HW4 - Javascript 2

0. Leetcode

https://leetcode.com/problem-list/oizxjoit/

每天1-3道题，需要用JavaScript或者TypeScript

1. 问答练习(八股）

准备以下八股题目答案, 写在 `note.md` 里

1. What are 3 ways to declare functions? What is their syntax?

2. What is the DOM?

3. How can you select an HTML element using JS?

4. What is a DOM event?

5. How do we register event handlers for a selected element?

6. Explain event delegation. Why is it important?

7. What is event propagation? How many phases are there? In what order does it occur?

8. Explain event bubbling and event capturing.

9. What is an IIF

10. What is the use of preventDefault method?

11. Can you name some of the new ES6 features?

小组间Peer Mock，录音并上传

2. Coding

1. Given the following array and implement the table dynamically. (Basic UI is enough)

```javascript
const tableInfo = {
  tableHeader: ["Student Name", "Age", "Phone", "Address"],
  tableContent: [
    {
      "Student Name": "John",
      Age: 19,
      Phone: "455 - 983 - 0903",
      Address: "123 Ave, San Francisco, CA, 94011",
    },
    {
      "Student Name": "Alex",
      Age: 21,
      Phone: "455 - 983 - 0912",
      Address: "456 Rd, San Francisco, CA, 94012",
    },
    {
      "Student Name": "Josh",
      Age: 22,
      Phone: "455 - 345 - 0912",
      Address: "789 Dr, Newark, CA, 94016",
    },
    {
      "Student Name": "Matt",
      Age: 23,
      Phone: "321 - 345 - 0912",
      Address: "223 Dr, Sunnyvale, CA, 94016",
    },
  ],
};
```

Student Name	Age	Phone	Address
John	19	455-983-0903	123 Ave, San Francisco, CA, 94011
Alex	21	455-983-0912	456 Rd, San Francisco, CA, 94012
Josh	22	455-345-0912	789 Dr, Newark, CA, 94016
Matt	23	321-345-0912	223 Dr, Sunnyvale, CA, 94016

2. Consider the following code snippet. Assume that it works and was imported into a .html file
with the proper button IDs.

```
for (var i = 1; i <= 3; i++) {
  document.getElementById(`btn${i}`).addEventListener('click', function () {
    console.log(`you just clicked #${i} button`);
}) }
```

a. What is the console output when the user clicks on "Button 3" and why?

b. How would we fix the issue before ES6? How do we fix it after ES6?

2. Given the following UI and HTML code, implement the following features, while matching the styling **as closely** as possible.

a. By default, the London tab is selected and only its content is displayed.

b. When the user clicks on a tab, it is the only one that becomes highlighted, and only the corresponding content will be displayed.

c. Ex: The user clicks 'Paris', so only the 'Paris' content is displayed.

(hint1: event delegation is preferred)

(hint2: ele.classList.toggle('specific class you'd like to add'))

London   Paris   Tokyo

London

London is the capital city of England.

```html
<div>
  <button>London</button>
  <button>Paris</button>
  <button>Tokyo</button>
</div>
<div>
  <h2>London</h2>
  <p>London is the capital city of England</p>
</div>
<div>
  <h2>Paris</h2>
  <p>Paris is the capital of France.</p>
</div>
<div>
  <h2>Tokyo</h2>
  <p>Tokyo is the capital of Japan.</p>
</div>
```

3. Longest Substring Without Repeating Characters (coding + algorithm)

   Given a string s, find the length of the longest substring without repeating characters.

   Implement a basic UI where users may type the inputs to your function and click submit button.

a. This takes the user input, passes it as arguments to your function, and calculates the output.

b. This output should be displayed on the webpage dynamically.

Example 1:
Input: s='abcabcbb'
Output: 3
Explanation: The answer is "abc", with the length of 3.

Example 2:
Input: s='bbbbbb'
Output: 1
Explanation: The answer is "b", with the length of 1.

Example 3:
Input: s='pwwkew'
Output: 3
Explanation: The answer is "wke", with the length of 3. Notice that the answer must be a substring, "pwke" is a subsequence and not a substring.

(hint: To get the value of desired input box → inputElement.value)