Problem 668: Kth Smallest Number in Multiplication Table

Problem Information

Difficulty: Hard
Acceptance Rate: 53.48%
Paid Only: No
Tags: Math, Binary Search

Problem Description

Nearly everyone has used the [Multiplication Table](https://en.wikipedia.org/wiki/Multiplication_table). The multiplication table of size `m x n` is an integer matrix `mat` where `mat[i][j] == i * j` (**1-indexed**).

Given three integers `m`, `n`, and `k`, return _the_`kth` _smallest element in the_`m x n` _multiplication table_.

Example 1:

Input: m = 3, n = 3, k = 5 **Output:** 3 **Explanation:** The 5th smallest number is 3.

Example 2:

Input: m = 2, n = 3, k = 6 **Output:** 6 **Explanation:** The 6th smallest number is 6.

Constraints:

* `1 <= m, n <= 3 * 104` * `1 <= k <= m * n`

Code Snippets

C++:

```
class Solution {
public:
int findKthNumber(int m, int n, int k) {

}
};
```

Java:

```
class Solution {
public int findKthNumber(int m, int n, int k) {

}
}
```

Python3:

```
class Solution:
def findKthNumber(self, m: int, n: int, k: int) -> int:
```