Master Class Coding Exercises

JavaScript / jQuery

Part 2

Complete the following exercises using JavaScript/jQuery. If you are able, spend some time dressing them up visually. While by no means a requirement, it will help you become more comfortable working with CSS. Consider taking advantage of a CSS framework like Bootstrap (which we use extensively at Coder Foundry) to help you with visual presentation. You might spend some time browsing the Bootstrap documentation at getbootstrap.com, and exploring various Bootstrap templates and themes, such as those available at wrapbootstrap.com. (See the examples on page 2.)

1. Perfect Numbers: In number theory, a perfect number is a positive integer that is equal to the sum of its proper positive divisors, that is, the sum of its positive divisors excluding the number itself. The first perfect number is 6 – its positive divisors (excluding itself) are 1, 2, and 3, whose sum is 6.
   a. Write a function that determines whether a given number is 'perfect.'
   b. Write a function to display all perfect numbers between 1 and 10,000.
2. Write a program to display the first 5 Happy Numbers. Happy numbers are those that can be reduced to 1 through the following process – Start with any positive integer, replace the number with the sum of the squares of its digits, and repeat until the result is 1 or the result is an endless loop.
3. Write a program to find all three-digit Armstrong numbers. An Armstrong number is an integer such that the sum of the cubes of its digits is equal to the number itself. (i.e. 371 is an Armstrong number since $3^3 + 7^3 + 1^3 = 371$.
4. Write a function findLongestWord() that finds and displays the longest word in a selected text file.
5. Write a function filterLongWords() that finds and displays all words that are longer than a given integer *i* in a selected text file. Do not display words more than once.
6. Write a function wordFreq() that displays a frequency listing of the words contained in a selected text file. Order the words by frequency.
7. Write a function findWord() that returns the total number of occurrences of a given word in a selected text file (i.e. the number of occurrences of "Alice" in the first chapter of *Alice in Wonderland*).

You might consider using a jQuery/Bootstrap package such as SyntaxHighlighter (http://alexgorbatchev.com/SyntaxHighlighter/) to display formatted code in a TextArea object.


