

Problem Sheet for OneDimensional Arrays

1. Write a program to get 5 elements in an array and get a number to be multiplied with the array elements. Display the multiplied result in descending order.

Input:

Array elements: 10, 20, 30, 40, 50

Number to be multiplied: 2

Output : 100 80 60 40 20

2. Write a program that lets the user enter the total rainfall for each of 12 months in an array. The program should calculate and display the **total rainfall** for the year, the **average monthly rainfall**, and the months with the **highest and lowest amount of rainfall**. *Input Validation: Do not accept negative numbers for monthly rainfall.*
3. Write a program to find the similar elements in an array and find its occurrence. Display the array element, index of the element and its number of occurrence.

Input:

Enter the number of array elements: 8

Array Elements: 45, 23, 78, 10, 23, 18, 7, 88

Output :

Similar array elements : 23 Index positions: 1,4 Number of Occurrence: 2

4. Write a program to get 10 integer inputs in an array and select an element from an array as input and count the
 - a. Number of elements which are greater than the selected element
 - b. Number of elements which are lesser than the selected element
 - c. Number of elements which are exactly divisible by the selected element

Input: Array Elements: 56, 78, 12, 4, 7, 30, 9, 6, 1, 79

Output: Select an Element from an array: 30

Elements which are greater than the selected element : 3

Elements which are lesser than the selected element : 6

Elements which are exactly divisible : 2

5. Write a program to take input for two arrays. First array with five elements and the second array with three elements and add both array elements and display the merged array.

Input:

Input for the first array : 2,5,7,44,890

Input for the second array: 456,3,4

Output: Added and Merged array: 458,8,11,44,890

Problem Sheet for Two Dimensional Arrays

1. In a gymnastics or diving competition, each contestant's score is calculated by dropping the lowest and highest scores and then adding the remaining scores. Write a program that allows the user to enter eight judges' scores and then outputs the point received by the contestant. A judge awards point between 1 and 10, with 1 being the lowest and 10 being the highest. For example, if the scores are: 9.2, 9.3, 9.0, 9.9, 9.5, 9.5, 9.6 and 9.8, then the contestant receives a total of 56.9 points.

Input:

Enter 8 scores out of ten points : 9.1 9.0 8.9 8.8 9.4 7.9 8.6 9.8

Output:

Your lowest score is 7.90

Your maximum score is 9.80

Your total point is 53.80

Your average point is 8.97

2. Write a program to create a MxN matrix and perform the following operations:
 - Sum of diagonal elements of a matrix.
 - Sum of row elements and column elements of a two dimensional array
 - Identify if the entered matrix is a magic square or not.
 - To obtain the determinant and transpose of a given matrix.

3. Write a program to obtain two matrices as input from the user and perform the following operations
 - To add two matrices and find the resultant matrix
 - To multiply two matrices and find the resultant matrix
4. A parking lot charges Rs.30 as minimum fee to park a vehicle upto 3 hours. Additional charge of Rs.5.00 per hour will be added if it exceeds three hours. for 24 hours the parking fees is Rs.80.00. Write a program to define a array parking and read the vehicle registration number, hours parked for each customer and calculate the parking charges for 'n' customers and display the receipt in format given below

Sample Input:

Enter how many customers :3

Enter registration number, Total Parking hours : 1867 3

Enter registration number, Total Parking hours : 5382 5

Enter registration number, Total Parking hours : 2407 24

Sample Output:

Vehicle Number	Hours Parked	Charges(in Rs)
1867	3	30.00
5382	6	45.00
2407	24	80.00

5. Roy Booksellers sells both hardcover and paperback books given in below table

Sample Input:

Day	Hardcover Books(Rs)	Paperback books(Rs)
Monday	1785.25	400.50
Tuesday	1575.00	375.85
Wednesday	2910.00	180.45
Thursday	1745.80	254.58
Friday	1948.85	458.95
Saturday	1452.95	258.45

Write a C program to help the management know the sales history by computing the following:

- 1) Daily sales of Paperback book on Friday
- 2) Total weekly sale of each item
- 3) Which day of the week does Hardcover books sold much and sales price?

Sample Output:

1) Daily sales of Paperback book on Friday: Rs 458.95

Week sale of Hardcover Book : Rs.11417.85

Week sale of Paperback Book : Rs.1928.78

3) Hardcover books are sold high on Wednesday with sale value: Rs.2910.00

Strings in C

1. Write a C program to accept your name and count the number of vowels in it.
2. Write a C program to accept a string and perform the following operations without using any string functions:
 - a. Print the length of the string
 - b. Print the reverse of the string
 - c. Copy the string to another new string
3. Write a program that converts all lowercase characters in a given string to its equivalent uppercase character.
4. Write a program that replaces two or more consecutive blanks in a string by a single blank. For example, if the input is
You are interested in programming
The output should be : You are interested in programming
5. Write a program to arrange a set of fruit names given below in lexicographically sorted order.
Mango, Banana, Apple, Orange, Grapes, Coconut, Watermelon , Papaya