Arrays - 5

In This Lecture

Minimum operations to make all elements of a matrix equal

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Given an integer K and a matrix of N rows and M columns, the task is to find the minimum number of operations required to make all the elements of the matrix equal. In a single operation, K can be added to or subtracted from any element of the matrix. Print -1 if it is impossible to do so.

0 1 10 11

Input: mat[][] = {{2, 4}, {22, 24}}, K = 2

Output: 20

1 0 1

22

22 − 10(2) = 2

Minimum operations to make all elements of a matrix equal

Input: mat[][] = {

Explanation:

{3, 63, 42},

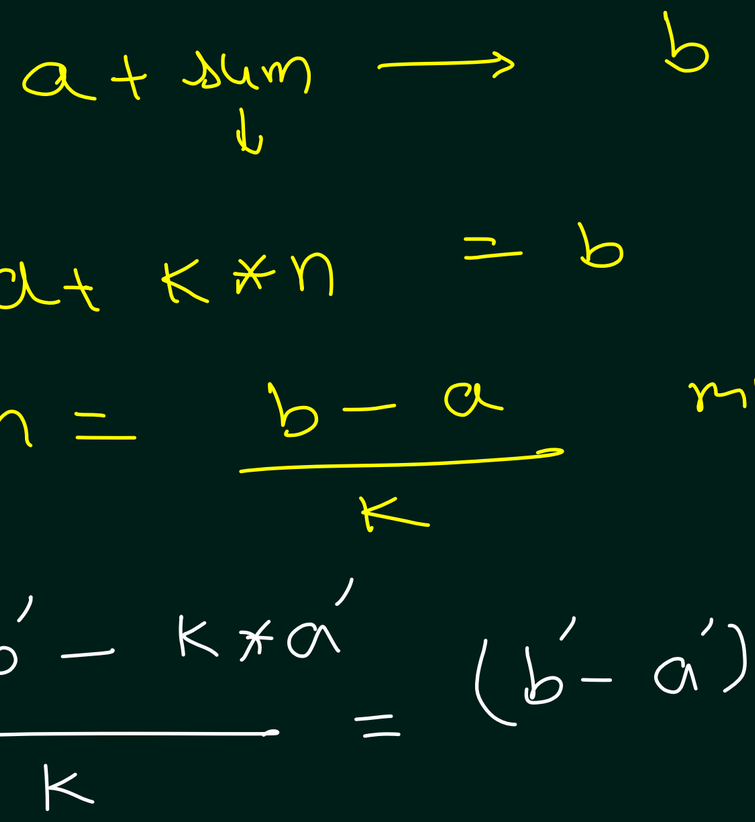
