



**Subject : 2304CS431 – Client Side Scripting using
Javascript**

Faculty: Prof. Chirag K. Sakhrani

Practical – 8: Working with loops – 2.

1)

Program :- WAP to print sum of first 'n' Natural number (sum =1 + 2 + 3+ ... +n). (A)

Output :-

```
let n = parseInt(prompt("Enter a number:"));

let sum = (n * (n + 1)) / 2; // Formula to calculate the sum of the first 'n' natural numbers

console.log("Ans:", sum);
```

2)

Program :- WAP to check whether the given number is Armstrong or not. (B)

Output :-

Approach1:-

```
let num = parseInt(prompt("Enter a number:"));

let temp = num;
let sum = 0;
let len = num.toString().length;

while (num > 0) {
    let digit = num % 10;
    sum += Math.pow(digit, len);
    num = Math.floor(num / 10);
}

if (temp === sum) {
    console.log("The number is an Armstrong number");
} else {
    console.log("The number is not an Armstrong number.");
}
```

Approach2:-

```
let num = parseInt(prompt("Enter a number:"));

let temp = num;
let sum = 0;
let digits = num.toString().split("");
```

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	<pre> for (let digit of digits) { sum += Math.pow(parseInt(digit), digits.length); } if (temp === sum) { console.log("The number is an Armstrong number"); } else { console.log("The number is not an Armstrong number."); } </pre>
3)	
	Program:- WAP to print the factors of given number. (B)
	<p>Output:-</p> <pre> let num = parseInt(prompt("Enter a number:")); console.log("Factors:"); for (let i = 1; i <= num / 2; i++) { if (num % i === 0) { console.log(i); } } </pre>
4)	
	Program:- WAP to print the GCD of two numbers. (C)
	<p>Output:-</p> <p>Approach1:-</p> <pre> let a = parseInt(prompt("Enter the first number:")); let b = parseInt(prompt("Enter the second number:")); let min = Math.min(a, b); let gcd = 1; for (let i = 1; i <= min; i++) { if (a % i === 0 && b % i === 0) { gcd = i; } } console.log("GCD (Brute Force) of", a, "and", b, "is:", gcd); </pre>

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Approach2:-

// Euclidean Algorithm

```
let a = parseInt(prompt("Enter the first number:"));
let b = parseInt(prompt("Enter the second number:"));

while (b !== 0) {
    let temp = b;
    b = a % b;
    a = temp;
}

console.log("GCD of", a, "and", b, "is:", a);
```

5)

Program:- WAP to print LCM of two numbers. (C)

Output:-

```
let a = parseInt(prompt("Enter the first number:"));
let b = parseInt(prompt("Enter the second number:"));

let tempA = a;
let tempB = b;

while (tempB !== 0) {
    let temp = tempB;
    tempB = tempA % tempB;
    tempA = temp;
}

let gcdValue = tempA;

// Formula
let lcmValue = (a * b) / gcdValue;

console.log("GCD of", a, "and", b, "is:", gcdValue);
console.log("LCM of", a, "and", b, "is:", lcmValue);
```