Interview Questions - CodeLynx

1. Q1
   Example:
   Input: “AAAABCCCCCAAAAAAAAAAC”
   Output: [‘A’,4,’B’,1,’C’, 5, ‘A’, 10, ‘C’, 1]
   Question:
   Code a function rleEncode() that receives a string and encodes it in the following encoding - an array in which every element is a char (byte) size element either a char or an integer between 1 and 255, that describes the length this character repeats in this occurrence in the sequence.
   The encoding should represent the same string, so that if we read the encoding we can decode it to the original string.

2. Q2
   Example:
   Input: (nxn 2d array):
   [[1,2,3,4,5….,n],
   [x,x,x,x,x…..,x],
   [x,x,x,x,x…..,x],
   ……..
   [x,x,x,x,x…..,x]]

   Output:
   [[x,x,x,x,x…..,1],
   [x,x,x,x,x.....,2],
   [x,x,x,x,x…..,3],
   ……..
   [x,x,x,x,x…..,n]]
   Question:
   Write a function rot90 that receives a 2d array and rotates it IN PLACE (i.e. no additional memory) by 90 degrees, so that the first row becomes the rightmost column (not to create a copy) allocute only 0(1) memory.

3. Q3
3.1.
Example:
delay1sec(‘5’).then((v)=>console.log(v));
Will print ‘5’ after 1sec.
Question:
Make a function that receives a string, and returns a promise, which is resolved after 1 sec. Use this promise to print the number to the console log after 1 sec.

3.2.
Example:
Output: 1, 2, 3, 4, 5, 6,...100 printed to the console over 100 sec.
Question: use the promise function from before to print all numbers from 1 to 100, so that they're printed one after the other and in the right order.
NOTE: do it WITHOUT USING AWAIT (*why?)
This is a general question about promises, make sure it works if we change delay 1 sec to id => fetch (http://exemples.com/users/id) then (r =>r.json()). We want only one fetch at a time.

4. Q4*
Example:
Input: index.js, index.html, We have an app that listens on mouse click on a text box and to the text change on another textbox,
Output: min.js that does the same thing, but also logs to the console "click" and "text change" when the respective events happen.
Question:
Use webpack to instrument (catch calls to) listeners and log them to the console, and also log the invocation of the listeners.

5. Q5*
Example:
Input: [-1,1,3,9,-19,27,1,-9,2,10]
output : [27,1,-9,2,10] //sum is 31

Question:
Receive an array of integers, return subarray with maximal sum

Note: sub-arrays are arrays made of consecutive elements of the array, for example, the subarrays of [1,2,3,4] are: [1],[2],[3],[4],[1,2],[2,3],[3,4],[1,2,3],[2,3,4],[1,2,3,4].

Try to make it O(n)