***Javascript Assignment - 17 – Iterators***

***1. Create a function to iterate over the following list [“John”,***

***“Rohn”, “Danny”, “James”]***

*const names = ["John", "Rohn", "Danny", "James"];*

*function nameIterator(names) {*

*let index = 0;*

*return {*

*next: function() {*

*if (index < names.length) {*

*return { value: names[index++], done: false };*

*} else {*

*return { done: true };*

*}*

*}*

*}*

*}*

*const iterator = nameIterator(names);*

*console.log(iterator.next().value); // Output: John*

*console.log(iterator.next().value); // Output: Rohn*

*console.log(iterator.next().value); // Output: Danny*

*console.log(iterator.next().value); // Output: James*

***2. Iterate over all the characters of the word “iNeuron”.***

*Here's an example of how you could iterate over all the characters of the word "iNeuron" using a for...of loop:*

*const word = "iNeuron";*

*for (const char of word) {*

*console.log(char);*

*}*

***3. Create a functional iterator, with a next function.***

*function createIterator(array) {*

*let index = 0;*

*return {*

*next: function() {*

*if (index < array.length) {*

*return { value: array[index++], done: false };*

*} else {*

*return { done: true };*

*}*

*}*

*};*

*}*

*const myArray = [1, 2, 3, 4, 5];*

*const myIterator = createIterator(myArray);*

*let result = myIterator.next();*

*while (!result.done) {*

*console.log(result.value);*

*result = myIterator.next();*

*}*

***4. In the following two arrays find which two elements match***

***using iterators.***

***Array 1 - [“a”, “b”, “c”, “d”]***

***Array 2 - [“e”, “f”, “g”, “h”, “a”, “i”, “j”]***

*const array1 = ["a", "b", "c", "d"];*

*const array2 = ["e", "f", "g", "h", "a", "i", "j"];*

*// Create an iterator for each array*

*const iterator1 = array1[Symbol.iterator]();*

*const iterator2 = array2[Symbol.iterator]();*

*// Loop through the first iterator*

*let result = iterator1.next();*

*while (!result.done) {*

*const value1 = result.value;*

*// Loop through the second iterator*

*let result2 = iterator2.next();*

*while (!result2.done) {*

*const value2 = result2.value;*

*// Check if the values match*

*if (value1 === value2) {*

*console.log(`Match found: ${value1}`);*

*}*

*result2 = iterator2.next();*

*}*

*// Reset the second iterator for the next iteration of the first iterator*

*iterator2[Symbol.iterator]();*

*result = iterator1.next();*

*}*

***5. What are the different ways of iterating through an array?***

***demonstrate them.***

*There are several ways of iterating through an array in JavaScript. Here are a few examples:*

1. *For loop:*

*let arr = [1, 2, 3, 4, 5];*

*for (let i = 0; i < arr.length; i++) {*

*console.log(arr[i]);*

*}*

1. *For...of loop:*

*let arr = [1, 2, 3, 4, 5];*

*for (let value of arr) {*

*console.log(value);*

*}*

1. *forEach() method:*

*let arr = [1, 2, 3, 4, 5];*

*arr.forEach(function(value) {*

*console.log(value);*

*});*

1. *Map() method:*

*let arr = [1, 2, 3, 4, 5];*

*let result = arr.map(function(value) {*

*return value \* 2;*

*});*

*console.log(result);*

1. *Filter() method:*

*let arr = [1, 2, 3, 4, 5];*

*let result = arr.filter(function(value) {*

*return value > 2;*

*});*

*console.log(result);*

1. *Reduce() method:*

*let arr = [1, 2, 3, 4, 5];*

*let result = arr.reduce(function(sum, value) {*

*return sum + value;*

*}, 0);*

*console.log(result);*