1] House Robber
You are a professional robber planning to rob houses along a street. Each house has a certain amount of money stashed, the only constraint stopping you from robbing each of them is that adjacent houses have security systems connected and it will automatically contact the police if two adjacent houses were broken into on the same night.

Given an integer array nums representing the amount of money of each house, return the maximum amount of money you can rob tonight without alerting the police.
Example 1:
Input: nums = [1,2,3,1]
Output: 4
Explanation: Rob house 1 (money = 1) and then rob house 3 (money = 3).
Total amount you can rob = 1 + 3 = 4.
Example 2:
Input: nums = [2,7,9,3,1]
Output: 12
Explanation: Rob house 1 (money = 2), rob house 3 (money = 9) and rob house 5 (money = 1).
Total amount you can rob = 2 + 9 + 1 = 12.
Constraints:
1 <= nums.length <= 100
0 <= nums[i] <= 400

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2]Given an m x n 2D binary grid grid which represents a map of '1's (land) and '0's (water), return the number of islands.An island is surrounded by water and is formed by connecting adjacent lands horizontally or vertically. You may assume all four edges of the grid are all surrounded by water.
Example 1:

```
Input: grid = [
  ["1","1","1","1","0"],
  ["1","1","0","1","0"],
  ["1","1","0","0","0"],
  ["0","0","0","0","0"]
]
```

Output: 1

Example 2:

```
Input: grid = [
  ["1","1","0","0","0"],
  ["1","1","0","0","0"],
  ["0","0","1","0","0"],
  ["0","0","0","1","1"]
]
Output: 3
```

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3]A city's skyline is the outer contour of the silhouette formed by all the buildings in that city when viewed from a distance. Given the locations and heights of all the buildings, return the skyline formed by these buildings collectively.

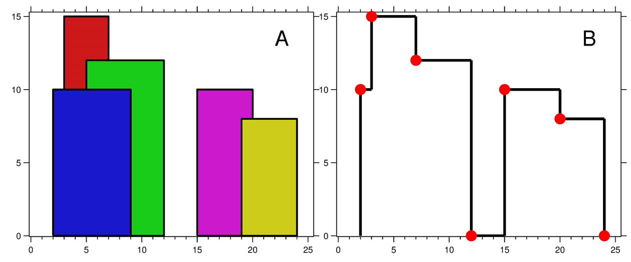
The geometric information of each building is given in the array buildings where buildings[i] = [lefti, righti, heighti]:

lefti is the x coordinate of the left edge of the ith building.
righti is the x coordinate of the right edge of the ith building.
heighti is the height of the ith building.
You may assume all buildings are perfect rectangles grounded on an absolutely flat surface at height 0.

The skyline should be represented as a list of "key points" sorted by their x-coordinate in the form [[x1,y1],[x2,y2],...]. Each key point is the left endpoint of some horizontal segment in the skyline except the last point in the list, which always has a y-coordinate 0 and is used to mark the skyline's termination where the rightmost building ends. Any ground between the leftmost and rightmost buildings should be part of the skyline's contour.

Note: There must be no consecutive horizontal lines of equal height in the output skyline. For instance, [...,[2 3],[4 5],[7 5],[11 5],[12 7],...] is not acceptable; the three lines of height 5 should be merged into one in the final output as such: [...,[2 3],[4 5],[12 7],...]

Example 1:



Input: buildings = [[2,9,10],[3,7,15],[5,12,12],[15,20,10],[19,24,8]]
Output: [[2,10],[3,15],[7,12],[12,0],[15,10],[20,8],[24,0]]
Explanation:
Figure A shows the buildings of the input.
Figure B shows the skyline formed by those buildings. The red points in figure B represent the key points in the output list.

Example 2:

Input: buildings = [[0,2,3],[2,5,3]]
Output: [[0,3],[5,0]]

Constraints:

1 <= buildings.length <= 104
0 <= lefti < righti <= 231 - 1
1 <= heighti <= 231 - 1
buildings is sorted by lefti in non-decreasing order.

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4] The demons had captured the princess and imprisoned her in the bottom-right corner of a dungeon. The dungeon consists of m x n rooms laid out in a 2D grid. Our valiant knight was initially positioned in the top-left room and must fight his way through dungeon to rescue the princess.

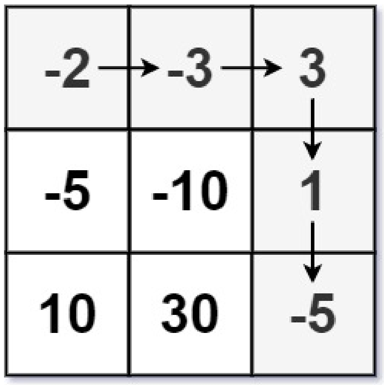
The knight has an initial health point represented by a positive integer. If at any point his health point drops to 0 or below, he dies immediately.

Some of the rooms are guarded by demons (represented by negative integers), so the knight loses health upon entering these rooms; other rooms are either empty (represented as 0) or contain magic orbs that increase the knight's health (represented by positive integers).

To reach the princess as quickly as possible, the knight decides to move only rightward or downward in each step.

Return the knight's minimum initial health so that he can rescue the princess.

Note that any room can contain threats or power-ups, even the first room the knight enters and the bottom-right room where the princess is imprisoned.
Example 1:



Input: dungeon = [[-2,-3,3],[-5,-10,1],[10,30,-5]]
Output: 7
Explanation: The initial health of the knight must be at least 7 if he follows the optimal path: RIGHT-> RIGHT -> DOWN -> DOWN.
Example 2:

Input: dungeon = [[0]]
Output: 1
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5]Mustafa wants to cross a dungeon. The dungeon has N cells, and in every cell, there are M monsters. To cross each cell he has to kill one monster, on killing the monster, he loses the strength equal to that of the monster and gains some confidence which adds up to his strength and he proceeds to the next cell. Mustafa can only kill a monster if his strength is greater than or equal to the strength of the monster. Help him find the minimum strength he must have in the beginning so that he can cross N cells.

Input format:

First two integers are N and M.
N X M matrix represents the energy required to kill the monster in each cell.
N X M matrix that represents confidence gained by killing respective monsters.
Testcase:

Input:

```
3 3
3 2 5
8 9 1
4 7 6
1 1 1
1 1 1
1 1 1
```

Output:

```
5
```