Homework 3

ESE 344 [Spring 2025]

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Due date: 03/10/2025 midnight

Submit all exercises using Github

Exercise 1:

You are given an integer array **nums** and two integers **indexDiff** and **valueDiff**.

Find a pair of indices **(i, j)** such that:

- **i** != **j**
- abs (**i** – **j**) <= **indexDiff**
- abs (**nums[i]** – **nums[j]**) <= **valueDiff**

return **true** if such pairs exist or **false** otherwise.

Input: nums = [1, 2, 3, 1], indexDiff = 3, valueDiff = 0

Output: true

Explanation: (i, j) = (0, 3)

Exercise 2:

Given an array of integers **citations** where **citations [i]** is the number of citations a researcher received for his/her **i**th paper, return the researcher's h-index.

The h-index is defined as the maximum value of **h** such that the given researcher has published at least **h** papers that have each been cited at least **h** times.

Exercise 3:

Given an arrays of strings **strs**, return the length of the longest uncommon subsequence between them. If the longest uncommon subsequence does not exist, return -1.

An uncommon subsequence between an array of strings is a string that is a subsequence of one string but not the others. A subsequence of a string is a string that can be obtained after deleting a number of characters from a string.