CANDELA TECHNOLOGIES INDIA PVT LTD

Floor No.4th & 5th, Hill Crest Apartment, Pedda Rushikonda,
Visakhapatnam, Andhra Pradesh - 530045
Website-https://www.candelatech.com/
E-mail: sales@candelatech.com
Phone: +91 6305846520, 9700181000

Programming Assessment for Software Development Intern

All candidates are requested to follow the guidelines as mentioned below:

- The test duration is 90 minutes.
- The candidate should bring their own laptop.
- Any AI tools are strictly prohibited.
- Solving the problems using Python is recommended; any other language can also be used.
- Always consider inputs dynamically (read inputs from user).
- Candidates are requested to provide the final code in a text document mentioning the solution for the respective question.
- Attempt the questions that fit the best of your skills.

Problem: 1

There are n employees, each with a unique ID from 0 to n - 1.

You are given a 2D integer array logs where logs[i] = [idi, leaveTimei] where:

- idi is the ID of the employee who worked on the ith task, and
- leaveTimei is the time at which the employee finished the ith task. All the values leaveTimei are **unique**.

Note that the ith The task starts the moment right after the (i - 1)th task ends, and the 0th The task starts at a time 0.

Return *the ID of the employee who worked the task with the longest time.* If there is a tie between two or more employees, return *the **smallest** ID among them*.

Testcase 1:

Input: n = 10, logs = [[0,3],[2,5],[0,9],[1,15]]
Output: 1
Explanation:

Task 0 started at 0 and ended at 3 with 3 units of times.
Task 1 started at 3 and ended at 5 with 2 units of times.
Task 2 started at 5 and ended at 9 with 4 units of times.
Task 3 started at 9 and ended at 15 with 6 units of times.
The task with the longest time is task 3 and the employee with id 1 is the one that worked on it, so we return 1.

Testcase 2:

Input: n = 26, logs = [[1,1],[3,7],[2,12],[7,17]]
Output: 3
Explanation:
Task 0 started at 0 and ended at 1 with 1 unit of times.
Task 1 started at 1 and ended at 7 with 6 units of times.
Task 2 started at 7 and ended at 12 with 5 units of times.
Task 3 started at 12 and ended at 17 with 5 units of times.
The tasks with the longest time is task 1. The employee that worked on it is 3, so we return 3.

Testcase 3:

Input: n = 2, logs = [[0,10],[1,20]]
Output: 0
Explanation:
Task 0 started at 0 and ended at 10 with 10 units of times.
Task 1 started at 10 and ended at 20 with 10 units of times.
The tasks with the longest time are tasks 0 and 1.
The employees that worked on them are 0 and 1, so we return the smallest id 0.