{18, 12, 12},

{15, 21, 18},

{33, 84, 24}},

K = 3

Output: 63



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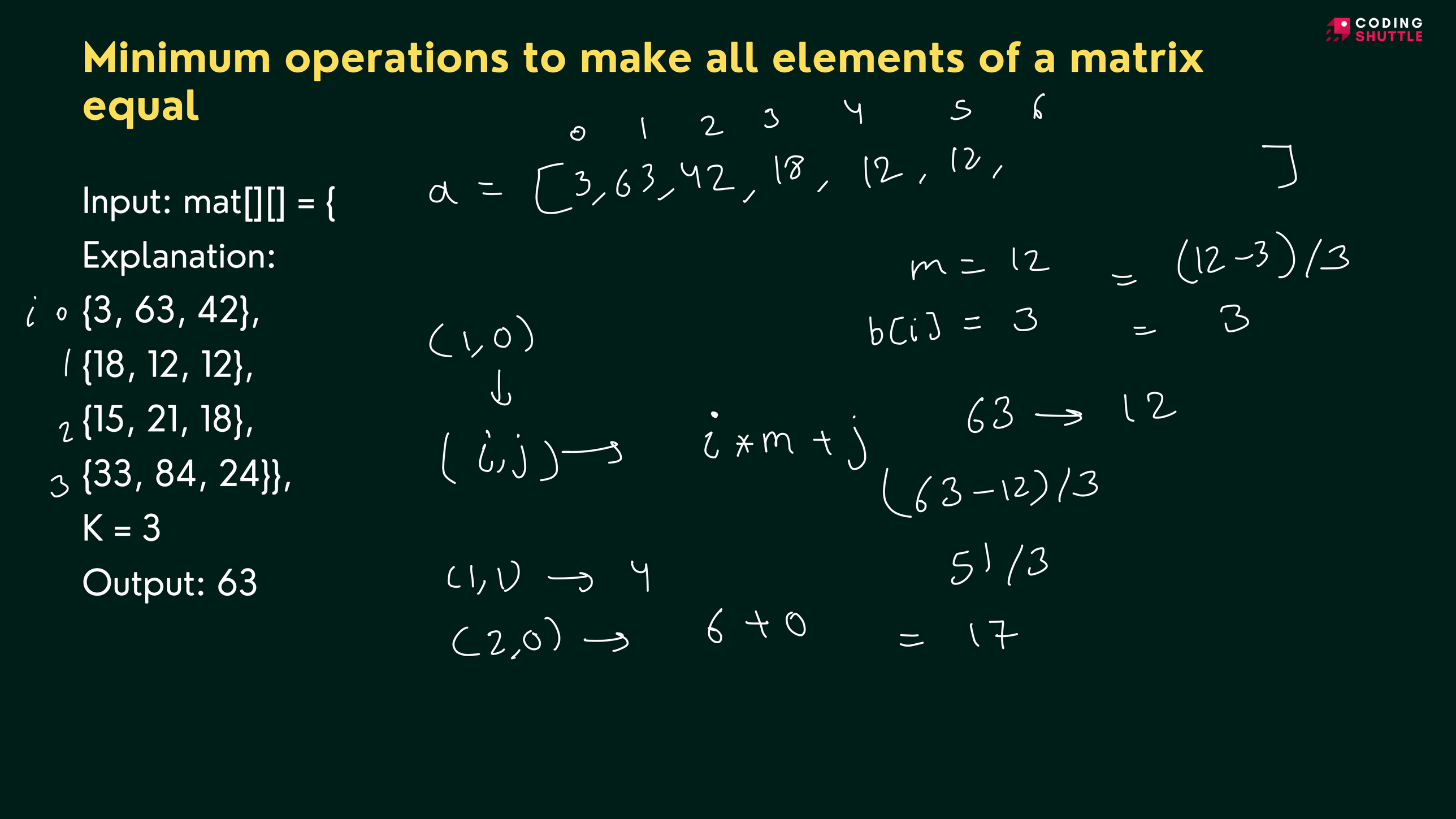
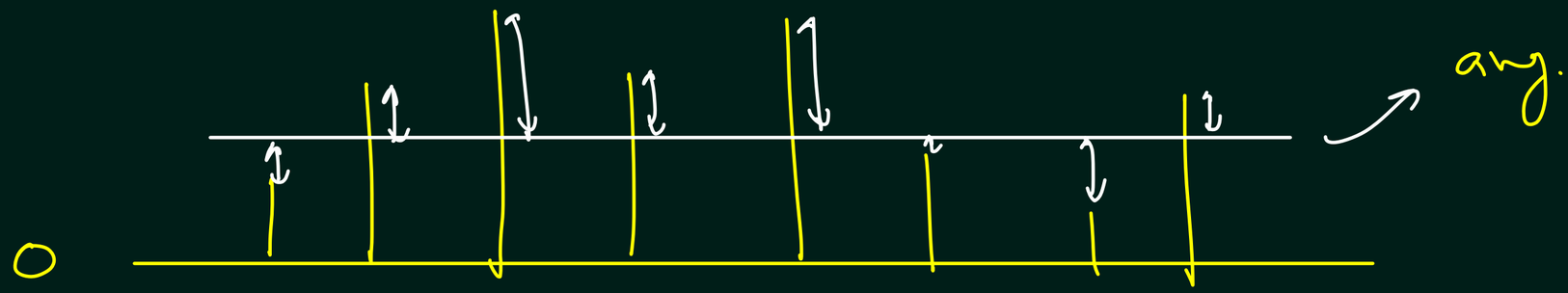


Minimum operations to make all elements of a matrix equal



2 4 6 8 10

2 1 0 1 2 → min = 6

K = 2

$\frac{102}{4} = 27$ → 26

2 2 4 100

24 24 22 74

12 12 11 37 →

Minimum operations to make all elements of a matrix equal

0 0 0 0 0 0

0 1 2 3 4 5

$n = 6$

$m_1 \rightarrow 3^{rd}$

$m_2 = 2^{nd}$

2, 2, 4, 6, 100

e

$e + k * n = e_2$

$k * n = (e_2 - e)$

$n = \dfrac{(e_2 - e)}{k}$ an integer

$= \dfrac{(k * e_2' - k * e')}{k}$

is an integer