

Arrays

Check if array elements are all unique. Note use of Set and boolean array for checking. Use of boolean array is interesting because it uses array index.

<https://nickguner.atlassian.net/wiki/spaces/DEV/pages/858718211/Arrays+Problems#AllUnique>

Binary search within sorted array. Note that the array must be sorted. Note how to return position where element should be inserted if it is not in the array.

<https://nickguner.atlassian.net/wiki/spaces/DEV/pages/858718211/Arrays+Problems#BinarySearch>

Count Sum. Make sure you understand CountSum for two elements and CountSum for four (or three elements). Note that the array must be sorted.

<https://nickguner.atlassian.net/wiki/spaces/DEV/pages/858718211/Arrays+Problems#CountSum>

Duplicates and missing. Very important to understand.

<https://nickguner.atlassian.net/wiki/spaces/DEV/pages/858718211/Arrays+Problems#DuplicatesAndMissing>

Fibonacci. An absolute must. Very common interview problem. There are many ways to solve this problem. This method uses arrays. There are also recursive and dynamic programming examples which will be provided later.

<https://nickguner.atlassian.net/wiki/spaces/DEV/pages/858718211/Arrays+Problems#Fibonacci>

Kth Element. Find second largest, find kth largest. This is best done with PriorityQueues (i.e. heaps), but can also be done using arrays.

<https://nickguner.atlassian.net/wiki/spaces/DEV/pages/858718211/Arrays+Problems#%5BhardBreak%5DKthElement>

Max Difference

<https://nickguner.atlassian.net/wiki/spaces/DEV/pages/858718211/Arrays+Problems#%5BhardBreak%5DMaxDifference>

Maximum Sum in Array. Very important. sounds hard but implementation is very easy.

<https://nickguner.atlassian.net/wiki/spaces/DEV/pages/858718211/Arrays+Problems#%5BhardBreak%5DMaxSumInArray>

Median of two sorted arrays

<https://nickguner.atlassian.net/wiki/spaces/DEV/pages/858718211/Arrays+Problems#%5BhardBreak%5DMedianTwoSortedArrays>

Partition the array. Used by QuickSort. A must to understand.

<https://nickguner.atlassian.net/wiki/spaces/DEV/pages/858718211/Arrays+Problems#%5BhardBreak%5DPartition>

Push Zeros to front or back of array. Note use of "position" location.

<https://nickguner.atlassian.net/wiki/spaces/DEV/pages/858718211/Arrays+Problems#%5BhardBreak%5DPushZeros>

Remove value from array

<https://nickguner.atlassian.net/wiki/spaces/DEV/pages/858718211/Arrays+Problems#%5BhardBreak%5DRemoveValue>

Reverse an array. Absolute must.

<https://nickguner.atlassian.net/wiki/spaces/DEV/pages/858718211/Arrays+Problems#%5BhardBreak%5DReverse>

Most common number in range

<https://nickguner.atlassian.net/wiki/spaces/DEV/pages/858718211/Arrays+Problems#MostCommonInRange>

Shuffle deck of cards

<https://nickguner.atlassian.net/wiki/spaces/DEV/pages/858718211/Arrays+Problems#%5BhardBreak%5DShuffleCards>

Strings

AllUnique and length of longest string with all unique characters

<https://nickguner.atlassian.net/wiki/spaces/DEV/pages/875560984/Strings+Problems#AllUnique>

Anagrams - a must

<https://nickguner.atlassian.net/wiki/spaces/DEV/pages/875560984/Strings+Problems#Anagrams>

Count words

<https://nickguner.atlassian.net/wiki/spaces/DEV/pages/875560984/Strings+Problems#%5BhardBreak%5DCountWords>

Encode

<https://nickguner.atlassian.net/wiki/spaces/DEV/pages/875560984/Strings+Problems#%5BhardBreak%5DEncode>

FirstUnique

<https://nickguner.atlassian.net/wiki/spaces/DEV/pages/875560984/Strings+Problems#FirstUnique>

LongestUniformSubstring

<https://nickguner.atlassian.net/wiki/spaces/DEV/pages/875560984/Strings+Problems#%5BhardBreak%5DLongestUniformSubString>

LongestWordWithAllLetters

<https://nickguner.atlassian.net/wiki/spaces/DEV/pages/875560984/Strings+Problems#LongestWordWithAllLetters>

Palindrome

<https://nickguner.atlassian.net/wiki/spaces/DEV/pages/875560984/Strings+Problems#%5BhardBreak%5DPalindrome>

PatternMatch - a must

<https://nickguner.atlassian.net/wiki/spaces/DEV/pages/875560984/Strings+Problems#%5BhardBreak%5DPatternMatch>

Remove chars from String

<https://nickguner.atlassian.net/wiki/spaces/DEV/pages/875560984/Strings+Problems#%5BhardBreak%5DRemove>

Reverse words in a sentence - a must

<https://nickguner.atlassian.net/wiki/spaces/DEV/pages/875560984/Strings+Problems#ReverseWords>

WordDistance

<https://nickguner.atlassian.net/wiki/spaces/DEV/pages/875560984/Strings+Problems#WordDistance>

Numbers

ClockAngle

<https://nickguner.atlassian.net/wiki/spaces/DEV/pages/875823124/Numbers+Problems#%5BhardBreak%5DClockAngle>

