Given three integers **M, N**and**K**. Consider a grid of **M \* N**, where **mat[i][j] = i \* j** (1 based index). The task is to return the **Kth** smallest element in the **M \* N** multiplication table.

CODE:

def kth\_smallest\_element(m, n, k):

def count\_less\_equal(x):

count = 0

for i in range(1, m + 1):

count += min(x // i, n)

return count

low, high = 1, m \* n

while low < high:

mid = (low + high) // 2

if count\_less\_equal(mid) < k:

low = mid + 1

else:

high = mid

return low

# Example usage

M = int(input("Enter the value of M: "))

N = int(input("Enter the value of N: "))

K = int(input("Enter the value of K: "))

result = kth\_smallest\_element(M, N, K)

print(f"The {K}th smallest element in the {M} \* {N} multiplication table is: {result}")

OUTPUT:

Enter the value of M: 3

Enter the value of N: 3

Enter the value of K: 5

The 5th smallest element in the 3 \* 3 multiplication table is: 3

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