IMY 220
Practical 3:
JavaScript

Due: Friday 19 August @ 9:30

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

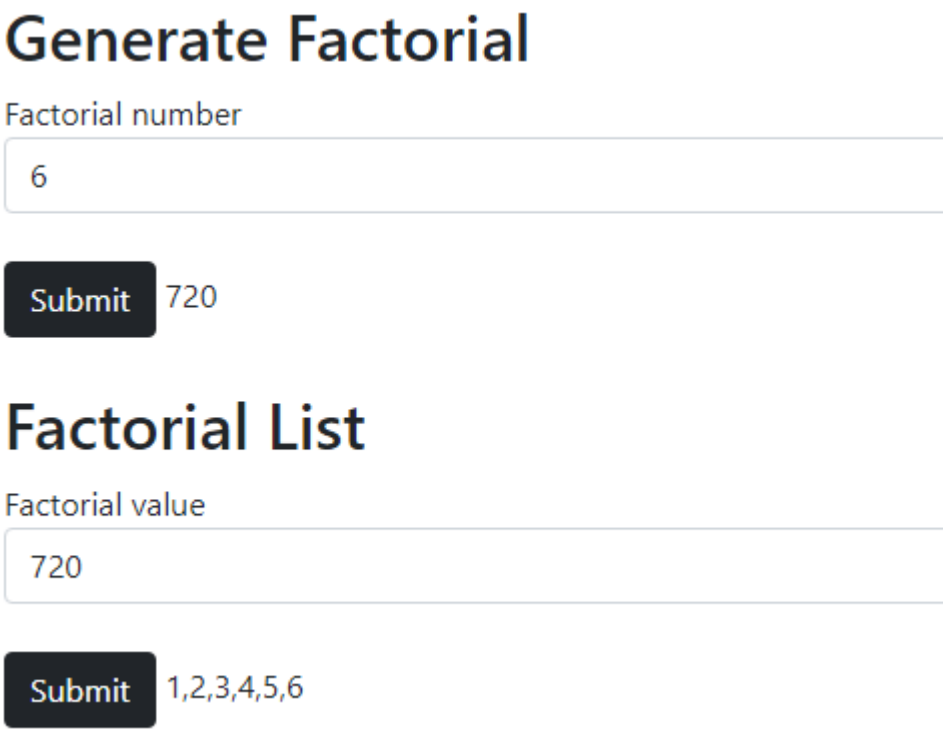
Create an object called *FactorialChecker* that doesn't take in any parameters. Do not use the "Object" keyword (i.e., check how to use objects in JS in the slides). This object must have two member functions called *printFactorial* and *fillArray* which respectively do the following:

- *printFactorial* should take one argument as its parameter and returns the factorial of the value. The factorial of a non-negative integer n, is the product of all positive integers less than or equal to n. For example, if you type the number 6 you will get the answer of 720 (because -> 1 x 2 x 3 x 4 x 5 x 6 = 720).
- *fillArray* should take one argument as its parameter which will be the factorial result and it should return an array filled with the numbers that make up the numbers that should be multiplied to get to the specified factorial. If the value you supplied is not a factorial, then the function should return a string which simply says, "This is not a factorial".
  So, for example, if you supply this function with the value of 720, it should return the values [1,2,3,4,5,6]. If you supply this function with the value 719, it should return "This is not a factorial".

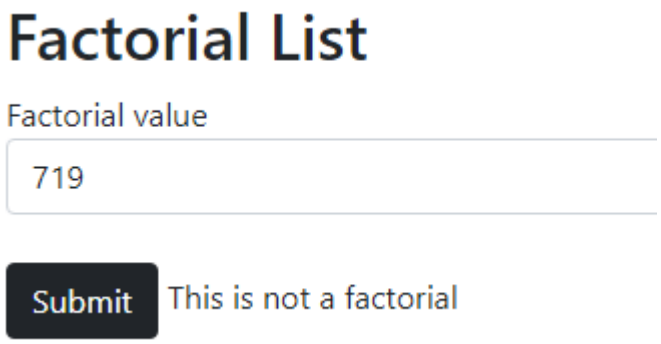
  (You may assume that the supplied arguments will always be a positive integer.)

Create an instance of the *FactoralChecker* 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*).



Below is an example of when a number is provided that is not a factorial:



Section 2: Pig Latin "encryption"

Create a function called *PigLatinEncrypt* which takes a string as its parameter and converts the string into its pig Latin counterpart. With pig Latin, a few things are done to the word that you want to change, and its listed below.

- If a word **starts** with a **vowel** then the phrase "way" is added at end of the word.
- If a word starts with a **consonant**, the consonant must be **moved** to the end of the word and the phrase "ay" must be added to the word.
- If the word contains **no vowels** the phrase "ay" needs to be added to the word.

There are multiple ways in which you can accomplish this and it's up to you on how you want to do it. If you are familiar with regex expressions, you can make use of those (which I personally feel is the easiest). Array functions can also be used if you prefer to do it that way.

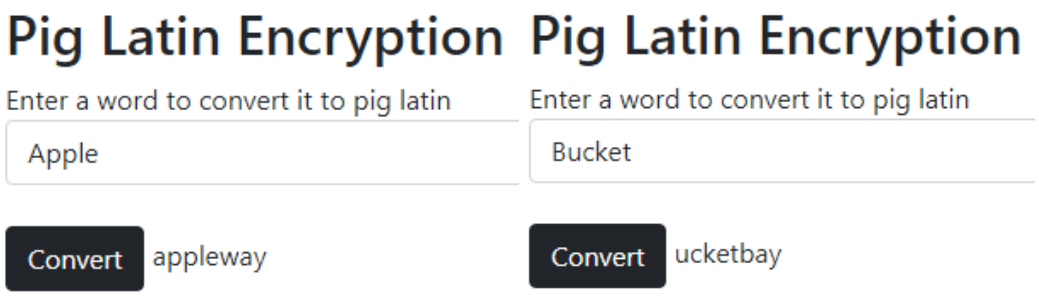
Don't panic when you initially see this, we will mark it on a case-by-case basis, so even if you didn't implement all the functionality, we will mark what you've done.

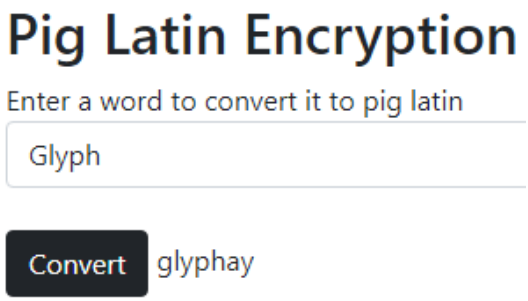
We will also test this with only one word at a time, not a sentence.

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

More hints: Google how to use REGEX if you plan to go that route

Add the necessary event handlers to update *span#PigLatinResult* when the button with the text *Convert* is clicked. Below are examples of each of the cases.





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*