LAB#08 EXERCISES

INSTRUCTIONS:

NOTE: Violation of any of the following instructions may lead to the cancellation of your submission.

1) Create a folder and name it by your student id (K22-1234).
2) Paste the .c (Save as type) file for each question with the names such as Task1.c, Task2.c and so on into that folder.

2DARRAYS ARE NOT ALLOWED TO BE USED FOR SOLVING THE FOLLOWING EXERCISES.

Task 01:

Write a program that reads the 5 numbers from user and store these numbers into an array of same size. You program should provide a searching mechanism in such a way that how many times a particular number occurred and then print it on screen. If number is not in array, then program should display a message "number not found".

Output:

```
Enter number to array:  12
Enter number to array:  14
Enter number to array:  15
Enter number to array:  16
Enter number to array:  18
Enter number you want to search:        9
Number doesn't exit in array
--------------------------------
Process exited after 15.03 seconds with return value 0
Press any key to continue . . .
```

Task 02:

Write a program by declaring an array for six elements. Use for loop to assign the given set {3.14,3.24,3.34,3.44,3.54} numbers to them. Display your stored numbers in descending order as well.

Note: Use nested for loop.

Output:

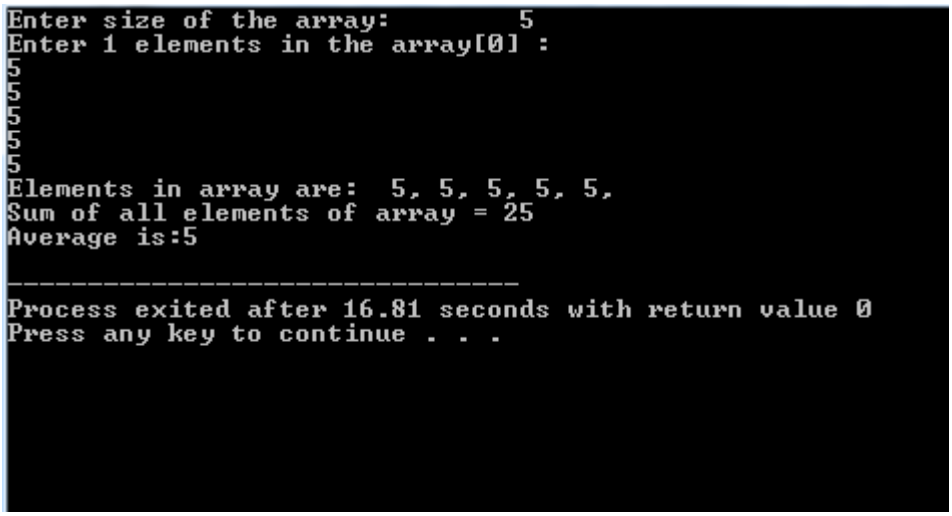
```
3.540000
3.440000
3.340000
3.240000
3.140000

--------------------------------
Process exited after 0.03593 seconds with return value 0
Press any key to continue . . .
```

Task 03:

Write a C program that takes user input array, displaying all elements, sum of all elements, and average of all elements.

