LAB-4

OBJECT ORIENTED PROGRAMMING

BSCS-SPRING-2022

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Tasks

QUESTION#1

In this question, write a function, which take two parameters, a character array in a character pointer and a size of array. This function should replace all vowels with $ and return that pointer.

QUESTION#2

In this question write a function which create and compute sum of two nrows and ncols matrices, where 2d pointer array1, 2d pointer array2, nrows and ncols will be passed as arguments to the function. Now your task is to store the sum of these two matrices in new created 2 matrix matrixC and return the matrixC from the function without deallocating.

QUESTION#3

Now you are quite comfortable with 2D pointers. Here your goal is to define and allocate memory for 3D pointers.

(a):

write a function that receives four arguments:

(i) an alias to a 3D pointer;
(ii) number of pages (or number of matrices);
(iii) number of rows; and
(iv) number of columns.

Now your goal is to first allocate the memory for pages, rows and then for columns dynamically using new operator. Randomly initialize values using 3D pointer.

(b):

In this function, your goal is to write code for deallocating a dynamically allocated 3D matrix. Your function will receives four arguments:

(i) a 3D pointer;

(ii) number of pages;

(ii) number of rows; and

(v) number of columns.

Complete the code to properly deallocate the 3D array.

(c):

In this question create and compute sum of two nrows X ncols matrices, where nrows and ncols will be passed as arguments to the function. First create a 3D pointer tdp and use the above defned function to create and allocate a 3D matrix with 3 pages (or 3 matrices) and nrows rows and ncols columns. Next randomly fill the first two matrices (at index 0 and index 1 of tdp) and then store the sum of these two matrices in third matrix (at index 2 of tdp). You will return the result of sum of matrices from the function.

QUESTION#4

In this question, write a function, which take two parameters, a character array in a character pointer and a size of array. Create a dynamic array and copy all element of received array into dynamic array. Check if given string is palindrome or not. Delete the dynamic memory. This function should return 0 if string is palindrome else return 1.