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HOMEWORK 2

Problem 1

```
function change(money) {  
  
    var coins = [25, 10, 5, 1];  
    var cambio = [];  
    var nOfCoins = 0;  
  
    for (var cIndex = 0; cIndex < 4; cIndex++) {  
  
        if ( money > -1 ) {  
  
            nOfCoins = Math.floor(money / (coins[cIndex]));  
            money -= nOfCoins * coins[cIndex];  
            cambio.push(nOfCoins);  
  
        } else { cambio.push(0); }  
    }  
    return cambio;  
}
```

Problem 2

```
function stripVowels (str) {  
  
    var vowArr = ["a","e","i","o","u","A","E","I","O","U"];  
  
    for(var i = 0; i < vowArr.length; i++) {  
  
        while( str.indexOf( vowArr[i] ) != -1 ) {  
            str = str.replace( vowArr[i], "" );  
        }  
    }  
    return str;  
}
```

Problem 3

```
function scramble(str) {
```

```

var strArr = str.split("");
var permute = ("");

for (var i = strArr.length - 1; i > 0; i--) {

    var j = Math.floor(Math.random() * (i + 1));
    permute = strArr[i];
    strArr[i] = strArr[j];
    strArr[j] = permute;
}
return strArr.join("");
}

```

Problem 4

```

function powersOfTwo( max, f ) {

    var i = 0;
    var value = 0;
    while ( max > 0 && value < max ) {

        value = Math.pow(2,i);
        i++;
        if ( value < max+1 ) { f ( value ); }

    }
}

```

Problem 5

```

function powers( base, max , f ) {

    var i = 0;
    var value = 0;

    if( base != 0 ){

        while ( max > 0 && value < max ) {

            value = Math.pow(base,i);
            i++;

            if ( value < max+1 ) { f ( value ); }

        }

    }
}

```

```
}
```

Problem 6

```
function interleave( first, second ) {  
  
    var inter = [];  
    var bigger;  
    first.length > second.length? bigger = first : bigger = second;  
  
    for (var i = 0; i < bigger.length; i++) {  
  
        if ( first.length > i ) {  
  
            inter.push( first[ i ] );  
  
        }  
  
        if ( second.length > i ) {  
  
            inter.push( second[ i ] );  
  
        }  
    }  
    return inter;  
}
```

Problem 7

```
function stutter( given ) {  
  
    return interleave(given, given);  
}
```

Problem 8

```
function wordCount( str ) {  
  
    var countArr = str.toLowerCase().split(/^[a-zl"]/);  
    var countO = new Object();  
  
    if (countArr.length > 0 ){
```

```

        for (var i = 0; i < countArr.length; i++){
            if ( countArr[i] != 0 ) {
                if (countO[countArr[i]] == null) {
                    countO[countArr[i]] = 1;
                } else {
                    countO[countArr[i]]++;
                }
            }
        }
    }
    return countO;
}

```

Test

```

/*
 * Unit tests for the Getting Started functions.
 */
$(function () {

    var anagram = function (s, t) {
        if (s.length != t.length) {
            return false;
        }
        var a = s.split(""), b = t.split("");
        a.sort(), b.sort();
        for (var i = 0, n = a.length; i < n; i++) {
            if (a[i] != b[i]) {
                return false;
            }
        }
        return true;
    };

    test("Change Tests", function () {
        deepEqual(change(97), [3, 2, 0, 2]);
        deepEqual(change(8), [0, 0, 1, 3]);
        deepEqual(change(-250), [0, 0, 0, 0]);
    });

```

```

    deepEqual(change(0), [0, 0, 0, 0]);
    deepEqual(change(4), [0, 0, 0, 4]);
    deepEqual(change(2500001), [100000, 0, 0, 1]);

});

test("Strip Vowels Tests", function () {
    deepEqual(stripVowels("Hello, world"), "Hll, wrld");
    deepEqual(stripVowels("And Now For"), "nd Nw Fr");
    deepEqual(stripVowels("Something completely different"), "Smthng cmpltly dffrnt");
    deepEqual(stripVowels(""), "");
    deepEqual(stripVowels("3454aa3452aa"), "34543452");
});

test("Scramble Tests", function () {
    var data = ["a", "rat", "JavaScript testing"]
    data.forEach(function (s) {
        ok(anagram(s, scramble(s)));
    });
});

// test powersOfTwo here

test("Powers Of Two Tests", function () {
    var a = [];
    powersOfTwo( 33, function (p) {a.push(p);} )
    deepEqual(a, [1,2,4,8,16,32]);
    a = [];
    powersOfTwo( 0, function (p) {a.push(p);} )
    deepEqual(a, []);
    a = [];
    powersOfTwo( 1, function (p) {a.push(p);} )
    deepEqual(a, [1]);
    a = [];
    powersOfTwo( -23, function (p) {a.push(p);} )
    deepEqual(a, []);
    a = [];
    powersOfTwo( 64, function (p) {a.push(p);} )
    deepEqual(a, [1,2,4,8,16,32,64]);

});

// test powers here

test("Powers Tests", function () {
    var a = [];

```

```

    powers(2, 33, function (p) {a.push(p);} )
    deepEqual(a, [1,2,4,8,16,32]);
    a =[];
    powers(3, 33, function (p) {a.push(p);} )
    deepEqual(a, [1,3,9,27]);
    a =[];
    powers(-2, 33, function (p) {a.push(p);} )
    deepEqual(a, [1,-2,4,-8,16,-32]);
    a =[];
    powers(0, 33, function (p) {a.push(p);} )
    deepEqual(a, []);
    a =[];
    powers(33, 1, function (p) {a.push(p);} )
    deepEqual(a, [1]);

});

// test interleave here
test("Interleave Test", function () {
    deepEqual(interleave(["a", "b"], [1, 2, true, null]), ["a", 1, "b", 2, true, null]);
    deepEqual(interleave(["a", "b"], []), ["a","b"]);
    deepEqual(interleave([], []), []);
    deepEqual(interleave(["a", "b","a"], [1, 2]), ["a", 1, "b", 2, "a"]);

});

// test stutter here
test("Stutter Test", function () {
    deepEqual( stutter( [ "a", "b" ] ), ["a", "a", "b", "b"]);
    deepEqual( stutter( [ ] ), [ ]);
    deepEqual( stutter( [ "a" ] ), ["a", "a"]);
});

// test word count here
test("Word Count Test", function () {
    deepEqual( wordCount("If you dog a dog, you'll\nbe DOG-TIRED."), {"if":1, "you":1,
"dog":3, "a":1, "you'll":1, "be":1, "tired":1});
    deepEqual( wordCount("      ", {}), {});
    deepEqual( wordCount(" ' ", {"":1}), {"":1});
    deepEqual( wordCount("983495867349586790839456'a"), {"a":1});
    deepEqual( wordCount("This friend is, friend the39 is4053 the second test my
friend "), {"test": 1, "this":1, "friend":3, "is":2, "the":2, "second":1, "my":1});
});

});

```

Problem 10

```
var prefixes = function ( inp ) {  
  
    var i = 0;  
    var timer = setInterval(function() {  
  
        if( i >= inp.length ) {  
  
            clearInterval( timer );  
            timer = null;  
        }  
  
        $("body").append("<div>" + inp.slice(0,i) + "</div>");  
        i+=1;  
  
    },1000);  
  
};
```