# LAB-3

**Question 1:-** Find the sum of digits of a number using recursion?
**Case: -** Enter a number 123
Sum of digits of 123 is 6

**Question 2:-**

**(a)** Convert a number from Decimal to Binary using recursion?
**Case: -** Enter a number 20
Binary: - 10100

**(b)** Calculate Power of a number using recursion?

**Case: -** Enter a number

**10**

Enter the power for 10

**3**

10 raised to power 3 = 1000

**Question 3:-** How to do a recursive binary search to find a number in an array?
**Case:-** numbers = { 10, 15, 24, 33, 37, 41, 44, 67, 96, 100};

Position of 33 in this array is 3

**Question 4:-** Code the extended master's theorem in any programming language. I want a program similar to the application available at (https://www.nayuki.io/page/master-theorem-solver-javascript).

$$T(n)=aT(n/b)+\Theta(n^k(\log n)^i)$$