

# 1224. Minimum Falling Path Sum II

## Difficulty : Hard

<https://leetcode.com/problems/minimum-falling-path-sum-ii>

Given an  $n \times n$  integer matrix `grid`, return the minimum sum of a **falling path with non-zero shifts**.

A **falling path with non-zero shifts** is a choice of exactly one element from each row of `grid` such that no two elements chosen in adjacent rows are in the same column.

### Example 1:

1	2	3
4	5	6
7	8	9

**Input:** `grid = [[1,2,3],[4,5,6],[7,8,9]]`

**Output:** 13

#### Explanation:

The possible falling paths are:

[1,5,9], [1,5,7], [1,6,7], [1,6,8],  
[2,4,8], [2,4,9], [2,6,7], [2,6,8],  
[3,4,8], [3,4,9], [3,5,7], [3,5,9]

The falling path with the smallest sum is [1,5,7], so the answer is 13.

### Example 2:

**Input:** `grid = [[7]]`

**Output:** 7

### Constraints:

- $n == \text{grid.length} == \text{grid}[i].\text{length}$
- $1 \leq n \leq 200$
- $-99 \leq \text{grid}[i][j] \leq 99$