Assessment Questions

1. **Write a function that prints the numbers from 1 to 100. But for multiples of three, print "Fizz" instead of the number, and for the multiples of five, print "Buzz". For numbers that are multiples of both three and five, print "FizzBuzz".**

CODE:

```
function fizzBuzz() {
    for (let i = 1; i <= 100; i++) {
        if (i % 3 === 0 && i % 5 === 0) {
            console.log("FizzBuzz");
        } else if (i % 3 === 0) {
            console.log("Fizz");
        } else if (i % 5 === 0) {
            console.log("Buzz");
        } else {
            console.log(i);
        }
    }
}

fizzBuzz();
```

index.html × script.js ×

```javascript
function fizzBuzz() {
    for (let i = 1; i <= 100; i++) {
        if (i % 3 === 0 && i % 5 === 0) {
            console.log("FizzBuzz");
        } else if (i % 3 === 0) {
            console.log("Fizz");
        } else if (i % 5 === 0) {
            console.log("Buzz");
        } else {
            console.log(i);
        }
    }
}

fizzBuzz();
```

Console ×

```
26
Fizz
28
29
FizzBuzz
31
```

2. **Write a function that takes a string input representing a simple arithmetic expression (only addition and subtraction) and returns the result.**

CODE:

function evaluateExpression(expression) {

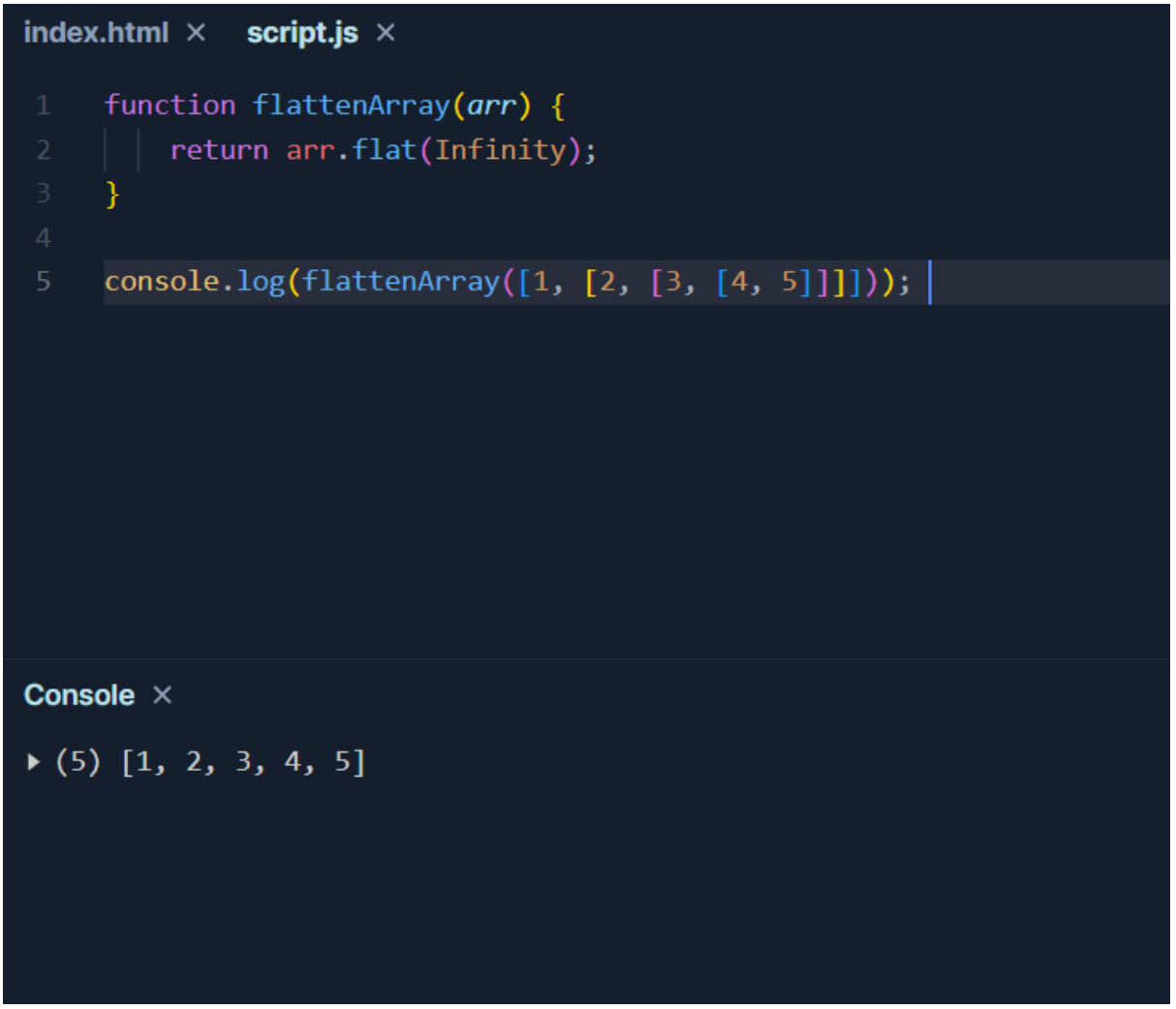
```
    return eval(expression);
}

console.log(evaluateExpression("3 + 5 - 2"));
```

