

Lab – An Introduction to Javascript

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In this lab you will learn how to:

- Use a write statement to generate content in an HTML document
- Create a prompt box which asks for a user input
- Store the user's input in a variable
- Store user input in a variable and write the user input to the HTML page
- Use alert boxes to show the values assigned to certain variables
- Use different Data Types and change between data types

Before starting the exercises, create a new folder called javascript in which you will save all your files from the JavaScript labs.

Exercise 1

1. Use a write statement to generate content in an HTML document:
 - a. Create a new HTML file called write_statements.html and save this in the javascript folder.
 - b. Place <script> tags in the head of the HTML page.
 - c. Use a write statement to write the word "hello" into the page
 - d. Save and view your page in a browser
 - e. Add html code to your write statements to include:
 - i. Your name as <h1>
 - ii. Your programme as <h2>
 - iii. A hyperlink (link to <http://www.w3schools.com> or anywhere else you wish)
 - iv. An image
 - f. Save and view your work in a browser after each step.

Exercise 2

1. Create a prompt box which asks for user input
 - a. Create a new file called prompt.html

- b. Place `<script>` tags in the body section of `prompt.html` and write the code to make a prompt box appear prompting the user to enter their name
- c. Save and view the page in a browser. You should be prompted to enter your name.
- d. Click "OK", does anything happen?

Exercise 3

1. Store user input in a variable and use the variable to write the user input to the HTML page. At the moment the data you entered is lost when you click "ok". We're going to store the data in a variable called `userName`.
 - a. Between the `<script>` tags you put in the body section of `prompt.html`, declare a new variable called `userName`
 - b. Assign to this variable the value of the user input into the prompt box
 - c. Now use a write statement to write the variable to the page
 - d. Add to the `document.write` statement so that `userName` appears inside the following sentence on the page:
Hello, how are you today?
Remember to use plus signs (+) to concatenate the string!
 - e. Change the name of the variable `username` to `firstName`
 - f. Declare a new variable `surname`
 - g. Make changes to that you are prompted twice, firstly for your `firstName` and then your `surname` and assign the values to these two variables
 - h. Amend the `document.write` statement so that it only writes the `firstName` of the user in the browser window

Exercise 4

1. Use alert boxes to show the values assigned to certain variables
 - a. Still working in the file `prompt.html`, write the code for an alert box which will show the value of the variable `firstName`

- b. Amend the code so that the alert window displays something like “Hello Joe, hope you have a nice day”
- c. View the page in a browser and notice the changes.
- d. Add a new document.write statement so that it writes something like “Your full name is Joe Bloggs” in the browser window.
Note the difference between window.alert and document.write.
- e. Save your changes.

Exercise 5

1. Use alert/prompt, assign ids and use document.getElementById
 - a. Create a new html file called welcome.html
 - b. Make an alert box appear which displays “Using JavaScript” as soon as the page is loaded
 - c. Write the code to make two prompt boxes appear prompting the user to enter their name and course
 - d. Declare two separate variables, name, course and assign them to store the user’s responses
 - e. Create two empty <p> tags within the body section and assign unique id names to each of them eg one and two
 - f. Make the responses entered by the user to automatically become the content of the <p> tags
Hints: document.getElementById(“one”).innerHTML
Also the js code must be placed after the <p> elements
 - g. View the page in a browser and notice the changes.

Exercise 6

1. Parsing a string into a number with user input. You are going to write a script which will prompt the user to enter their age as a string .
 - a. Create a new html file called age.html
 - b. Declare a variable called userName which holds the value a user enters when prompted for their name.

- c. Declare a variable called age which holds the value a user enters when prompted for their age
- d. View the page in a browser
- e. Enter your name at the first prompt in the format: XX years old
- f. View the page in a browser. The data entered into the second prompt box is a string.
- g. Use parseInt to parse the value into an integer at the same time as it is assigned to the variable age
- h. Add an alert box to display a welcome message which contains some text as well as the age (integer value) of the user

Exercise 7

1. Simple calculations

- a. Create a new html file called calculations.html
- b. Declare three variables, x, y and sum
- c. Add two prompts which asks users to enter two separate numbers and assigns them to variables x and y
- d. Assign the total of variables x and y to the variable sum ie. `var sum=x+y`
- e. Add the document.write statement which displays something like:
The total of x and y is: sum, where x and y are replaced with the values entered by the user and sum is replaced by the correct total.

Remember if you add 2 and 9 as a string, the result is 29 but if you add them as numbers then the result is 11. So you need to parse the user input before you can do any calculations with it.

Bonus exercises - if you have time to spare, try the following:

1. A prompt box asks the user to enter a number and the square and cube of that number is displayed with appropriate text.
Note 2 squared is 2 times 2 which is equal to 4 and 2 cubed is 2 times 2 times 2 which is equal to 8.
2. First, copy the jpeg images (virus and worm) from Moodle into the same location as the html files. Add a prompt box which asks the user to enter either "virus.jpg" or "worm.jpg" and then displays the correct image in the browser window.
3. Once this works, amend it to allow the user to only enter virus or worm (without the extension) and automatically add the extension so that the correct image is still displayed.
4. Finally, try some of the Javascript tutorials and demos on www.w3Schools.com