Create number from array on single digits

<https://nickguner.atlassian.net/wiki/spaces/DEV/pages/875823124/Numbers+Problems#FromArray>

GasStations

<https://nickguner.atlassian.net/wiki/spaces/DEV/pages/875823124/Numbers+Problems#GasStations>

Greatest Common Denominator

<https://nickguner.atlassian.net/wiki/spaces/DEV/pages/875823124/Numbers+Problems#%5BhardBreak%5Dgcd>

Check if number is a palindrome

<https://nickguner.atlassian.net/wiki/spaces/DEV/pages/875823124/Numbers+Problems#%5BhardBreak%5DIsPalindrome>

Make change with least number of coins

<https://nickguner.atlassian.net/wiki/spaces/DEV/pages/875823124/Numbers+Problems#%5BhardBreak%5DMakeChange>

Number to Words (maybe)

<https://nickguner.atlassian.net/wiki/spaces/DEV/pages/875823124/Numbers+Problems#NumberToWords>

Power of 10

<https://nickguner.atlassian.net/wiki/spaces/DEV/pages/875823124/Numbers+Problems#%5BhardBreak%5DPowerOf10>

Primes, a must

<https://nickguner.atlassian.net/wiki/spaces/DEV/pages/875823124/Numbers+Problems#%5BhardBreak%5DPrimes>

Random7

<https://nickguner.atlassian.net/wiki/spaces/DEV/pages/875823124/Numbers+Problems#Random7>

Roman Numeral

<https://nickguner.atlassian.net/wiki/spaces/DEV/pages/875823124/Numbers+Problems#%5BhardBreak%5DRomanNumeral>

Square Root (using binary search)

<https://nickguner.atlassian.net/wiki/spaces/DEV/pages/875823124/Numbers+Problems#%5BhardBreak%5DSquareRoot>

StairCase Height

<https://nickguner.atlassian.net/wiki/spaces/DEV/pages/875823124/Numbers+Problems#%5BhardBreak%5DStairCaseHeight>

StringToNumber

<https://nickguner.atlassian.net/wiki/spaces/DEV/pages/875823124/Numbers+Problems#StringToNumber>

ToBinary

<https://nickguner.atlassian.net/wiki/spaces/DEV/pages/875823124/Numbers+Problems#ToBinary>

Recursion

BinarySearch

<https://nickguner.atlassian.net/wiki/spaces/DEV/pages/875528233/Recursion+Problems#BinarySearch>

EditDistance

<https://nickguner.atlassian.net/wiki/spaces/DEV/pages/875528233/Recursion+Problems#%5BhardBreak%5DEditDistance>

Elevator

<https://nickguner.atlassian.net/wiki/spaces/DEV/pages/875528233/Recursion+Problems#Elevator%5BhardBreak%5D>

Fibonacci

<https://nickguner.atlassian.net/wiki/spaces/DEV/pages/875528233/Recursion+Problems#Fibonacci>

IslandCount

<https://nickguner.atlassian.net/wiki/spaces/DEV/pages/875528233/Recursion+Problems#IslandCount>

KnightTour

<https://nickguner.atlassian.net/wiki/spaces/DEV/pages/875528233/Recursion+Problems#%5BhardBreak%5DKnightTour>

MakeChange - Important

<https://nickguner.atlassian.net/wiki/spaces/DEV/pages/875528233/Recursion+Problems#%5BhardBreak%5DMakeChange>

Maze

<https://nickguner.atlassian.net/wiki/spaces/DEV/pages/875528233/Recursion+Problems#%5BhardBreak%5DMaze>

NSumOrProduct (not easy)

<https://nickguner.atlassian.net/wiki/spaces/DEV/pages/875528233/Recursion+Problems#NSumOrProduct%5BhardBreak%5D>

Palindrome

<https://nickguner.atlassian.net/wiki/spaces/DEV/pages/875528233/Recursion+Problems#%5BhardBreak%5DPalindrome>

PhoneNumbers (hard problem, easy implementation)

<https://nickguner.atlassian.net/wiki/spaces/DEV/pages/875528233/Recursion+Problems#PhoneNumbers>

PlaceQueens (challenge)

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<https://nickguner.atlassian.net/wiki/spaces/DEV/pages/875528233/Recursion+Problems#PlaceQueens%5BhardBreak%5D>

PowerSet

<https://nickguner.atlassian.net/wiki/spaces/DEV/pages/875528233/Recursion+Problems#PowerSet%5BhardBreak%5D>

RemoveAdjacentDups

<https://nickguner.atlassian.net/wiki/spaces/DEV/pages/875528233/Recursion+Problems#RemoveAdjacentDups%5BhardBreak%5D>

StairWalk

<https://nickguner.atlassian.net/wiki/spaces/DEV/pages/875528233/Recursion+Problems#StairWalk>

StringPermutations

<https://nickguner.atlassian.net/wiki/spaces/DEV/pages/875528233/Recursion+Problems#%5BhardBreak%5DStringPermutations>

StringWildMatch

<https://nickguner.atlassian.net/wiki/spaces/DEV/pages/875528233/Recursion+Problems#%5BhardBreak%5DStringWildMatch>

ValidParens

<https://nickguner.atlassian.net/wiki/spaces/DEV/pages/875528233/Recursion+Problems#%5BhardBreak%5DValidParens>