CSE220: Data Structures (Lab)

Fall 2024

Lab Quiz - 01

Duration: 30 Minutes

| Name: | ID: | Section: |
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You are standing at the top left corner (index: (0, 0)) of a n x m board (think of it as a matrix). Each of the cells of the board contains a **positive integer (less than 100)** and all the integers in the board are **unique**. These integers represent a score. In one step you can move to the neighboring cell on your left, or right, or up, or down if that cell exists. In other words, if you are currently at cell (i, j), you can move to any of the following cells: (i + 1, j), (i - 1, j), (i, j + 1), or (i, j - 1) if that cell exists. However, you only move to the cell having the **minimum** number out of the 4 possible cells. Your score is added with the integer that is in the cell where you moved. You will take in total *t* such steps. Now, write a function that takes the matrix and *t* as input and determines your total score after you complete *t* steps.

**Input:**

1 2 3

4 5 6

9 3 7

t = 4

**Output:**

7

**Explanation:**

You are at (0, 0) at first. Your initial score is 1. Then you’ll move to the cell containing 2, then you’ll move to 1, then to 2, and so on…

After 1st step, your score becomes 1 + 2 = 3

After 2nd step, your score becomes 1 + 2 + 1 = 4

After 3rd step, your score becomes 1 + 2 + 1 + 2 = 6

After 4th step, your score becomes 1 + 2 + 1 + 2 + 1 = 7