Exercise 12: Collections

For this exercise, you'll create some JavaScript functions that use arrays and objects.

Start with this code

Create a new file in the your text editor and paste in this code. Note that the **body** tag has an attribute called **onload**. This tells the code to call a function when the page loads. We've set it to the **demoLoop** function, which has a for loop in it.

```
<!DOCTYPE HTML>
<html>
<body onload=" demoCollections()">


<div id="resultDiv"></div>

<script>
function demoCollections() {
    var result = "";

    // Add code here

    resultDiv.innerHTML = result;
}

</script>
</body>
</html>
```

The **demoCollections** function will be called when the page is loaded. It has a variable called **result**, which starts out as an empty string. You'll add some code that creates HTML to be put in the HTML divider element **resultDiv**.

Save this as **collections.html**.

Accessing objects in an array

Add a line of code above the **demoCollections** function to define an array of strings for the days of the week:

```
var daysOfWeek = ["Sunday", "Monday", "Tuesday", "Wednesday", "Thursday", "Friday", "Saturday"];
```

Now add this code where the comment says "Add code here":

```
    result += "<p>" + "First day: " + daysOfWeek[0] + "</p>";
```

Save and open in the browser. You should see the string in the array.

Next, add a line of code under that one that will show the last day of the week. To be extra clever, see if you can use the **length** property of the array. (It's not quite as obvious as you might think. Be sure to open the JavaScript console if you have trouble.)

Looping through an array

Under those two new lines, add these lines to create a loop:

```
    for (var i = 0; i < daysOfWeek.length; i++) {
        result += "<p>" + daysOfWeek[i] + "</p>";
    }
```

Save and refresh the page. You should see all the strings in the array displayed, one after the other.

Now see if you can modify the for loop so that it goes lists them in reverse order. It'll take a little thought to get the three sections of the for loop to be correct.

Accessing object properties

Now, above the **demoCollections** function, add the following variable for a new object, which contains data about a course on English literature. Note that some of the property values are strings, and others are numbers, and there's even one Boolean that indicates whether it's a graduate class or not.

```
var course = {
      title: "English Literature",
      teacher: "Tom Hardy",
      numberStudents: 33,
      department: "English",
      credits: 5,
      graduate: false
}
```

In the **demoCollections** function, add the following line of code under the for loop:

```
    result += "<p>" + "Teacher: " + course.teacher + "</p>";
```

Save and refresh the page. The last line will now show the value of the teacher property.

Add another line under this that will show the full value of the credits that the school is offering. That value will be the number of students times the number of credits. Have it say, "Total credits:" and then the value.

Looping through object properties

Under these two new lines, add the following for loop:

```
for (var prop in course) {
  if (course.hasOwnProperty(prop)) {
        // Add code here
  }
}
```

Replace the “Add code here” line with code that will display each property name, a colon, and the property’s value. It will look like the other lines (`result += "<p>" + ... + "</p>";`), but you need to figure out what to put in between the plusses.

Take a Look at How I’ve Done It

If you get stuck, you can look at my versions of the code: http://sdkbridge.com/prog1/Exercise12Answers.pdf.