**Overview**

The objective of this lab is to give you practice using:

* Creating an array
* Adding values to an array
* Getting values from an array
* Calling array methods to do special operations on the array

**Part 1: Array Exercises**

A web page, *ArrayExercises.html*, has been written for you that contains code to call functions that you will write in a file named *ArrayExercises.js*. The instructions for writing your functions and the code to test your functions are in *ArrayExercises.html*, but all the code you write will go in *ArrayExercises.js.*

Here is a screenshot of the finished ArrayExercises web page:

A screenshot of a social media post

Description automatically generated

**Part 2: Web Apps**

You will create two web apps. The HTML page for each of these has already been written for you. You will just write the JavaScript file.

Web App I for Group A – Roman Numeral Converter

Write a function named *romanToDecimal* that will convert a Roman numeral to a decimal number.

The function will:

* Have one parameter, a Roman numeral (a string).
* Return one value, a decimal number (a number).
* Work for Roman numerals I through X.
* Use an array containing hard-coded values to convert the Roman numeral to a decimal number.

Here is a screenshot of the finished web app:

A picture containing bird

Description automatically generated

Web App II for Group A – Grade Book

This web app displays a list of students and allows an instructor to add names to the list and enter grades. Here are the implementation instructions:

1. Declare two one-dimensional global arrays:
   1. *students*
   2. *grades*
2. Write three functions:
   1. *addStudent*
      * Has one parameter: a student's name.
      * Adds an element with the student’s name to the *students* array and puts an element in the *grades* array with a default grade value.
   2. *removeStudent*, this function:
      * Has one parameter: the array index for the student.
      * Returns true if the index is valid.
      * Hint: Use the *splice* method to remove the student and the grade from the arrays.
   3. *changeGrade*
      * Has two parameters: student’s name, grade.
      * Returns true if the student’s name was found.
      * Use the *indexOf* method to get an index, then change the value in the grades array.

This is a screenshot of a working Grade Book web app:

A screenshot of a cell phone

Description automatically generated

**Submitting your lab work on Moodle**

Beta Version

Post the following in the *Lab Beta forum*:

1. The web pages you created for part 2.  
   (Zip the files for you web pages and attach them to the post.)
2. A code review of your lab partner’s web page for part 2.   
   (Review the part 2 web apps for one of your lab partners using the Code Review Form provided.)

Code Review

1. Submit a copy of the code review above to the *Lab Code Review assignment*.

Production Version  
You may revise your beta version before submitting the production version. On the code review form you received from your lab partner, complete the “Production” column to show what you did or did not revise.

Upload the following 7 files to the *Lab Production Version* assignment:

1. Two files (.html and .js) for part 1.
2. Four files (2 html and 2 js) for part 2.
3. The code review from your lab partner with the “Prod” column filled in by you.