Introduction to JavaScript

Week 3 Research Assignment

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Select five methods that can be used on an Array and describe the following for each: 1) what the method signature is, 2) what the method does, and 3) why would this method be useful (how could you use it)?

**1. Filter:**

1) Method signature:

firstArray.filter(function(currentElementValue, arrayIndex, arrayObject), thisValue);

The arrayIndex, arrayObject, and thisValue values are optional.

2) The filter method filters each element in an array for a condition (e.g., length or value) and returns elements that match the condition and puts them in a new array.

3) You could use the filter method to winnow down items in a larger array to those of interest. For example, you could filter a large array of prices to prices that fell below a certain threshhold into a new “low price” array.

**2. Some:**

1) Method signature:

array.some(aFunction(element, index, array));

2) The some method checks an array for a certain condition and returns a true value if it finds that condition to be true in any element of the array (it stops at that point) and returns a false value if no elements in the array match that condition.

3) The some method could be used to check for certain values in an array (e.g., numbers greater than 50).

**3. Map**

1) Method signature:

array.map(function(element, index, array);

2) The map method uses a function to iterate through every item in an array and return certain values, depending on that function, and puts the returned elements in a new array.

3) The map method could be used to create new arrays that provide information from an existing in array. For example, you use it to run a mathematical operation (e.g., element \* 3) on each value of the original array and return the values of those operations to populate a new array.

**4. Pop**

1) Method signature:

var removedElement = array.pop(); OR

array.pop();

2) The pop method changes the length of an array by removing the last element from an array and returning that element.

3) The pop method can be used to shorten an array or to separate the last element from an array and use it for another purpose, such as in a function or operation.

**5. Join**

1) Method signature:

array.join(); OR

array.join(separator);

2) The join method creates a new string by joining the elements of an array together in a concatenated string. The user may specify a separator (such as a hyphen or space) or can leave it out to separate the elements in the new string with a comma.

3) The join method would be useful when one wanted to present the elements of an array in a fluid (e.g., in a sentence) or continuous fashion. For example, instead of logging a grocery list array as “[pears, laundry detergent, bread, milk],” it could be presented as “pears, laundry detergent, bread, milk.”

What is the difference between == and ===?

== is the equality operator. It compares elements to check whether their values are identical. The equality does compare the elements’ data types, so it may compare a string value (e.g., “7”) and see it as “true” (or “truthy”) when compared with the numerical value (e.g., 7).

=== is the identity operator. Like the equality operator, it compares elements, but it checks both their values and their data types. To give back a “true” value, both must be the same.

What is a closure and how does it work? Provide an example.

Closures serve as the wrapper for the scope of execution in code. In JavaScript, closures nest one function inside another. The inner function has access to the outer function’s scope (e.g., its variables) and, through closures, make this scope accessible from outside the outer function’s scope as well.

For example

function myPets() {

var favoriteCat = 'Witch';

function myFavoritePets() {

alert("My favorite cat's name was " + favoriteCat + ".");

}

myFavoritePets();

}

myPets();

By calling the outer function (myPets), we can access the variable favoriteCat from the inner function because the closure setup keeps it in memory.

What is your favorite thing you learned this week?

It’s a tossup. I like the different methods that can be applied to arrays and strings to shortcut certain procedures, but it took me a while to get how to set up functions properly. Now that I think I’ve got that for the most part, I think functions are my favorite because they can be so useful.