

Implementing a Dynamic Programming Solution for the Egg Drop Problem

Description:

Your task is to implement a dynamic programming solution for the Egg Drop Problem.

The problem involves finding the minimum number of egg drops required to determine the threshold floor in a building with a given number of floors and a certain number of eggs.

The threshold floor is the highest floor from which an egg can be dropped without breaking.

You need to write a function that takes two input parameters: the number of floors (h) and the number of eggs (n). The function should return the minimum number of egg drops required to find the threshold floor.

Constraints:

- 1. An egg that survives a fall can be used again.*
- 2. A broken egg must be discarded.*
- 3. The effect of a fall is the same for all eggs.*
- 4. If an egg breaks when dropped, it would also break if dropped from a higher floor.*
- 5. If an egg survives a fall, it would survive a shorter fall.*

Your implementation should follow the principles of dynamic programming, which involve dividing the problem into smaller subproblems and storing the results of subproblems in a data structure to avoid recomputation.

Notes:

- Your solution should focus on determining the minimum number of egg drops needed and not on identifying the exact threshold floor.
- To solve the Egg Drop Problem using dynamic programming, you first need to find the recurrence relation for the function $w(h, n)$, where h represents the number of floors and n the number of eggs. This recurrence relation will define the minimum number of egg drops required for a given number of floors and eggs.

Advanced

Implementing Combinatorics Approach solution for the Egg Drop Problem

Description:

To further advance your understanding of the Egg Drop Problem, your task involves not only implementing a dynamic programming solution but also learning about an alternative approach that utilizes combinatorics.

To accomplish this, you are required to study an article that explains how the Egg Drop Problem can be solved using combinatorics principles. The article will provide insights into the combinatorial approach, which can lead to an efficient solution for finding the minimum number of egg drops needed to determine the threshold floor.

Please follow the link below to access the article and thoroughly understand the combinatorics approach for solving the Egg Drop Problem:

[The article](#)

Once you have studied the article and gained a comprehensive understanding of the combinatorial approach, proceed with implementing the solution. Your implementation should accurately utilize the combinatorics principles discussed in the article to solve the Egg Drop Problem efficiently.