IMY 220
Practical 3:
JavaScript

Due: Friday 28 August @ 14:00

The submission instructions are available on ClickUP. Any deviation from these instructions will cause a 10% deduction from your mark.

Instructions

- For this practical, you will need to add JavaScript functionality to make the code in *index.html* work as discussed below. You are not allowed to edit index.html, except for including your own JavaScript file and your name and surname. You must put your name and surname in the "author" meta tag.
- Create a file called *script.js* and include it in *index.html*. All your code for this practical must be written inside this file.
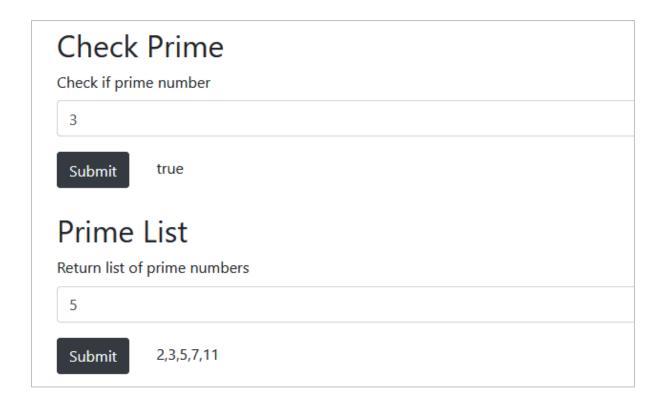
Section 1: JavaScript OOP

Define a constructor for an object called *PrimeChecker* (the constructor should not take any arguments). Do not use the "Object" keyword. This object must have two member functions called *isPrime* and *fillArray* which respectively do the following:

- *isPrime* should take one argument as its parameter and returns true/false depending on whether the supplied argument is a prime number.
- *fillArray* should take one argument as its parameter and return an array filled with the first n amount of prime numbers, where n is the supplied argument. Use the *isPrime* function to accomplish this.
- (You may assume that the supplied argument will always be a positive integer.)

Create an instance of the *PrimeChecker* object and use its functions within event handlers so that when the relevant buttons are clicked the input values are checked and the results are shown underneath the input boxes. (See next page for examples.)

The event handlers should be called inside *script.js* (not *index.html*).

Check Prime

Check if prime number

```
3
```

Submit   true

Prime List

Return list of prime numbers

```
5
```

Submit   2,3,5,7,11

Section 2: Palindrome Checker

Create a function called *checkPalindrome* which takes a string as its parameter and checks if this string is a palindrome. (A palindrome is a word or sentence that reads the same forwards and backwards, such as racecar.) To accomplish this, you **must** use JavaScript array functions; do not write your own loops for this section.

HINT: to be able to call JS array functions on individual characters in the string, you must first convert your string to a character array.

Note: if you write your own loops you will still receive some of the marks. You will receive more marks for submitting code that uses loops and successfully checks for palindromes than for code that does not work at all.

Add the necessary event handlers to update *span#palindromeResult* when the button under Check Palindrome is clicked, for example:

Check Palindrome

Check if word is a palindrome

```
racecar
```

Submit   true

In order to clarify the required functionality for this assignment, an example file called *P3_memo.html* has been included for you to download, which demonstrates what you are required to implement using JavaScript. (Don't worry about the code contained inside this file, just use the file to understand the required functionality. If your code looks anything like the code inside this file, it will not be marked.)

Additional Information

- Refer to the slides as well as MDN website (https://developer.mozilla.org/en-US/) for help

Submit only the following file(s) according to the submission instructions.

- *index.html*
- *script.js*