



Sheryians
Coding School

Question Sheet



Question Sheet

Math Questions

Accept two numbers from user and swap their values (Part 2 - Swap without using third variable)

Find surface area of sphere

Find circumference and area of circle

Conditional Statements

Accept name and age from the user. Check if the user is a valid voter or not. (Valid - Hello Shery, You are a valid voter. Invalid - Sorry Shery, you can't cast the vote. Part 2 - Print after how many years the user will be eligible)

Accept a day number between 1-7 and print the corresponding day name.

Accept three numbers and print the greatest among them

Movie rating

Profile based program

Accept an English alphabet from user and check if it is a consonant or a vowel.

Question Sheet

Loops

Factorial of a number

Write a program to take two inputs a, b & find the value of a raised to the power of b. (Ex - a = 2, b = 5, OP - $2^5 = 32$)

Harshad number

Perfect square

Abundant number

Find Number of integers which has exactly x divisors

Program for Finding out the Prime Factors of a number

A neon number is a number where the sum of digits of the square of the number is equal to the number. (Ex: Input : 9, Output : Given number 9 is Neon number)

Armstrong number

Perfect number

Friendly pairs

Permutations in which n people can occupy r seats in a classroom

Maximum number of handshakes

For a given positive integer N, find the value of $F_2 + F_4 + F_6 + \dots + F_{2n}$ till N number, where F_i indicates the i'th Fibonacci number. (Ex: n = 4, Output: 33)

Question Sheet

Nested Loop

Nested Looping

Q32. Accept a number and check if it is a strong number or not
(Sum of factorial of each digit, Ex: $145 = 1! + 4! + 5! = 145$)

Right Triangle - Number Pattern

Right Triangle - Alphabet Pattern

Methods

Strong number using methods.

Special number using methods.

Question Sheet

Array

Concatenation of array

Build Array from Permutation

Given a sorted array of distinct elements, find the summation of absolute differences of all pairs in the given array. (Ex: arr[] = {1, 2, 3, 4}, Output: 10)

You are given two arrays of **equal length**: An **integer array A[]** and a **character array B[]**, where each character is one of 'a', 'b', or 'c'. Find the **minimum** value of the expression: min(sum of values linked with 'a' + sum of values linked with 'b', sum of values linked with 'c').

Given an array of integers, update every element with the multiplication of previous and next elements with the following exceptions: a) The First element is replaced by the multiplication of the first and second. b) The last element is replaced by multiplication of the last and second last. (Ex: Input : arr[] = {2, 3, 4, 5, 6}, Output : arr[] = {6, 8, 15, 24, 30})

We are given an array of Integers. We have to perform the following operation on the array until it is fully exhausted: Select the max number in the array and delete that number including all the numbers to its right side in the array. Repeat this step for the left elements of the array i.e select the maximum element in the left elements and delete it including all numbers to its right. Our task is to simulate the above procedure and return the number of steps that will be taken until the first element (index 0) of the array is also deleted and the array is exhausted. (Ex: Array = [2, 3, 5, 4, 1], Output : Steps Taken: 3)

Given an array of even size, task is to find minimum value that can be added to an element so that the array becomes balanced. An array is balanced if the sum of the left half of the array elements is equal to the sum of the right half. (Ex: Input : 121213, Output : 2)

Sort First half in Ascending and Second half in descending order in an array

Find sum of minimum absolute difference of the given array

Question Sheet

Multi-D Array

Valid Sudoku

String

Count Asterisks

Percentage of Letter in String

Check if All A's Appears Before All B's

Strong Password Checker II

Check distances Between same letters

Greatest English Letter in Upper and Lower Case

Rearrange Characters to Make Target String

Largest 3-Same-Digit Number in String

Remove Digit From Number to Maximize Result

Check if Number Has Equal Digit Count and Digit Value

Find Resultant Array After Removing Anagrams

Calculate Digit Sum of a String

Check Whether Two Strings are Almost Equivalent

Check if Numbers Are Ascending in a Sentence

Reverse Prefix of Word

Question Sheet

String

Hashing:

Decode the Message

Distribute Candies

Find the Difference

Count Vowel Substrings of a String

Kth Distinct String in an Array

Word Pattern

Set Mismatch

Unique Morse Code Words

Most Common Word



Question Sheet

Advance Math Problem

Median (--Sorted data, --In case of odd count - pick the middle element, --In case of even count - pick the two middle elements and calc their mean)

The kth Factor of n

Advance Array

Replace Elements with Greatest Element on Right Side

Squares of a Sorted Array

Move Zeroes

Sort Array By Parity

Running Sum of 1d Array

Find Pivot Index

Product of Array Except Self

Best Time to Buy and Sell Stock II



Cyclic Sort

Set Mismatch

Find All Duplicates in an Array

Find the Duplicate Number

Question Sheet

Binary Search

Binary Search on descending sorted array

Guess Number Higher or Lower

Ceiling of a number in a sorted array

Floor of a number in a sorted array

Find Smallest Letter Greater Than Target

Valid Perfect Square

First Bad Version

Search in an Infinite sorted array

Search a 2D Matrix

Capacity To Ship Packages Within D Days

Minimum Number of Days to Make m Bouquets

Find the Smallest Divisor Given a Threshold

Split Array Largest Sum

Aggressive cows

Question Sheet

Advance Hashing

Insert Delete GetRandom O(1)

LinkedList

Design Linked List

Linked List Cycle II

Convert Binary Number in a Linked List to Integer

Design HashSet

Design HashMap

Remove Duplicates from Sorted List II

Swap Nodes in Pairs

Remove Nth Node From End of List

Add Two Numbers

Question Sheet

Queue and Stack

Q 157. Smaller on Left

Q 158. Next Greater Element I

Q 159. Smallest number on left

Q 161. Backspace String Compare (Try it in O(1) space - Two pointers)

Q 163. Online Stock Span

Q 164. Min Stack (Two Stack / Linked List with min var / Single stack)

Q 165. Largest Rectangle in Histogram

Q 166. Maximal Rectangle

Backtracking

Permutations II

Combination Sum II

Combination Sum III

N-queen ||

Rat in a maze

Permutation Sequence

Question Sheet

Binary Tree

Binary Tree Level Order Traversal II

Populating Next Right Pointers in Each Node II

Right View of Binary Tree

Bottom View of Binary Tree

Q 190. Vertical Order Traversal

Sum of the Longest Bloodline of a Tree

Construct Binary Tree from Inorder and Postorder Traversal

Burning Tree



Question Sheet

Binary Search Tree

Predecessor and Successor

Lowest Common Ancestor of a Binary Search Tree

Two Sum IV - Input is a BST

Convert Sorted Array to Binary Search Tree

Convert Sorted List to Binary Search Tree

Recover Binary Search Tree

Subtree of Another Tree

—Binary heap

Sort Characters By Frequency

—sliding window

Pick Toys

—Graph

Bridges in a graph using Tarjan's algorithm

Articulation point

Kosaraju's Algorithm

—DP

Q Edit Distance

Q Longest Increasing Subsequence

Q Count Square Sub-matrixes with All Ones

Q Scramble string