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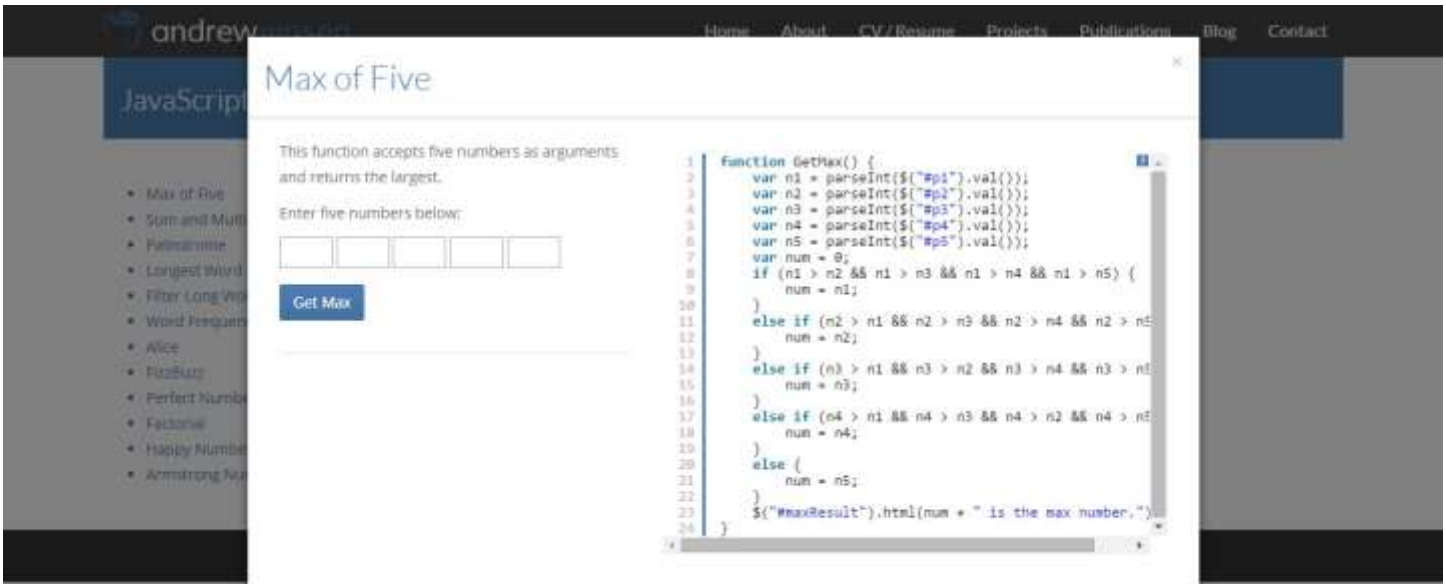
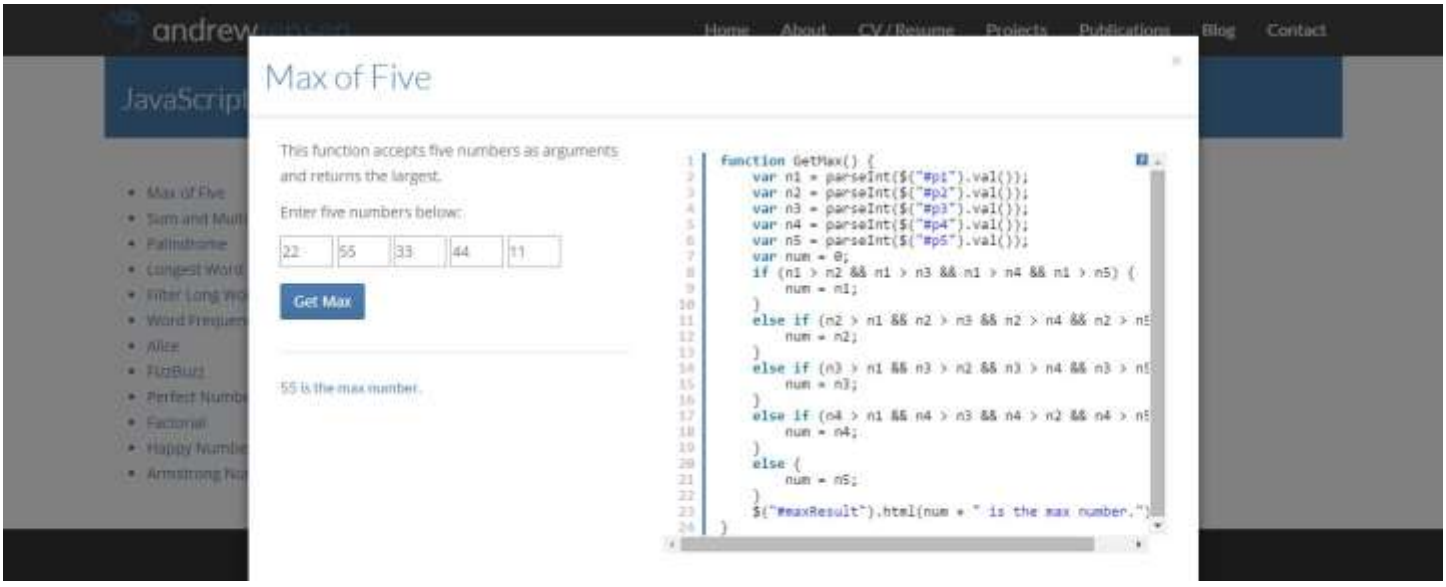

Max of Five
This function accepts five numbers as arguments and returns the largest.
Enter five numbers below:
Get Max
function GetMax() {
var n1 = parseInt($("#p1").val());
var n2 = parseInt($("#p2").val());
var n3 = parseInt($("#p3").val());
var n4 = parseInt($("#p4").val());
var n5 = parseInt($("#p5").val());
var num = 0;
if (n1 > n2 && n1 > n3 && n1 > n4 && n1 > n5) {
num = n1;
}
else if (n2 > n1 && n2 > n3 && n2 > n4 && n2 > n5
num = n2;
}
else if (n3 > n1 && n3 > n2 && n3 > n4 && n3 > n5
num = n3;
}
else if (n4 > n1 && n4 > n3 && n4 > n2 && n4 > n5
num = n4;
}
else {
num = n5;
}
$("#maxResult").html(num + " is the max number.");
}


Max of Five
This function accepts five numbers as arguments and returns the largest.
Enter five numbers below:
22
55
33
44
11
Get Max
55 is the max number.
function GetMax() {
var n1 = parseInt($("#p1").val());
var n2 = parseInt($("#p2").val());
var n3 = parseInt($("#p3").val());
var n4 = parseInt($("#p4").val());
var n5 = parseInt($("#p5").val());
var num = 0;
if (n1 > n2 && n1 > n3 && n1 > n4 && n1 > n5) {
num = n1;
}
else if (n2 > n1 && n2 > n3 && n2 > n4 && n2 > n5
num = n2;
}
else if (n3 > n1 && n3 > n2 && n3 > n4 && n3 > n5
num = n3;
}
else if (n4 > n1 && n4 > n3 && n4 > n2 && n4 > n5
num = n4;
}
else {
num = n5;
}
$("#maxResult").html(num + " is the max number.");
}