The Ideal Engineer

At Fielo, we look for candidates who are **friendly, smart, and motivated**. Our strategy is to build a small team where every single member is highly talented, hard working, and collaborative. This allows us to create an atmosphere of trust where employees had high agency over their work and could move quickly.

In addition, we look for **generalist, pragmatic problem solvers**. The needs of startups change rapidly so it's critical that our engineers can learn new things quickly and fill whatever roles the project demands. If we hire a specialist too early we may find that their skills quickly become irrelevant.

We assign a score of 0-40 based on the following 4 criteria:

1. Basic Coding
Ability to write a basic 5-10 lines of code that does one operation like transforming an array in some simple way.

2. **Basic Data Manipulation**

3. Efficiency
Ability to translate specifications into clean, tested, documented code at a reasonable speed.

4. Problem Solving
Ability to apply more advanced algorithmic techniques to find an optimal solution to the given problem.

Looking for Bananas in the Monkeys island

Given a Jungle in the middle of an island of n*m dimensions. Each field in this jungle contains a positive integer which is the amount of bananas that exist in that field. Initially the monkey is at first column but can be at any row. The monkey can move only (right->,right up /,right down\) from a given cell. Find out the maximum amount of bananas they can collect.

Input/Output Examples:

Input : mat[][] = {{1, 3, 3},
{2, 1, 4},
{0, 6, 4}};
Output : 12

{(1,0)->(2,1)->(2,2)}

Input: mat[][] = { {1, 3, 1, 5},
{2, 2, 4, 1},
{5, 0, 2, 3},
{0, 6, 1, 2}};
Output: 16
(2,0) -> (1,1) -> (1,2) -> (0,3) OR
(2,0) -> (3,1) -> (2,2) -> (2,3)

Input: mat[][] = {{10, 33, 13, 15},
{22, 21, 04, 1},
{5, 0, 2, 3},
{0, 6, 14, 2}};
Output: 83

Requirements

1. Please state time and space (memory) complexity in Big O notation. (m,n) may be used to represent. If you need a basic primer on this, it's here:
Also, please state your thought process in writing (and any sketches you used) to arrive at your solution.

2. Thought process (excel sheet, sketches, etc.)

3. Working solution & test code