

AROR UNIVERSITY OF ART, ARCHITECTURE, DESIGN & HERITAGE SUKKUR

**COURSE: Data Structure**

**BS-Artificial Intelligence (Section B) LAB # 2**

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# TASK 01: Concatenation of Array

# Given an integer array nums of length n, you want to create an array ans of length 2n where ans[i] == nums[i] and ans[i + n] == nums[i] for 0 <= i < n (0-indexed). Specifically, ans is the concatenation of two nums arrays. Return the array ans.

# Example 1:

# Input: nums = [1,2,1]

# Output: [1,2,1,1,2,1]

# Explanation: The array ans is formed as follows: - ans = [nums[0],nums[1],nums[2],nums[0],nums[1],nums[2]] - ans = [1,2,1,1,2,1]

# Coding:

# 

# OUTPUT:

# 

# TASK 02: Find Words Containing Character

# You are given a 0-indexed array of strings words and a character x.

# Return an array of indices representing the words that contain the character x.

# Note that the returned array may be in any order.

# 

# Example 1:

# Input: words = ["leet","code"], x = "e"

# Output: [0,1]

# Explanation: "e" occurs in both words: "leet", and "code". Hence, we return indices 0 and 1.

# Coding:

# 

# OUTPUT:

# 

# TASK 03: Maximum Number of Words Found in Sentences

# A sentence is a list of words that are separated by a single space with no leading or trailing spaces.

# You are given an array of strings sentences, where each sentences[i] represents a single sentence.

# Return the maximum number of words that appear in a single sentence.

# 

# Example 1:

# Input: sentences = ["alice and bob love leetcode", "i think so too", "this is great thanks very much"]

# Output: 6

# Explanation:

# - The first sentence, "alice and bob love leetcode", has 5 words in total.

# - The second sentence, "i think so too", has 4 words in total.

# - The third sentence, "this is great thanks very much", has 6 words in total.

# Thus, the maximum number of words in a single sentence comes from the third sentence, which has 6 words.

# Coding:

# 

# OUTPUT:

# 

# TASK 04:

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# TASK 05: Find Common Elements Between Two Arrays

# You are given two integer arrays nums1 and nums2 of sizes n and m, respectively. Calculate the following values:

# answer1 : the number of indices i such that nums1[i] exists in nums2.

# answer2 : the number of indices i such that nums2[i] exists in nums1.

# Return [answer1,answer2].

# Example 1:

# Input: nums1 = [4,3,2,3,1], nums2 = [2,2,5,2,3,6]

# Output: [3,4]

# Explanation:

# The elements at indices 1, 2, and 3 in nums1 exist in nums2 as well. So answer1 is 3.

# The elements at indices 0, 1, 3, and 4 in nums2 exist in nums1. So answer2 is 4.

# Coding:

# 

# OUTPUT:

# 

# TASK 06: Count Primes

# Given an integer n, return the number of prime numbers that are strictly less than n.

# 

# Example 1:

# Input: n = 10

# Output: 4

# Explanation: There are 4 prime numbers less than 10, they are 2, 3, 5, 7.

# Coding:

# 

# OUTPUT:

# 

**THE END**