Programming in C

Duration time: 90 minutes

Introduction

Requirements

- Arrays, two-dimensional arrays.

Exercise 1

Write a program that prompt the user to input size of array and integer values of elements of array. The program put values into array and then displays the array from the beginning using recursive function.

Example:

```
Input size: 10
Input elements: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10
Output: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10
```

Exercise 2

Write a C program to find sum of array elements using recursion. C program should read elements in an array and find sum of array elements using recursion.

Example:

```
Input size of array: 10
Input array elements: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10
Output sum of array: 55
```

Exercise 3

By using two-dimensional array, write C program to display a table of numbers as shown below:

```
1    1    0    0    0

2    4    0    0    0

3    9    0    0    0

4    16   0    0    0

5    25   0    0    0
```

Exercise 4

By using two-dimensional arrays, write C program to add two follwoing arrays:

```
0    1    1    1    1          1    2    3    4    5

-1   0    1    1    1          2    0    1    2    3

-1   -1   0    1    1          3    4    0    1    2

-1   -1   -1   0    1          4    5    1    0    2

-1   -1   -1   -1   0          5    1    2    3    0
```

Exercise 5

By using two-dimensional arrays, write C program to multiply two follwoing arrays:

```
0    1    1    1    1          1    2    3    4    5

-1   0    1    1    1          2    0    1    2    3

-1   -1   0    1    1          3    4    0    1    2

-1   -1   -1   0    1          4    5    1    0    2

-1   -1   -1   -1   0          5    1    2    3    0
```

Exercise 6

Write a C program to read elements in an array and print all negative elements in an array. Program to find all negative elements in an array.

Example:

```
If the elements of array are: -1, -10, 100, 5, 61, -2, -23, 8, -90, 51
All negative elements in the array are: -1, -10, -2, -23, -90
```