**Anonymous function & IIFE**

1. **Print odd numbers in an array using anonymous function & IIFE**

const numbers = [1, 2, 3, 4, 5, 6, 7, 8, 9];

(function(arr) {

console.log("Odd numbers in the array:");

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

if (arr[i] % 2 !== 0) {

console.log(arr[i]);

}

}

})(numbers);

1. **Convert all the strings to title caps in a string array using anonymous function & IIFE**

const stringArray = ["hello world", "good morning", "have a nice day"];

(function(arr) {

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

arr[i] = arr[i].replace(/\w\S\*/g, function(txt) {

return txt.charAt(0).toUpperCase() + txt.substr(1).toLowerCase();

});

}

})(stringArray);

console.log(stringArray);

1. **Sum of all numbers in an array using anonymous function & IIFE**

const numbers = [1, 2, 3, 4, 5];

const sum = (function(arr) {

let result = 0;

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

result += arr[i];

}

return result;

})(numbers);

console.log("Sum of all numbers:", sum);

1. **Return all the prime numbers in an array using anonymous function & IIFE**

const numbers = [2, 3, 5, 7, 10, 11, 13, 15];

const primeNumbers = (function(arr) {

function isPrime(num) {

if (num <= 1) return false;

if (num <= 3) return true;

if (num % 2 === 0 || num % 3 === 0) return false;

for (let i = 5; i \* i <= num; i += 6) {

if (num % i === 0 || num % (i + 2) === 0) return false;

}

return true;

}

return arr.filter((num) => isPrime(num));

})(numbers);

console.log("Prime numbers:", primeNumbers);

1. **Return all the palindromes in an array using anonymous function & IIFE**

const words = ["level", "hello", "radar", "world", "madam", "programming"];

const palindromes = (function(arr) {

function isPalindrome(word) {

const cleanWord = word.toLowerCase().replace(/[^a-z]/g, ""); // Remove non-alphabet characters and make it lowercase

const reversedWord = cleanWord.split('').reverse().join('');

return cleanWord === reversedWord;

}

return arr.filter((word) => isPalindrome(word));

})(words);

console.log("Palindromes:", palindromes);

1. **Return median of two sorted arrays of the same size anonymous function & IIFE**

const arr1 = [1, 3, 8, 9, 15];

const arr2 = [7, 11, 18, 19, 21];

const median = (function(arr1, arr2) {

const mergedArray = [...arr1, ...arr2].sort((a, b) => a - b);

const mid = Math.floor(mergedArray.length / 2);

if (mergedArray.length % 2 === 0) {

// If the merged array has an even number of elements, calculate the average of the two middle elements.

return (mergedArray[mid - 1] + mergedArray[mid]) / 2;

} else {

// If the merged array has an odd number of elements, return the middle element.

return mergedArray[mid];

}

})(arr1, arr2);

console.log("Median:", median);

1. **Remove duplicates from an array using anonymous function & IIFE**

const originalArray = [1, 2, 2, 3, 4, 4, 5, 5, 6];

const uniqueArray = (function(arr) {

const uniqueValues = [];

arr.forEach((item) => {

if (!uniqueValues.includes(item)) {

uniqueValues.push(item);

}

});

return uniqueValues;

})(originalArray);

console.log("Array with duplicates removed:", uniqueArray);

1. **Rotate an array by k times using anonymous function & IIFE**

const originalArray = [1, 2, 3, 4, 5];

const k = 2; // Number of times to rotate

const rotatedArray = (function(arr, rotations) {

const len = arr.length;

const rotated = [...arr]; // Create a copy of the original array

for (let i = 0; i < rotations; i++) {

const firstElement = rotated.shift(); // Remove the first element

rotated.push(firstElement); // Add the removed element to the end

}

return rotated;

})(originalArray, k);

console.log("Rotated array:", rotatedArray);

**Arrow Function**

1. **Print odd numbers in an array using arrow function**

const numbers = [1, 2, 3, 4, 5, 6, 7, 8, 9];

const oddNumbers = numbers.filter(number => number % 2 !== 0);

console.log("Odd numbers in the array:", oddNumbers);

1. **Convert all the strings to title caps in a string array using arrow function**

const stringArray = ["hello world", "good morning", "have a nice day"];

const titleCapsArray = stringArray.map(str => {

return str

.split(' ')

.map(word => word.charAt(0).toUpperCase() + word.slice(1).toLowerCase())

.join(' ');

});

console.log("Strings in title caps:", titleCapsArray);

1. **Sum of all numbers in an array using arrow function**

const numbers = [1, 2, 3, 4, 5];

const sum = numbers.reduce((accumulator, currentValue) => accumulator + currentValue, 0);

console.log("Sum of all numbers:", sum);

1. **Return all the prime numbers in an array using arrow function**

const numbers = [2, 3, 5, 7, 10, 11, 13, 15];

const isPrime = (num) => {

if (num <= 1) return false;

if (num <= 3) return true;

if (num % 2 === 0 || num % 3 === 0) return false;

for (let i = 5; i \* i <= num; i += 6) {

if (num % i === 0 || num % (i + 2) === 0) return false;

}

return true;

};

const primeNumbers = numbers.filter(isPrime);

console.log("Prime numbers:", primeNumbers);

1. **Return all the palindromes in an array using arrow function**

const words = ["level", "hello", "radar", "world", "madam", "programming"];

const isPalindrome = (word) => {

const cleanWord = word.toLowerCase().replace(/[^a-z]/g, ""); // Remove non-alphabet characters and make it lowercase

const reversedWord = cleanWord.split('').reverse().join('');

return cleanWord === reversedWord;

};

const palindromeWords = words.filter(isPalindrome);

console.log("Palindromes:", palindromeWords);