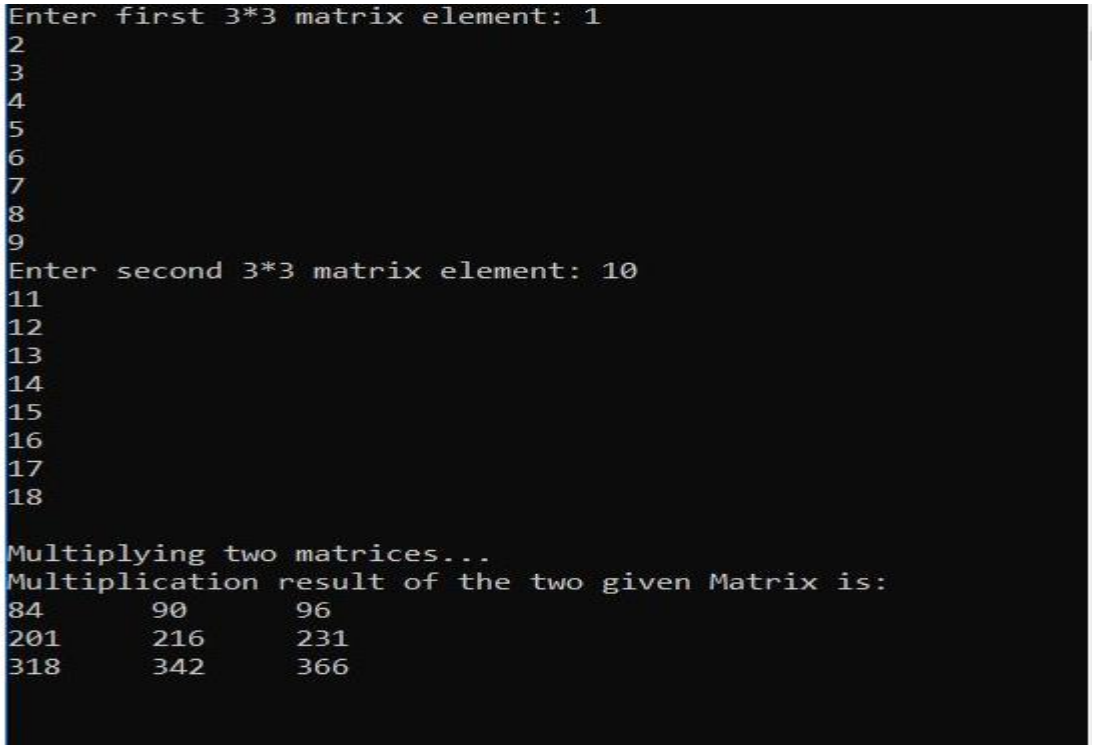
Output:



Task 04:

Write a C Program that takes two nxn matrices and make a third matrix, which will contain the multiplication of both input matrices.

Output:



Task 05:

Write a C program which accepts a matrix of given order and interchange any two rows and columns specified by the user in the original matrix.

Output:

```
Enter the order of the matrix
3 3
Enter the co-efficents of the matrix
2 3 5
4 5 6
8 9 10
Enter the numbers of two rows to be exchanged
2 3
Enter the numbers of two columns to be exchanged
1 2
The given matrix is
 2 3 5
 4 5 6
 8 9 10
The matix after interchanging the two rows(in the original matrix)
 2 3 5
 8 9 10
 4 5 6
The matix after interchanging the two columns(in the original matrix)
 3 2 5
 5 4 6
 9 8 10

--------------------------------
Process exited after 24.91 seconds with return value 0
Press any key to continue . . .
```

Task 06:

Write a C Program that finds the sum of the main & opposite diagonal elements of a MxN Matrix. The program accepts an MxN matrix. Then adds main diagonal of matrix as well as the opposite diagonal of the matrix.

Output:

```
Enetr the order of the matix
3 3
Enter the co-efficients of the matrix
4 5 6
1 2 3
8 5 2
The given matrix is
 4 5 6
 1 2 3
 8 5 2

The sum of the main diagonal elements is = 8
The sum of the off diagonal elements is   = 16

--------------------------------
Process exited after 18.52 seconds with return value 0
Press any key to continue . . .
```

Task 07:

Write a program in C to read n number of values in an array and display it in reverse order.

Output:

```
Read n number of values in an array and display it in reverse order:
-----------------------------------------------------------------------
Input the number of elements to store in the array :6
Input 6 number of elements in the array :
element  0 : 8
element  1 : 17
element  2 : 23
element  3 : 15
element  4 : 45
element  5 : 16

The values store into the array are :
    8   17   23   15   45   16

The values store into the array in reverse are :
   16   45   15   23   17    8


--------------------------------
Process exited after 16.39 seconds with return value 0
Press any key to continue . . .
```

Task 08:

Write a C program to input elements in array and find frequency of each element in array.

Output:

```
Enter size of array: 6
Enter elements in array: 1 23 45 65 65 23

Frequency of all elements of array :
1 occurs 1 times
23 occurs 2 times
45 occurs 1 times
65 occurs 2 times

--------------------------------
Process exited after 13.69 seconds with return value 0
Press any key to continue . . .
```