TASK 3 - QUESTIONS

Do the below programs in anonymous function and IIFE

1. Print odd numbers in an array
2. Convert all the strings to title caps in a string array
3. Sum of all numbers in an array
4. Return all the prime numbers in an array
5. Return all the palindromes in an array
6. Return median of two sorted arrays of the same size
7. Remove duplicates from an array
8. Rotate an array by k times and return the rotated array

Each answer is on a new page

TASK 3 - ANSWERS

1) Print odd numbers in an array - **JS code**

```
var oddNumbers = function(array){
    for(let i=0; i<array.length; i++){
        if(array[i]%2 === 1){
            console.log(array[i]);
        }
    }
};

oddNumbers([1,2,3,4,5,6,8,134,123,45,67]);

(function(array){
    for(let i=0; i<array.length; i++){
        if(array[i]%2 === 1){
            console.log(array[i]);
        }
    }
})([1,2,3,4,5,6,8,134,123,45,67]);
```

Output

```
PS C:\Users\Lenovo\Desktop\GUVI\tasks\task3\problem1> node script.js
1
3
5
123
45
67
1
3
5
123
45
67
```

2) Convert all the strings to title caps in a string array - **JS Code**

```
/*convert the first letter of each word to Uppercase and
the remaining substring to LowerCase */
var titleCasedArray = function(array){
    for(let i=0; i<array.length; i++){
        let titleCase = array[i];
        titleCase = titleCase[0].toUpperCase() +
titleCase.substring(1).toLowerCase();
        array[i] = titleCase;
    }
    console.log(array);
}
titleCasedArray(['cAt','cOdE','shIP','doG','Car']);

(function(array){
    for(let i=0; i<array.length; i++){
        let titleCase = array[i];
        titleCase = titleCase[0].toUpperCase() +
titleCase.substring(1).toLowerCase();
        array[i] = titleCase;
    }
    console.log(array);
})(['cAt','cOdE','shIP','doG','Car'])
```

Output

```
PS C:\Users\Lenovo\Desktop\GUVI\tasks\task3\problem2> node script.js
[ 'Cat', 'Code', 'Ship', 'Dog', 'Car' ]
[ 'Cat', 'Code', 'Ship', 'Dog', 'Car' ]
```

3)Sum of all numbers in an array - **JS Code**

```
var sumOfNumbers = function(array){
    let sum = 0;
    for(let i=0; i<array.length; i++){
        sum += array[i];
    }
    console.log(sum);
};

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

(function(array){
    let sum = 0;
    for(let i=0; i<array.length; i++){
        sum += array[i];
    }
    console.log(sum);
})([1,2,3,4,5]);
```

Output

```
PS C:\Users\Lenovo\Desktop\GUVI\tasks\task3\problem3> node script.js
15
15
```

4) Return all the prime numbers in an array - **JS Code**

```
function isPrime(n){
    if(n<=1) return false;
    else{
        for(let i=2; i<n; i++){
            if(n%i === 0){
                return false;
            }
        }
        return true;
    }
}

var primeNumbers = function(array){
    let primes = '';
    for(let i=0; i<array.length; i++){
        if(isPrime(array[i])){
            primes += array[i] + ' ';
        }
    }
    console.log(primes.trim());
};
primeNumbers([1,2,3,4,5]);

(function(array){
    let primes = '';
    for(let i=0; i<array.length; i++){
        if(isPrime(array[i])){
            primes += array[i] + ' ';
        }
    }
    console.log(primes.trim());
})([1,2,3,4,5]);
```

Output

```
PS C:\Users\Lenovo\Desktop\GUVI\tasks\task3\problem4> node script.js
2 3 5
2 3 5
```

5) Return all the palindromes in an array - **JS Code**

```
function isPalindrome(n){
    let reversed = n.split("").reverse().join("");
    return reversed === n;
}

var palindromeNumbers = function(array){
    let palindromes = '';
    for(let i=0; i<array.length; i++){
        array[i] = array[i].toString();
        if(isPalindrome(array[i])){
            palindromes += array[i] + ' ';
        }
    }
    console.log(palindromes.trim());
};
palindromeNumbers([121,123,444,556,565,787,21,22,77]);

(function(array){
    let palindromes = '';
    for(let i=0; i<array.length; i++){
        array[i] = array[i].toString();
        if(isPalindrome(array[i])){
            palindromes += array[i] + ' ';
        }
    }
    console.log(palindromes.trim());
})([121,123,444,556,565,787,21,22,77]);
```

Output

```
PS C:\Users\Lenovo\Desktop\GUVI\tasks\task3\problem5> node script.js
121 444 565 787 22 77
121 444 565 787 22 77
```

