JavaScript

LIBRARY CodeLab

What is JavaScript? JavaScript is a programming language used to make webpages interactive. It allows users to interact with your content and actually give inputs that make changes. Pop up boxes, clickable buttons, and validating information are all possibilities with JavaScript.

What Does JavaScript Look Like?

Variables
You can create something called a variable in JavaScript, which allows you to create a placeholder for data that you can call later.

Functions
You can use a JavaScript function (of your own design) to save and call back a simple or complex set of actions.

```
var myName=("Sally");
function TellMeMyName () {
    alert("My Name is" + myName);
}

TellMeMyName();
```

How JavaScript Works

JavaScript uses logic to make webpages interactive. For example, it can take the response of a user to a question and if their response meets the criteria, it will execute one function, but if not it will execute a different function. This ability to respond to user input using yes or no responses makes JavaScript more powerful than either HTML or CSS because it is interactive. You still need HTML & CSS, but JavaScript can work alongside them or on top of them--even interacting directly by changing the CSS under given conditions. JavaScript can be embedded directly in your HTML or saved in a separate .js file.

Code is Written As:	What it Does
var myName="Sally";	Creates a variable and stores value "Sally"
alert("Hello!");	Creates a popup box that says Hello!
prompt("What is your name?");	Creates a popup with a response box
>=	More than or equal to
var myName=prompt("What is your name?");	Creates the variable myName and sets the value equal to the user's input to the prompt.

JavaScript Data Types

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Data Types	Definition	What it Looks Like
Variables	Can store data and have a custom name.	var myName="Sally";
Functions	Can save and call back a simple or complex set of actions, also with a custom name.	function sayHello() { alert("Hello, " + myName};
Objects	Objects are variables that contain properties.	var Vehicles= {color:"red", type: "truck"};
Arrays	Arrays are variables used to store multiple values.	var Cars= ["Volvo", "BMW", "Kia"];
Strings	Plain text that is stored, not a directly manipulated by JS, always in quotes.	var job="Librarian";
Numbers	Unlike a string, numbers in JavaScript do not need quotes because they can be directly manipulated.	var age=24;

Variables

You can create variables in JavaScript and call them pretty much whatever you want. When you create a variable, you can give it a value, or you can just create it. It won't appear on the page until you call the variable using some other command; creating a variable simply creates it.

Code is Written As:	Code Displays as:
var myName="Sally";	----

Doesn't show up on webpage, but name is now stored

If Statements

In order to make JavaScript interactive, you can use if statements to program a response based on the user's input. As you can see below, you can set a condition (such as must be less than 3 or must be not blank), and if the condition is met, it will do one thing, and if the condition is not met, it will do something else.

Code is Written As:

```
if (myName !==null) {
    alert("Hello, " + myName);
}
else
    alert("Please enter your name!");
```

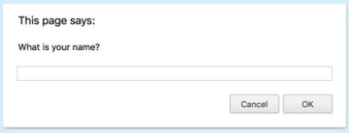
Code Displays as:

Hello, Sally

Please enter your name!

Alerts & Prompts

Alerts and prompts are easy built in JavaScript commands that create popup boxes. An **Alert** will simply pop up a message of your choosing, and a **Prompt** will ask for a response from the user. These commands are a great way to test your JavaScript.

Code is Written As:	Code Displays as:
alert("Welcome to my website!");	
prompt("What is your name?");	

Project Brewery Website Age Checker

1. Download the HTML & CSS Files. Look at the code in your HTML file and your CSS file to make sure you understand how it is rendering in the browser.

2. Create a new file in your text editor and save it as **script.js**. This is where we will write all of our JavaScript code.

3. Link your JavaScript file and your HTML file. Between the header tags of your HTML document, write the following code:

<script type="text/javascript" src="script.js"></script>

4. Now we will create our popup box. First we need to create a variable called age. This will store the user's input to the question "How old are you?"

var age=prompt("How old are you?");

Save your JavaScript and refresh your page and you should see your popup. You'll notice you can enter in an answer to the prompt, but it doesn't do anything.

6. Next, we will create our if/else statement. This will allow us to use the input to show a different message depending on how the user responds. We want the popup to show one message if the user is over 21 and a different message is they are under 21.

Use the format for if else statements:

```
if (condition) {
        block of code to be executed if the condition is true;
}
else {
        block of code to be executed if the condition is false;
}
```

Hint: Your parameter will be (age >= 21), which means greater than or equal to 21.

7. Change the text of your alerts. Edit the text of your alerts to say "Welcome!" if your user is 21 or older, or "You must be 21!" if they are under 21.

8. Check your work! Save your JavaScript and refresh your page in the browser to check your work. Enter a number 21 or over and see if it gives you the correct response. Refresh your page to get the pop up to come up again--enter a different number to check your other response.

Project: Brewery Website Age Checker *Answers*

JavaScript

```
var age =prompt("How Old Are You?");

if (age>=21) {
        alert("Welcome!");
}
else {
        alert("You must be 21 to enter!");
}
```

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