3. **Write a function that takes a nested array and returns a flattened array.**

   CODE:

```
function flattenArray(arr) {
    return arr.flat(Infinity);
}
```

console.log(flattenArray([1, [2, [3, [4, 5]]]]));



4. **Write a function that checks if two given strings are anagrams of each other.**

CODE:

```
function areAnagrams(str1, str2) {

    const normalize = str => str.split('').sort().join('');

    return normalize(str1) === normalize(str2);

}
```

console.log(areAnagrams("listen", "silent"));

index.html × script.js ×

```
function areAnagrams(str1, str2) {
    const normalize = str => str.split('').sort().join('');
    return normalize(str1) === normalize(str2);
}

console.log(areAnagrams("listen", "silent"));
```

Console ×

```
true
```

5. **Write a function that takes an array and returns a new array with duplicates removed.**

   CODE:

   function removeDuplicates(arr) {

   return [...new Set(arr)];

   }

   console.log(removeDuplicates([1, 2, 2, 3, 4, 4, 5]));

index.html × script.js ×

```
function removeDuplicates(arr) {
    return [...new Set(arr)];
}

console.log(removeDuplicates([1, 2, 2, 3, 4, 4, 5]));
```

Console ×

```
▸ (5) [1, 2, 3, 4, 5]
```

6. **Write a function that takes a string and capitalizes the first letter of each word in the string.**

CODE:

```
function capitalizeWords(str) {

    return str.split(' ').map(word => word.charAt(0).toUpperCase() + word.slice(1)).join(' ');

}



console.log(capitalizeWords("hello world"));
```

7. **Write a function that generates the first n numbers of the Fibonacci sequence.**

CODE:

```
function fibonacci(n) {

    const sequence = [0, 1];

    for (let i = 2; i < n; i++) {

        sequence.push(sequence[i - 1] + sequence[i - 2]);

    }

    return sequence.slice(0, n);

}



console.log(fibonacci(10));
```

index.html × script.js ×

```javascript
function fibonacci(n) {
    const sequence = [0, 1];
    for (let i = 2; i < n; i++) {
        sequence.push(sequence[i - 1] + sequence[i - 2]);
    }
    return sequence.slice(0, n);
}

console.log(fibonacci(10));
```

Console ×

```
▸ (10) [0, 1, 1, 2, 3, 5, 8, 13, 21, 34]
```

8. **Implement a simple HashMap class with `put`, `get`, and `remove` methods.**

CODE:

```
class HashMap {

    constructor() {

        this.map = {};

    }



    put(key, value) {

        this.map[key] = value;

    }
```

```
    get(key) {
        return this.map[key];
    }

    remove(key) {
        delete this.map[key];
    }
}

const map = new HashMap();
map.put("name", "John");
console.log(map.get("name"));
map.remove("name");
console.log(map.get("name"));
```

index.html × script.js ×

```javascript
class HashMap {
    constructor() {
        this.map = {};
    }

    put(key, value) {
        this.map[key] = value;
    }

    get(key) {
        return this.map[key];
    }

    remove(key) {
        delete this.map[key];
    }
}

const map = new HashMap();
map.put("name", "John");
console.log(map.get("name"));
map.remove("name");
console.log(map.get("name"));
```

Console ×

```
John
undefined
```

9. **Write a function that filters out even numbers from an array.**

CODE:

```
function filterEvenNumbers(arr) {

    return arr.filter(num => num % 2 !== 0);

}



console.log(filterEvenNumbers([1, 2, 3, 4, 5, 6]));
```

index.html × script.js ×

```
1 function filterEvenNumbers(arr) {
2     return arr.filter(num => num % 2 !== 0);
3 }
4
5 console.log(filterEvenNumbers([1, 2, 3, 4, 5, 6]));
```

Console ×

```
▸ (3) [1, 3, 5]
```

10. **Write a function that converts a given string to title case (capitalizing the first letter of each word).**

CODE:

```
function toTitleCase(str) {

    return str.split(' ').map(word => word.charAt(0).toUpperCase() + word.slice(1)).join(' ');

}



console.log(toTitleCase("this is a title case example"));
```