Exercise 3: Core JavaScript

The aims of this lab are to get to know JavaScript by:

- using some basic JS to build the basis for a Wordle clone.
- using JS and HTML Forms to get information from a user and run some functions.

1. Getting started with JavaScript W3Schools tutorial

Work through the W3Schools Javascript tutorial. There is a lot there, and you can skip some sections, but you should do most of the exercises up to the Forms topic. You should also come back to this tutorial as we go through the semester as the later sections will help with some of our more advanced material.

You can experiment with basic JS functions and commands in the console of a webpage.

2. Making a Wordle clone (without CoPilot)

Disable CoPilot. Write a JavaScript function *wordle(target, guess)* with the following specification: The function should:

- take two five letter words
- report which of the letters in guess appear in the word in the correct location, which letters appear in the word in a different location, and which letters do not appear in the word.
- It should print an error message if the inputs are not the correct type or both words do not have five letters.

For example: *wordle(scope, scoop)* should print something like the following output to the console:

> The first letter is in the correct position, the second letter is in the correct position, the third letter is in the correct position, the fourth letter does not appear in the word *twice*, the fifth letter appears in the word, but in a different position.

Note the twice for the fourth letter is optional, but this reflects the nature of the feedback given by Wordle.

We will leave the Wordle app here for this week, but next week we will build a GUI for it!

3. Make your webpage interactive using JS and Forms

Re-enable CoPilot. There are many ways to use JS to make a webpage interactive, for example: you could use forms to take information from a user and provide an output to the user; or you could have a user click on a button to make CSS or content changes. See this W3Schools page for some information on how to take data from a form.

Create a minimally interactive webpage by taking input from a form, running the following JS functions and outputting the information to the console. Some example functions:

- Take in two numbers, and return the lowest-common-multiple
- Take in a year, and determine if it is a leap year
- Takes in two strings and determines if one is an anagram of the other.

If you are keen, you can read ahead in the W3Schools tutorials for next week and add the following functions:

- Take in a hex code (#xxxxxx), and change the background of the page to that colour
- Have a button that changes the background colour to a random colour.

What do you notice about the utility of CoPilot and the quality of its suggestions when writing HTML and CSS versus when writing JavaScript? Why do you think this is?