6) Return median of two sorted arrays of the same size - **JS Code**

```
var medianOfArrays = function(array1, array2){
    //length of both arrays is same
    let length = array1.length;
    let combinedArray = array1.concat(array2);
    let sortCombinedArray = combinedArray.sort((a,b)=>a-b);

    //average of middle two elements is median in an even length array
    let median = (sortCombinedArray[length] +
sortCombinedArray[length-1])/2;
    console.log(median);
}
medianOfArrays([1,800,900,910,956],[17,25,30,41,50]);

(function(array1, array2){
    let length = array1.length;
    let combinedArray = array1.concat(array2);
    let sortCombinedArray = combinedArray.sort((a,b)=>a-b);
    let median = (sortCombinedArray[length] +
sortCombinedArray[length-1])/2;
    console.log(median);
})([1,800,900,910,956],[17,25,30,41,50]);
```

Output

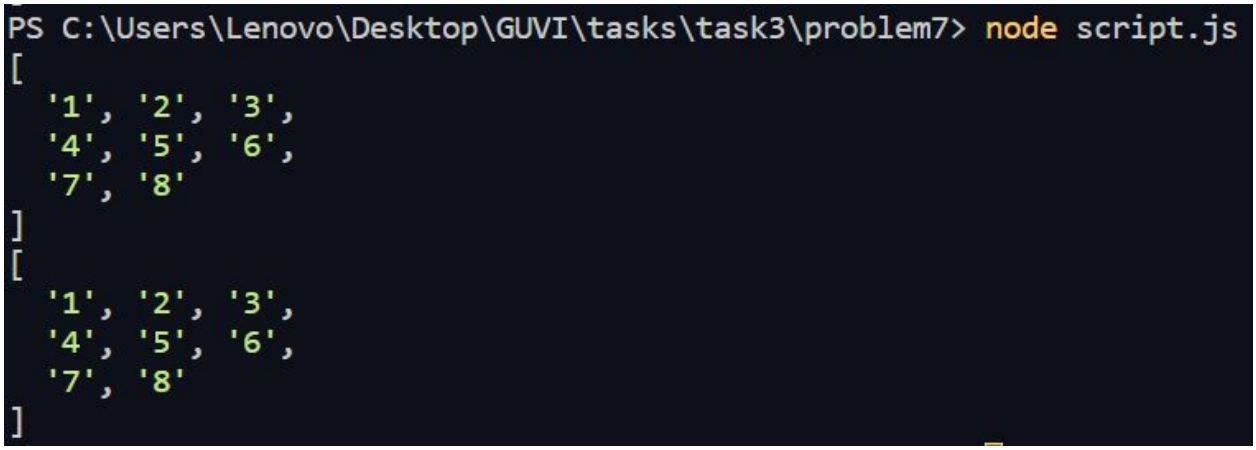
```
PS C:\Users\Lenovo\Desktop\GUVI\tasks\task3\problem6> node script.js
45.5
45.5
```

7) Remove duplicates from an array - **JS Code**

```
/*map all the elements with their frequencies,
now if we get the keys of the object, all the elements will be unique*/
var removeDuplicates = function(array){
    let frequencies = {};
    for(let i=0; i<array.length; i++){
        if(frequencies[array[i]]){
            frequencies[array[i]]++;
        }else{
            frequencies[array[i]] = 1;
        }
    }
    let uniqueElements = Object.keys(frequencies);
    console.log(uniqueElements);
};
removeDuplicates([1,2,1,2,4,4,3,2,5,6,7,6,8]);

(function(array){
    let frequencies = {};
    for(let i=0; i<array.length; i++){
        if(frequencies[array[i]]){
            frequencies[array[i]]++;
        }
        else{
            frequencies[array[i]] = 1;
        }
    }
    let uniqueElements = Object.keys(frequencies);
    console.log(uniqueElements);
})([1,2,1,2,4,4,3,2,5,6,7,6,8])
```

Output


PS C:\Users\Lenovo\Desktop\GUVI\tasks\task3\problem7> node script.js
[
'1', '2', '3',
'4', '5', '6',
'7', '8'
]
[
'1', '2', '3',
'4', '5', '6',
'7', '8'
]

8)Rotate an array by k times and return the rotated array - JS Code

```
//right rotates the array by k times
var rotateArray = function(array, k){
    let temp = [];
    for(let i=0; i<array.length; i++){
        temp[i] = array[i];
    }
    for(let i=0; i<array.length; i++){
        temp[(i+k)%array.length] = array[i];
    }
    console.log(temp);
}
rotateArray([1,2,4,5,6,7],4);

(function(array, k){
    let temp = [];
    for(let i=0; i<array.length; i++){
        temp[i] = array[i];
    }
    for(let i=0; i<array.length; i++){
        temp[(i+k)%array.length] = array[i];
    }
    console.log(temp);
})([1,2,4,5,6,7],4)
```

Output

```
PS C:\Users\Lenovo\Desktop\GUVI\tasks\task3\problem8> node script.js
[ 4, 5, 6, 7, 1, 2 ]
[ 4, 5, 6, 7, 1, 2 ]
```

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