## Assignment -1

1. Implement merge, quick, insertion, selection, bubble sorts.
2. Given a input number in array form. Push all the zeroes to the end maintaining the order of rest of elements.
3. Given a number find next palindrome number. e.g. 119 -> 121
4. A sorted array has been rotated by some number k in clockwise direction. How can we find k efficiently.
5. You are given with an array containing only 0's and 1's. Write a function to sort this array. Find a solution which scans the array only once.
6. What if the array has 0's, 1's and 2's. Find another solution which scans the array only once.
7. Reverse a string keeping the words intact. e.g. Welcome to Coding Blocks -> Blocks Coding to Welcome.
8. Print all substrings of a string.

Recursion:

1. Count number of zeros in an integer. Use Recursion.
2. Given k find the geometric Sum i.e. 1 + 1/2 + 1/4 + 1/8 + ... + 1/(2^k)
3. Use recursion to check if a given String is palindrome or not.
4. Write a recursive function to convert a String into the number it represents. e.g. for input "1231" you should return integer 1231.
5. Write a function that returns the sum of the digits of an integer.
6. Given two Strings check if one is reverse of the other.
7. Given a string, compute recursively a new string where identical chars that are adjacent in the original string are separated from each other by a "*".

pairStar("hello") → "hel*lo"
pairStar("xxyy") → "x*xy*y"
pairStar("aaaa") → "a*a*a*a"