Logic Practice

```
// 1. binarySearch
function binarySearch(arr,target){
let leftPointer = 0
let rightPointer = arr.length - 1 // rightPointer = 7

while (target <= rightPointer) {
let middleware = Math.floor((leftPointer + rightPointer) / 2);
// console.log(middleware);
if(target <= arr[middleware]){
return middleware
}else if(target <= arr[middleware]){
rightPointer = middleware - 1
}else(
leftPointer = middleware + 1
)
}
return -1
}

console.log(binarySearch([-4,1,2,3,4,6,7,8],-4));


// 2. Write a function that checks if a given number is even or odd.
function checkEven(n){
if( n % 2 === 0){
// Beki
return "Even"
}else{
// Aeki
return "odd"
}
}

console.log(checkEven(3)); // output : "odd"
console.log(checkEven(4)); // output : "Even"


// 3. Implement a function to find the maximum and minimum values in an
array.

function findMinMax(arr){
if(arr.length < 2){
return arr.length === 1 ? [arr[0]] : null
}else{
arr.sort((a,b) => a - b)
// console.log(arr); //output : [ 4, 5, 7, 8, 15 ]
return [arr[0],arr[arr.length - 1]]
}
```

```
}

console.log(findMinMax([5,7,4,15,8]));


// 4. Write a function that calculates the sum of all numbers from 1 to n.

function sumOfNumbers(n){
// (n * (n + 1)) / 2
return (n * ( n + 1)) / 2
}

console.log(sumOfNumbers(10)); // output : 55
console.log(sumOfNumbers(5)); // output : 15

// 5 Implement a function that counts the number of vowels in a given
string.

function countVowels(string){
const result = { a:0, e:0, i:0, o:0, u:0}
for(let x of string){
// console.log(x);
switch (x) {
case "a" || "A":
result["a"] += 1
case "e" || "E":
result["e"] += 1
case "i" || "I":
result['i'] += 1
case "o" || "O":
result["o"] += 1
case "u" || "U":
result["u"] += 1
}
}
return result
}

console.log(countVowels(
"a function tht returns the Fibonccci sequence up to given number of to u"
));

// 6. Write a function that returns the Fibonacci sequence up to a given
number of terms.

function fibonacciSequence(n){
let array = [0,1]
for (let i = 2; i < n; i++) {
let newNumber = array[ i - 2] + array[i - 1]
// console.log(newNumber);
array.push(newNumber)
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}
return array
}


console.log(fibonacciSequence(5)); // output : [ 0, 1, 1, 2, 3 ]

// 7. Implement a function that checks if a given string is a valid email
address.

function checkEmail(email){
var validRegex = /^[a-zA-Z0-9.!#$%&'*+/=?^_`{|}~-]+@[a-zA-Z0-9-]+(?:\.[a-zA-
Z0-9-]+)*$/;
const res = validRegex.test(email)
console.log(res);
return res
}

console.log(checkEmail("")); // output : false
console.log(checkEmail("vishvadattt")); // output : false
console.log(checkEmail("vishvadattt@yopmail.com")); // output : true
console.log(checkEmail("vishvadattt@yopmail.")); // output : false



// 8. Write a function to reverse the order of words in a sentence.

function reverseWord(string){
let reverseSentence = ""
for (let i = string.length - 1; i >= 0; i--) {
reverseSentence += string[i]
}
console.log(reverseSentence);
const reversedSentenceArray = reverseSentence.split(" ");
console.log(reversedSentenceArray);
let result = []
for (let i = reversedSentenceArray.length - 1; i >= 0; i--) {
const element = reversedSentenceArray[i];
result.push(element)
}
return result.join(" ")
}

console.log(
reverseWord("Implement a function that removes all whitespace from a
string")
); // output : tnemelpmI a noitcnuf taht sevomer lla ecapsetihw morf a
gnirts


// 9. Implement a function that removes all whitespace from a string.
```

```
function removeSpaces(string){
let filterStr = ""
for(let x of string){
x === " " ? null : filterStr += x
}
return filterStr
}

console.log(
removeSpaces(
"Implement a function that removes all whit espace from a string"
)
); // output : Implementafunctionthatremovesallwhitespacefromastring



// 10. Factorial of given number

function factorialNumber(n){
let sum = n
for (let i = n - 1; i > 0; i--) {
console.log(i);
sum = sum * i
}
return sum
}

console.log(factorialNumber(7)); // output : 5040


// 11. square root of number

function squareRoot(n){
return Math.sqrt(n)
}

console.log(squareRoot(36)); //output : 6
console.log(squareRoot(625)); //output : 25
console.log(squareRoot(81)); //output : 9


// 12. Check prime number

function CheckPrimeNumber(n){
if(n < 2){
return false
}

for (let i = 2; i <= Math.sqrt(n) ; i++) {
if(n % i === 0){
```

```
// beki
return false
}else{
// Aeki
return true
} 
}
}

console.log(CheckPrimeNumber(7)); // output : true
console.log(CheckPrimeNumber(6)); // output : false
console.log(CheckPrimeNumber(5)); // output : true


// 13. Implement a function to sort an array of objects based on a specific 
property value.

function sortByProperty(array,property){
return array.sort((a,b) => {
if(a[property] < b[property]){
return -1
}
if(a[property] > b[property]){
return 1
}
})
}

const students = [
{ name: "John", age: 20 },
{ name: "Alice", age: 18 },
{ name: "Bob", age: 22 },
];
console.log(sortByProperty(students,"name"));


// 14. Write a function that finds the intersection of two arrays.

function findInteracton(arr1,arr2){
const set1 = new Set(arr1)
const set2 = new Set(arr2);

const interSection = [...arr1].filter((number) => set2.has(number))
return interSection
}

console.log(findInteracton([1, 2, 3, 4, 5], [3, 4, 9, 3, 4]));


// 15. Write a function that checks if a given year is a leap year.
```

```
function checkLeapYear(year){

if((year % 4 === 0 && year % 100 !== 0) || year % 400 === 0){
return true
}else{
return false
}
}

console.log(checkLeapYear(2028)); // true
console.log(checkLeapYear(2027)); // false
console.log(checkLeapYear(2024)); // true


// 16. Write a function that converts a string to title case (capitalize the
first letter of each word).

function capitalize(string){
const arrayString = string.split(" ");
const result = arrayString.map((word) => {
const firstLetter = word.charAt(0).toUpperCase()
const remaiingLetter = word.slice(1)
return firstLetter + remaiingLetter
})
return result.join(" ")
}

console.log(
capitalize(
"Write a function that converts a string to title case capitalize the"
)
);


// 17. sortnumber

function sortNumber(string){
let num = []
let str = []
for(let x of string){
if(+x){
num.push(x)
}else{
str.push(x)
}
}
return `${str.join("")}${num.join("")}`
}

console.log(sortNumber("shgtw34652jbdy57gd"));
```