Practice No.	**: 4**
Topic	**: Arrays and Function**
Date	**: 06-05-2024**

Solve the following problems

Q. No.	Question Detail	Level
1	Imagine you're on a treasure hunt, and the map you've been given contains a series of numbers as instead of landmarks. Your task is to find the largest treasure hidden in this array of numbers. Sample Input: 5, 12, 8, 29, 17, 6, 21 Sample Output 29	Easy
2	Imagine you're organizing a game night with your friends, and you've decided to play a unique game involving a series of numbers. Your task is to keep track of the number of even and odd numbers that appear in the sequence during the game. Sample Input: num = (3, 4, 6, 2, 3, 5, 7, 8, 5, 2, 9, 0, 1) Sample Output: Even: 7 Odd: 6	Easy
3	You're working on a program that tracks student grades, and you need to find out how many times a specific grade, say 90, appears in an array of test scores (frequency). Sample Input: arr[] = {85, 90, 78, 90, 92, 90, 87, 88, 90} Sample Output: The grade 90 appears 4 times in the array	Medium
4	Picture yourself as an archaeologist exploring a lost civilization. You stumble upon a sequence of artifacts, each marked with a unique number within a certain range. However, one crucial	Medium

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	artifact is missing, and it's your mission to identify which artifact is absent from the sequence. How would you go about detecting the missing artifact within the specified range based on the artifacts you've already discovered? Sample Input: Items[] = [9,6,4,2,3,5,7,0,1] Sample Output: 8	
5	Imagine you're managing finances for a project, and you have a list of expenses stored in an array. Your task is to calculate the total expenditure incurred so far to ensure the project stays within budget. Sample Input: [200, 350,120,80,150] Sample Output; 900	Easy
6	You're participating in a coding competition where the challenge is to identify duplicate elements in an array. How would you devise a strategy to detect and remove these duplicates? Sample Input: [5,8,2,5,9,2,3,8] Sample Output:[5,8,2,9,3]	Medium
7	You're designing a thrilling game where players embark on an adventure through an array of challenges. One of the key mechanics involves rotating the elements of an array by a certain number of steps. Sample Input: [1,2,3,4,5,6,7] Rotate : 3 Sample Output: [4,5,6,7,1,2,3]	Medium

8	Write a program to find the minimum and maximum element of each row and column in the given two-dimensional arrays. Sample Input:
	     Enter row size: 3
	     Enter column size: 3
	Enter 3 * 3 array elements are: 4
	     1
	     2
	     5
	     3
	     6
	     3
	     7
	     8
	Sample Output:
	     Given Array is:
	     4 1 2
		Medium

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	5 3 6 3 7 8	
9	Write a Java program to accept N numbers from console and print the sum of the elements of the array with the following condition. Condition: If the array has elements 'a' and 'b' in succeeding order, ignore the numbers between 'a' and 'b' inclusive for the calculation. Sample Input: [10,3,6,1,2,7,9], 6, 7 Sample Output: 22 Sample Input: [7,1,2,3,6], 6, 7 Sample Output: 19 Sample Input: [1,6,7,9], 6, 7 Sample Output: 10	Medium
10	Create a Java program that utilizes a function to receive input from the user for the lengths of the three sides of a triangle. Then, calculate the area of the triangle using these side lengths and display the result. Sample Input: 3,4,5 Sample Output: 6	Easy
11	You're tasked with designing a function that calculates the sum of two integer values, 'a' and 'b'. However, if either 'a' or 'b' is a "teen" value in the range 13 to 19 (inclusive), the function should return 19 instead of their sum. Sample Input1: 3, 4 Sample Output1: 7 Sample Input2: 13, 8 Sample Output2: 19	Easy
12	A communication system converts data into binary number format for transmission purpose. User enters data in numeric form. Write a method to convert decimal number into binary numbers & print it. Sample Input: 25 Sample Output: 11001	Easy

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13	Implement the function calculate Net Salary. User must input Basic Salary and Output should be net salary calculated based on following allowances: Allowances: DA = 70% of Basic Salary HRA = 7% of Basic Salary MA = 2% of Basic Salary TA = 4% of Basic Salary Deduction: PF = 12% of Basic Salary Income/professional tax = User Input (e.g., 500) Net Salary = Basic Salary + Allowances – Deduction **Sample Input :** Enter the Basic Salary: 50000 Enter the Income/Professional Tax: 1500 **Sample Output:** Net Salary: 59300.0	Medium