the user's color preference. Be sure that an uppercase C is used when typing `bgColor`.

Edit/change var3.html with the following code:

```
<script>
    var userColor;
    userColor = prompt("Please type the color name, e.g., blue or red");
    document.bgColor = userColor;
</script>
```

10. Save the document as **var4.html** and display it in the browser. You can input red, blue or other colors. You should notice the background color change immediately.

## Hands-On Practice 3: Programming basics in JavaScript

JavaScript can use some arithmetic operators, +, -, \*, /, =, etc. The if control structure can be used for decision making. The comparison operators are, ==, >=, <=, >, <.

In this Hands-On Practice, you will code a quantity input example. The user will be prompted for a quantity and must enter a quantity greater than 0. We will assume that the user will enter a number. If the user enters a value of 0 or a negative number, there will be an error message displayed. If the user enters a value greater than 0, a message will be displayed thanking the user for the order. We will use a prompt and will write messages to the document.

1. Open a text editor and enter/copy the following:

```
<!DOCTYPE html>
<html lang="en">
<head>
  <title>JavaScript Practice</title>
  <meta charset="utf-8">
</head>
<body>
<h1>Using JavaScript</h1>
<script>
var quantity;
quantity = prompt("Type a quantity greater than 0");
if (quantity <= 0) {
  document.write("<p>Quantity is not greater than 0.</p>");
  document.write("<p>Please refresh the web page.</p>");
} else {
  document.write("<p>Quantity is greater than 0.</p>");
}
</script>
</body>
</html>
```

2. Save this document as **quantityif.html** and display it in a browser. When the prompt box appears, type the number 0 and click the OK button. You should see the error message you have created in the browser window. Now, refresh the page and enter a value greater than 0.

## Hands-On Practice 4: Functions in JavaScript

A function is a block of JavaScript statements with a specific purpose that can be run when needed. A function can contain a single statement or a group of statements and is defined as

```
function function_name() {  
    ... JavaScript statements  
}
```

Function definitions are typically placed in the head section of the HTML document.

1. Open a text editor and enter/copy the following code: (notice the function definition in it)

```
<!DOCTYPE html>  
<html lang="en">  
<head>  
    <title>JavaScript Practice</title>  
    <meta charset="utf-8">  
    <script>  
        function promptQuantity() {  
            var quantity;  
            quantity = prompt("Please type a quantity greater than 0");  
            if (quantity <= 0) {  
                alert("Quantity is not greater than 0.");  
            } else {  
                alert("Thank you for entering a quantity greater than 0.");  
            } // end if  
        } // end function promptQuantity  
    </script>  
</head>
```

```

<body>
<h1>Using JavaScript</h1>
<input type="button" value="Click to enter quantity"
onclick="promptQuantity();" >
</body>
</html>

```

2. Save the document as **function.html** and display it in a browser. Click the button to test the script. Be sure to test for a value larger than 0 and a value of 0 or less.

## Hands-On Practice 5: jQuery basics

The best way to learn to use jQuery is to practice coding. You'll work with the `click()` and `toggle()` methods in this Hands-On Practice. You'll configure CSS to initially hide a block of text by setting the `display` property to `none`. Then, you'll use jQuery to bind a click event to an event handler that will toggle back and forth between displaying and hiding a block of text.

1. Open a text editor and enter/copy the code shown below.

```

<!DOCTYPE html>
<html lang="en">
<head>
<title>jQuery Toggle Practice</title>
<meta charset="utf-8">
<style>
  #details { display: none; }
</style>
<script
src="https://ajax.googleapis.com/ajax/libs/jquery/3.2.1/jquery.m
in.js">
</script>
<script>
  $(document).ready(function() {
    $('#more').click(function() {
      $('#details').toggle();
    });
  });

```

```

</script>
</head>
<body>
<h1>jQuery</h1>

<p>Many websites, including Amazon and Google, use jQuery, to
provide interaction and dynamic effects on web pages. <a
href="#"id="more">More</a></p>

<div id="details"><p>The jQuery API (application programming
interface) works along with JavaScript and provides easy ways to
dynamically manipulate the CSS properties of elements, detect
and react to events (such as mouse movements), and animate
elements on a web page, such as image slideshows.</p>

</div>
</body>
</html>

```

2. Save this file as **toggle.html** and open it in the browser. As shown in Figure 1, the second paragraph does not initially display. Click on the “More” hyperlink to display the second paragraph. Next, click on the “More” hyperlink again to hide the second paragraph. The “More” hyperlink works as a toggle to hide and show the div assigned to the id details.

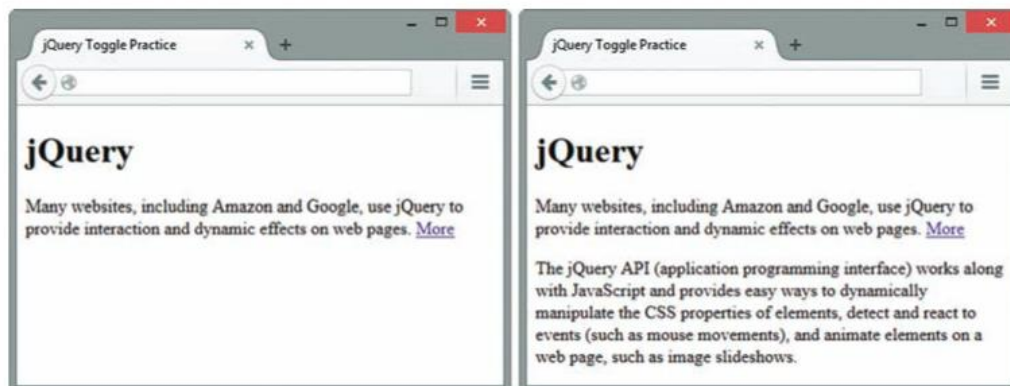


Figure 1

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## Completion / Submission:

1. Complete all the lab practices. Take the screenshots of your completed webpages.
2. Create a one-paragraph conclusion of what you have learned during the lab today.
3. Answer the following questions:
  - a. Describe 3+ popular uses for JavaScript.
  - b. Describe the two ways the web developers can obtain the jQuery JavaScript Library

Put everything into a single file; Submit to **Blackboard -> CP160 -> Assessments -> Lab 12 / Assignment 12**; due date: today.

Homework: No.