

Search in a sorted Matrix

Given a strictly sorted 2D matrix `mat[][]` of size `n x m` and a number `x`. Find whether the number `x` is present in the matrix or not.

Note: In a strictly sorted matrix, each row is sorted in strictly increasing order, and the first element of the i^{th} row ($i \neq 0$) is greater than the last element of the $(i-1)^{\text{th}}$ row.

Examples:

Input: `mat[][] = [[1, 5, 9], [14, 20, 21], [30, 34, 43]]`, `x = 14`

Output: `true`

Explanation: 14 is present in the matrix, so output is true.

Input: `mat[][] = [[1, 5, 9, 11], [14, 20, 21, 26], [30, 34, 43, 50]]`, `x = 42`

Output: `false`

Explanation: 42 is not present in the matrix.

Input: `mat[][] = [[87, 96, 99], [101, 103, 111]]`, `x = 101`

Output: `true`

Explanation: 101 is present in the matrix.

Constraints:

$1 \leq n, m \leq 1000$

$1 \leq \text{mat}[i][j] \leq 10^9$

$1 \leq x \leq 10^9$