Javascript Assignment 3

1. Using for loops, write a Javascript program to output the following

pattern -

1

2 3

4 5 6

7 8 9 10

Ans:

function printPattern(rows) {

let counter = 1;

for (let i = 1; i <= rows; i++) {

let row = "";

for (let j = 1; j <= i; j++) {

row += counter + " ";

counter++;

}

console.log(row);

}

}

// Example usage with 4 rows:

printPattern(4);

1. Write a program to find whether a given number is armstrong number or

not-

The Armstrong number is a number that is equal to the sum of cubes of

its digits. For example 0, 1, 153, 370, 371 and 407 are the Armstrong

numbers. Let's try to understand why 153 is an Armstrong number.

153 = (1\*1\*1)+(5\*5\*5)+(3\*3\*3) where:

(1\*1\*1)=1

(5\*5\*5)=125

(3\*3\*3)=27

So:

1+125+27=153

Ans:

function isArmstrongNumber(number) {

// Convert the number to a string to count its digits

const numStr = number.toString();

const numDigits = numStr.length;

let sum = 0;

// Calculate the sum of cubes of its digits

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

const digit = parseInt(numStr[i]);

sum += Math.pow(digit, numDigits);

}

// Check if the sum is equal to the original number

return sum === number;

}

// Example usage:

const num = 153;

if (isArmstrongNumber(num)) {

console.log(`${num} is an Armstrong number.`);

} else { console.log(`${num} is not an Armstrong number.`);}

3.Write a program to find whether a given number is special number or

not-

If the sum of the factorial of digits of a number (N) is equal to the

number itself, the number (N) is called a special number.

eg- 145 is a special number

Logic- 1! + 4! + 5!= 1+24+120 i.e 14

Ans:

function factorial(n) {

if (n === 0) {

return 1;

}

let result = 1;

for (let i = 1; i <= n; i++) {

result \*= i;

}

return result;

}

function isSpecialNumber(number) {

const numStr = number.toString();

let sum = 0;

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

const digit = parseInt(numStr[i]);

sum += factorial(digit);

}

return sum === number;

}

// Example usage:

const num = 145;

if (isSpecialNumber(num)) {

console.log(`${num} is a special number.`);

} else {

console.log(`${num} is not a special number.`);

}