**1. Do the below programs in anonymous function & IIFE**

**a. Print odd numbers in an array**

**using anonymous function**

**let arr=[1,2,3,4,5,6];**

**var odd=function(arr) {**

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

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

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

**}**

**}**

**}**

**odd(arr)**

##### Output:

1

3

5

**using IIFE function**

**let arr=[1,2,3,4,5,6];**

**(function() {**

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

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

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

**}**

**}**

**} ) ()**

**output**

1

3

5

**b. Convert all the strings to title caps in a string array**

**using anonymous function**

**var fn=function(str) {**

**str= str.toLowerCase();**

**str=str.split(' ');**

**for(var i=0; i<str.length; i++) {**

**str[i] = str[i].charAt(0).toUpperCase() + str[i].slice(1)**

**}**

**return str.join(" ")**

**}**

**console.log(fn("hi HELLO how are you"))**

**Output**

Hi Hello How Are You

**using IIFE function**

**(function(str) {**

**str= str.toLowerCase();**

**str=str.split(' ');**

**for(var i=0; i<str.length; i++) {**

**str[i] = str[i].charAt(0).toUpperCase() + str[i].slice(1)**

**}**

**console.log(str.join(" "))**

**})("hi heLLo weLCOme")**

##### Output:

Hi Hello Welcome

**c. Sum of all numbers in an array**

**Using Anonymous function**

**let arr=[1,2,3,4,5,6,6];**

**let sum=0;**

**let res=function(arr) {**

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

**sum=sum + arr[i]**

**}**

**return sum;**

**}**

**console.log(res(arr))**

##### Output:

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**Using IIFE**

**let arr=[1,2,3,4,5,6];**

**let sum=0;**

**(function(arr) {**

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

**sum=sum + arr[i]**

**}**

**//return sum;**

**console.log(sum)**

**}) (arr)**

Output

21

**d. Return all the prime numbers in an array**

**Using Anonymous function**

**var array = [1,2,3,4,5,6,7,8,9,10];**

**var isPrime=function(num) {**

**for (let i = 2; num > i; i++) {**

**if (num % i == 0) {**

**return false;**

**}**

**}**

**return num > 1;**

**}**

**console.log(array.filter(isPrime));**

**Output:**

[ 2, 3, 5, 7 ]

**Method 2**

**let arr = [3, 12, 50, 23, 0,5, 7, 8, 10];**

**var prime=function(number) {**

**if (number <= 1) {**

**return false;**

**} else {**

**for (let i = 2; i < number; i++) {**

**if (number % i == 0) {**

**return false;**

**}**

**}**

**return true;**

**}**

**}**

**arr.forEach(function (element) {**

**const isPrime = prime(element);**

**if (isPrime) {**

**console.log(`${element} is a prime number`);**

**} else {**

**console.log(`${element} is NOT a prime number`);**

**}**

**});**

##### Output:

3 is a prime number

12 is NOT a prime number

50 is NOT a prime number

23 is a prime number

0 is NOT a prime number

5 is a prime number

7 is a prime number

8 is NOT a prime number

10 is NOT a prime number

**Using IIFE**

**console.log((function(arr) {**

**return arr.filter((number) => {**

**for(var i=2; i<=Math.sqrt(number); i++) {**

**if(number%i === 0) return false;**

**}**

**return true;**

**});**

**}) ([3,4,5,6,7,8,9,10]))**

##### Output:

[ 3, 5, 7]

**e. Return all the palindromes in an array**

**Using Anonymous function**

**let arr = ['action', 'level', 'orange', 'wow', 'radar'];**

**let palindrome=function(word) {**

**let firstHalf = word.slice(0, Math.ceil(word.length/2));**

**let secondHalfReversed = word.slice(Math.floor(word.length/2)).split('').reverse().join('');**

**return firstHalf === secondHalfReversed;**

**}**

**function getPalindromesFromArray(arr) {**

**return arr.filter(palindrome);**

**}**

**console.log(getPalindromesFromArray(arr));**

##### Output:

[ 'level', 'wow', 'radar']

**Using IIFE**

**console.log((function(arr) {**

**var temp=[];**

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

**let str=arr[i];**

**let strrev=str.split("").reverse().join("")**

**if(str === strrev) {**

**temp.push(strrev);**

**}**

**}**

**return temp;**

**}) (["civic", "radar"]) )**

##### Output:

[ 'civic', 'radar']

**f. Return median of two sorted arrays of same size**

**Using Anonymous function**

**let arr1=[1,2,3,4]**

**let arr2=[4,5,6,7]**

**let median = (a, b) => {**

//Sort the array

**let arr = [...a, ...b].sort((a, b) => a - b);**

//Get the floor value

**let half = Math.floor(arr.length / 2 );**

//If odd then return middle element

**if (arr.length % 2) return arr[half];**

//here c.length is 8 . so 8%2 is 0 . so then return will work

**//If even then return the average of two mid elements**

**return (arr[half] + arr[half - 1]) / 2;**

**}**

**console.log(median(arr1,arr2))**

##### Output:

4

**Using IIFE**

**(function median(a,b) {**

//Sort the array

**let arr = [...a, ...b].sort((a, b) => a - b);**

//Get the floor value

**let half = Math.floor(arr.length / 2 );**

//If odd then return middle element

**if (arr.length % 2)**

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

**//here c.length is 5 . so 5%2 is 1 . so if will work**

**else**

//If even then return the average of two mid elements

**console.log((arr[half] + arr[half - 1]) / 2);**

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

##### Output:

3

**g. Remove duplicates from an array**

**Using Anonymous Function**

**let arr=[1,2,1,5,6,6,8,9,9,10];**

**let unique=function(arr) {**

**let arr2=[...new Set(arr)];**

**console.log(arr2)**

**}**

**unique(arr)**

##### Output:

[ 1, 2, 5, 6, 8, 9, 10 ]

**Using IIFE**

**let arr=[1,2,1,5,6,6,8,9,9,10,11];**

**(function(arr) {**

**let arr2=[...new Set(arr)];**

**console.log(arr2)**

**}) (arr)**

##### Output:

[ 1, 2, 5, 6, 8, 9, 10, 11 ]

**h. Rotate an array by k times**

**Using Anonymous Function**

**num = [1, 2, 3, 4, 5,6]**

**k=1**

**let rotate= function(num, k) {**

**for (let i = 0; i < k; i++) {**

**num.unshift(num.pop());**

**}**

**console.log(num)**

**}**

**rotate(num,k)**

##### Output:

[ 6, 1, 2, 3, 4, 5 ]

**Using IIFE**

**(function rotate(num, k) {**

**for (let i = 0; i < k; i++) {**

**num.unshift(num.pop());**

**}**

**console.log(num)**

**}) ([1,2,3,4],1)**

##### Output:

[ 4, 1, 2, 3 ]