FIT 100

Lab 8

Extending HTML with JavaScript

In this lab you will be writing practice HTML pages containing JavaScript. Much of the lab has you working through ideas presented in Lecture 11. Refer to it and to Chapter 18.

1. **Create an Initial Page.**
   - Using Notepad, type in the following program, which was shown in the lecture. As you enter the HTML/JS, notice which parts are HTML and which are JavaScript.

   ```
   <html>
     <head>
       <title>My Test Page</title>
     </head>
     <body>
      The sum of 2.0 + 2.0 is
      <script language="JavaScript">
       alert(2.0 + 2.0);
      </script>
     </body>
   </html>
   ```

   - Save and run the program, and notice that the browser is not finished loading when it stops to print out the alert() message.

2. **Revise the Program of Step 1.**
   - Change the alert() command of the above program to a document.write(), an operation that inserts into the source file the result of executing (running) the computation of its argument (the stuff inside the parentheses). [Arguments are discussed Friday.] This revision was also shown in class. The text should be

   ```
   <html>
     <head>
       <title>My Test Page</title>
     </head>
     <body>
      The sum of 2.0 + 2.0 is
      <script language="JavaScript">
   ```

```
        document.write(2.0 + 2.0);
      </script>
    </body>
  </html>
```

- Run the program and notice that the browser completes loading the image this time because it completes the task of computing 2.0 + 2.0 and puts the result into the source file.
- Check the source file and notice that it is the same file you typed in. That is, the addition of the "4" is internal to the Browser's operation, and so you do not see it.

3. **Edit the Program of Step 2.**
   - The third program of importance from lecture uses declarations to create variables. The variables were anumber, another, and answer. They illustrate that we can name the numbers that we work with when we perform a computation. Add the declaration line

     ```
     var anumber=2.0, another, answer;
     ```

     to the program of Step 2. They should appear right after the JavaScript tag.
   - Add an assignment statement to initialize the value of another to 2.0. The assignment statement is

     ```
     another = 2.0;
     ```

   - Add an assignment to compute the answer, that is,

     ```
     answer = anumber + another;
     ```

   - Finally, revise the document.write() operation so that it simply writes out the answer. That is, it becomes

     ```
     document.write(answer);
     ```

     The resulting program looks as follows.

     ```
     <html>
       <head>
         <title>My Test Page</title>
       </head>
       <body>
         The sum of 2.0 + 2.0 is
         <script language="JavaScript">
         var anumber = 2.0, another, answer;
         another = 2.0;
     ```

```
      answer = anumber + another;
      document.write(answer);
      </script>
    </body>
  </html>
```
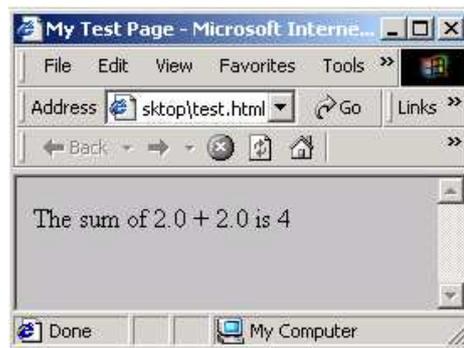

4. **Understanding the Difference between the HTML Text and the JavaScript Computation.**
   The text says "The sum of 2.0 + 2.0 is" and then the JavaScript supplies the answer. But, the right answer is produced only because we have set things up correctly. We will emphasize this by making changes that will produce the incorrect answer.
   - Edit the text so that it reads "The sum of 2.0 and 3.0 is".
   - Save and reload the page and get
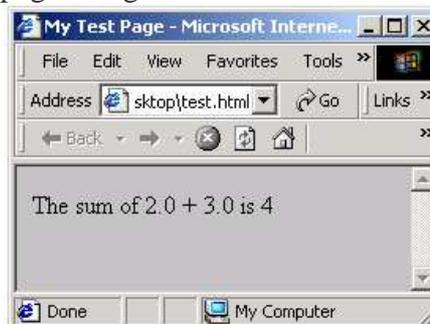
   - The result is wrong because the text changed, but the computation that supplies the answer has not changed.

5. **Revising the Text and Computation**
   - Edit the HTML text so that it reads "The product of 2.0 * 3.0 is"
   - Change the computation so that the assignment to the variable another changes from 2.0 to 3.0.
   - Change the assignment to answer so that it multiplies the two numbers together, that is, the statement is

   answer = anumber * another;

   - Save the result and run it, verifying that everything is OK.

6. **Girl Scout Cookies!**

   Now put all of the knowledge together to produce a new page. The page will compute the cost of 1000 boxes of Thin Mint Girl Scout Cookies at $3.50 per box.

   - Begin by creating the HTML page. The page should have the title "Girl Scout Cookies", the heading "Thin Mints" and it should have brown background and lime text. The text should read, "The price of 1000 boxes of Thin Mints is ".
   - Set up the JavaScript to compute the solution. Declare three variables using the var declaration: numboxes, price, answer.
   - Initialize price in the declaration to be 3.50.
   - Write an assignment statement that sets the variable numboxes to the value 1000.
   - Write an assignment statement that computes the answer by multiplying numboxes times price.
   - Using a document.write() command, display the answer.
   - Show the result to your TA.

   The result will be