**// 1. Print odd number in an array**

**//ANONYMUS**

let num\_array = [2,10,9,7,5,36,42,58,69,50];

let odd\_array = []

let odd = (a) =>{

    if(a%2 != 0)

        odd\_array.push(a)

    return odd\_array

}

num\_array.forEach(element => {

    odd(element)

});

console.log(odd\_array.join(', '));

**// IIFE**

(function(arr) {

    arr.forEach(function(num) {

        if (num % 2 !== 0) {

            console.log(num);

        }

    });

})([2,10,9,7,5,36,42,58,69,50]);

**// ARRAOW FUNCTION**

let printOddNumbers = (arr) => {

    arr.forEach(num => {

        if (num % 2 !== 0) {

            console.log(num);

        }

    });

};

printOddNumbers([2,10,9,7,5,36,42,58,69,50]);

**//2. Converting all the strings to title caps in a string array**

**// Anonymous Function**

let convertToTitleCaps = function(arr) {

    return arr.map(function(str) {

        return str.charAt(0).toUpperCase() + str.slice(1).toLowerCase();

    });

};

console.log(convertToTitleCaps(["hello", "world", "javascript"]));

**// IIFE**

let titleCaps = (function(arr) {

    return arr.map(function(str) {

        return str.charAt(0).toUpperCase() + str.slice(1).toLowerCase();

    });

})(["hello", "world", "javascript"]);

console.log(titleCaps);

**// Arrow function**

let string\_array = ["i", "am", "from", "tamil", "nadu"];

let capitalized\_array = [];

let convertToCapital = (strArray) => {

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

        capitalized\_array.push(strArray[i].toUpperCase());

    }

    return capitalized\_array;

}

console.log("String array: ["+string\_array+"]")

console.log("Converted string: ["+convertToCapital(string\_array)+"]");

**// 3. sum all the numbers in the array**

**// Anonymous Function**

let sumOfNumbers = function(arr) {

    return arr.reduce(function(sum, num) {

        return sum + num;

    }, 0);

};

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

**// IIFE**

let sum = (function(arr) {

    return arr.reduce(function(sum, num) {

        return sum + num;

    }, 0);

})([2,10,9,7,5,36,42,58,69,50]);

console.log(sum);

**// Arrow function**

let sumofNumbers = (arr) => {

    return arr.reduce((sum, num) => sum + num, 0);

};

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

**// 4. Return all the prime numbers in the array**

**// Anonymous Function**

let getPrimeNumbers = function(arr) {

    return arr.filter(function(num) {

        if (num <= 1) return false;

        for (let i = 2; i <= Math.sqrt(num); i++) {

            if (num % i === 0) return false;

        }

        return true;

    });

};

console.log(getPrimeNumbers([2,10,9,7,5,36,42,58,69,50]));

**// IIFE**

let primes = (function(arr) {

    return arr.filter(function(num) {

        if (num <= 1) return false;

        for (let i = 2; i <= Math.sqrt(num); i++) {

            if (num % i === 0) return false;         }

        return true;     });

})([2,10,9,7,5,36,42,58,69,50]);

console.log(primes);

**// arrow function**

let getprimeNumbers = (arr) => {

    return arr.filter(num => {

        if (num <= 1) return false;

        for (let i = 2; i <= Math.sqrt(num); i++) {

            if (num % i === 0) return false;        }

        return true;    });

};

console.log(getprimeNumbers([1, 2, 3, 4, 5, 6, 7, 8, 9, 10]));

**// 5.  Return all the palindromes in an array**

**// Anonymous Function**

let getPalindromes = function(arr) {

    return arr.filter(function(str) {

        return str.toLowerCase() === str.toLowerCase().split('').reverse().join('');

    });

};

console.log(getPalindromes(["level", "hello", "world", "madam", "javascript", "racecar"]));

**// IIFE**

let palindromes = (function(arr) {

    return arr.filter(function(str) {

        return str.toLowerCase() === str.toLowerCase().split('').reverse().join('');

    });

})(["level", "hello", "world", "madam", "javascript", "racecar"]);

console.log(palindromes);

**// arrow function**

let getpalindromes = (arr) => {

    return arr.filter(str => str.toLowerCase() === str.toLowerCase().split('').reverse().join(''));

};

console.log(getpalindromes(["level", "hello", "world", "madam", "javascript", "racecar"]));

**//6. Return median of two sorted arrays of the same size.**

**// Anonymous Function**

let medianOfArrays = function(arr1, arr2) {

    let mergedArray = arr1.concat(arr2).sort((a, b) => a - b);

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

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

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

    } else {

        return mergedArray[mid];

    }

};

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

**// IIFE**

let median = (function(arr1, arr2) {

    let mergedArray = arr1.concat(arr2).sort((a, b) => a - b);

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

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

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

    } else {

        return mergedArray[mid];

    }

})([1, 3, 5], [2, 4, 6]);

console.log(median);

**// 7. Remove duplicates from an array**

**// Anonymous Function**

let removeDuplicates = function(arr) {

    return arr.filter(function(item, index) {

        return arr.indexOf(item) === index;

    });

};

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

**// IIFE**

let uniqueArray = (function(arr) {

    return arr.filter(function(item, index) {

        return arr.indexOf(item) === index;

    });

})([1, 2, 2, 3, 4, 4, 5]);

console.log(uniqueArray);