Tangocode Coding Assignments

Hello SE-Intern Candidate. Bellow you will find 3 exercises. They are ordered in increasing level of difficulty. Please hand in any code, notes and resources you used to complete the exercises. Provide a detail thought process of what you tried and any draft code or pseudo-code that you did. We want to see how you solve problems, and the approach to solve them is important for us. Even though you may not get to a correct answer, send us the material you made to try to solve it anyway. [Drop us a line](#) if you have any questions.

> Please provide your answers in Javascript.

Assignments

Note: Don't worry if you don't get to a solution. In any case, we encourage you to try to solve it and send us your thoughts on it.

Assignment 1

Given an array of numbers, assume that they are all different. Calculate the largest difference (subtraction) between any two numbers of the array.

1. Code in Javascript 2 solutions for this problem
2. Explain which one is better than the other one.

Assignment 2

Create a function that takes two rectangles as parameters and returns true if the rectangles intersect, false otherwise. Assume that the (0,0) of the axis is the top left. (This is actually how iOS positions views in the screen). So a rectangle with origin (0,0), width 10 and height 20 would be on the top left corner taking 10 pixels to the right and 20 pixels down.

How to define rectangles?

```
rect1 = {
    x: 20, y:30, width: 40, height: 11
}
rect2 = {
    x: 50, y:22, width: 26, height: 36
}
rect4 = {
    x: 10, y:10, width: 30, height: 20
}
rect5 = {
    x: 45, y:10, width: 12, height: 4
}
```

Assignment 3

Given the function `assignment3` that calculates a number from a string. Find the string for which the number is: `667734139064` . The string has 7 characters and it can have repeated chars. The strings has to be formed with the characters: `"a","c","d","e","g","i","l","m","n","o","p","r","s","t","u","w"`.

Function:

```
function assignment3(str) {
    var h = 7;
    var letters = ["a","c","d","e","g","i","l","m","n","o","p",
"r","s","t","u","w"];
    for (var i = 0; i < str.length; i++) {
        var letter = str[i];
        var index = letters.indexOf(letter);
        h = (h * 37) + index;
    }
    return h;
}
```

`assignment3("leepdag")` produces the number: `680131662011`

What does the code do?

Given a **String** formed with any of these characters `"a,c,d,e,g,i,l,m,n,o,p,r,s,t,u,w"` it gives you a **Int64** for that **String**.

For example the string leepdag has the hash number of `680131662011` . Please use the `assingment3` function to see if you have the *correct answer*.

> Note Provide all and any code that you use to solve this problem. (Preferably in Javascript)