

Sudoku Check

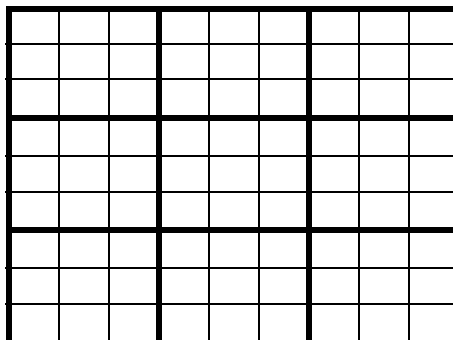
Problem Code	hw02b_sudoku
Running Time Limit	1 sec
Memory Limit	16 mb

Objective

- Be able to use loop and nested loop structures
- Be able to use 2D array

Introduction

Sudoku is a single player puzzle game. The object of the game is to place numbers in the range of 1 to 9 into 9 x 9 grid. The rule requires that in each column and in each row must contains all number from 1 to 9 (which implicitly implies that each number must appear exactly once in each row and column). Moreover, the grid is divide into nine 3 x 3 grids which is not overlapping. In each smaller grid, it is also required that each number appears exactly once. The smaller grid is arranged as in the following table.



There are many solutions to the Sudoku problem. The following table shows one of them.

5	3	4	6	7	8	9	1	2
6	7	2	1	9	5	3	4	8
1	9	8	3	4	2	5	6	7
8	5	9	7	6	1	4	2	3
4	2	6	8	5	3	7	9	1
7	1	3	9	2	4	8	5	6
9	6	1	5	3	7	2	8	4
2	8	7	4	1	9	6	3	5
3	4	5	2	8	6	1	7	9

In this problem, your task is to check whether given grid satisfies the rule of Sudoku.

Task

Evaluate given 9 x 9 grid whether it satisfies Sudoku rules.

Input

Input consists of nine lines. Each line contains nine integers in the range of 1 to 9.

Output

The word "YES" when the given grid is a Sudoku grid, output "NO" otherwise.

Example

Ex1

Input	Output
5 3 4 6 7 8 9 1 2 6 7 2 1 9 5 3 4 8 1 9 8 3 4 2 5 6 7 8 5 9 7 6 1 4 2 3 4 2 6 8 5 3 7 9 1 7 1 3 9 2 4 8 5 6 9 6 1 5 3 7 2 8 4 2 8 7 4 1 9 6 3 5 3 4 5 2 8 6 1 7 9	YES

Ex2

Input	Output
5 3 4 6 7 8 9 1 1 6 7 2 1 9 5 3 4 1 1 9 8 3 4 2 5 6 1 8 5 9 7 6 1 4 2 1 4 2 6 8 5 3 7 9 1 7 1 3 9 2 4 8 5 1 9 6 1 5 3 7 2 8 1 2 8 7 4 1 9 6 3 1 3 4 5 2 8 6 1 7 1	NO