da,

Problem: 2

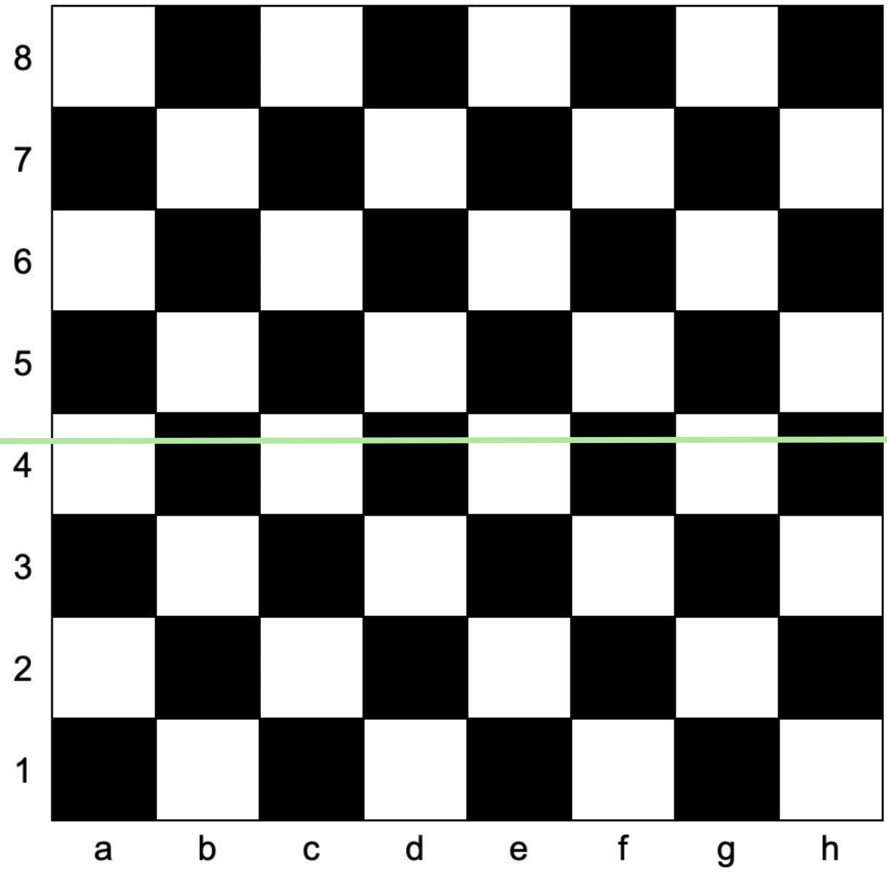
You a ... are of

the cl

Retur

The c

coord



Testcase 1:

Input: coordinates = "a1"

Output: false

Explanation: From the chessboard above, the square with coordinates "a1" is black, so return false.

Testcase 2:

Input: coordinates = "h3"

Output: true

Explanation: From the chessboard above, the square with coordinates "h3" is white, so return true.

Testcase 3:

Input: coordinates = "c7"

Output: false

Given a binary array nums, return *the maximum number of consecutive 1's in the array*.

Testcase 1:

Input: nums = [1,1,0,1,1,1]

Output: 3

Explanation: The first two digits or the last three digits are consecutive 1s. The maximum number of consecutive 1s is 3.

Testcase 2:

Input: nums = [1,0,1,1,0,1]

Output: 2

CANDELA TECHNOLOGIES INDIA PVT LTD

Floor No.4th & 5th, Hill Crest Apartment, Pedda Rushikonda,
Visakhapatnam, Andhra Pradesh - 530045
Website-https://www.candelatech.com/
E-mail: sales@candelatech.com
Phone: +91 6305846520, 9700181000

Problem - 04

Given a string s containing just the characters '(', ')', '{', '}', '[' and ']', determine if the input string is valid.

An input string is valid if:

1. Open brackets must be closed by the same type of brackets.
2. Open brackets must be closed in the correct order.

3. Every close bracket has a corresponding open bracket of the same type.

Testcase 1:

Input: s = "()"

Output: true

Testcase 2:

Input: s = "()[]{}"

Output: true

Testcase 3:

Input: s = "(]"

Output: false

Testcase 4:Input: s = "([)]"

Output: false

CANDELA TECHNOLOGIES INDIA PVT LTD

Floor No.4th & 5th, Hill Crest Apartment, Pedda Rushikonda,
Visakhapatnam, Andhra Pradesh - 530045
Website-https://www.candelatech.com/
E-mail: sales@candelatech.com
Phone: +91 6305846520, 9700181000

Problem - 05

Problem Statement: Create a registration form with three fields: **Email**, **Password**, and **Confirm Password**, plus a Submit button.

Requirements:

1. **Email:** Must use a Regex check to ensure a valid format (e.g., contains @ and .).
2. **Password:** Must be at least 8 characters long and contain at least 1 number.
3. **Confirm Password:** Must match the Password field exactly.
4. **UX Requirement:** The error message should appear **immediately** when the user leaves the field (on blur), not just when they click submit.

Submission: The submit button should be disabled (or prevent submission) until all fields are valid.

CANDELA TECHNOLOGIES INDIA PVT LTD

Floor No.4th & 5th, Hill Crest Apartment, Pedda Rushikonda,
Visakhapatnam, Andhra Pradesh - 530045
Website-https://www.candelatech.com/
E-mail: sales@candelatech.com
Phone: +91 6305846520, 9700181000

Problem - 06

Problem Statement: Create a password input field with an "Eye" icon (or a simple button) next to it that says "Show".

Requirements:

1. **Default:** The input should mask characters (bullets •••••).
2. **Action:** When the user clicks the button:
    a. If the password is hidden, show the actual text and change the button text to "Hide".
    b. If the password is visible, hide it again and change the button text to "Show".