20 Sudoku Friends

7 points

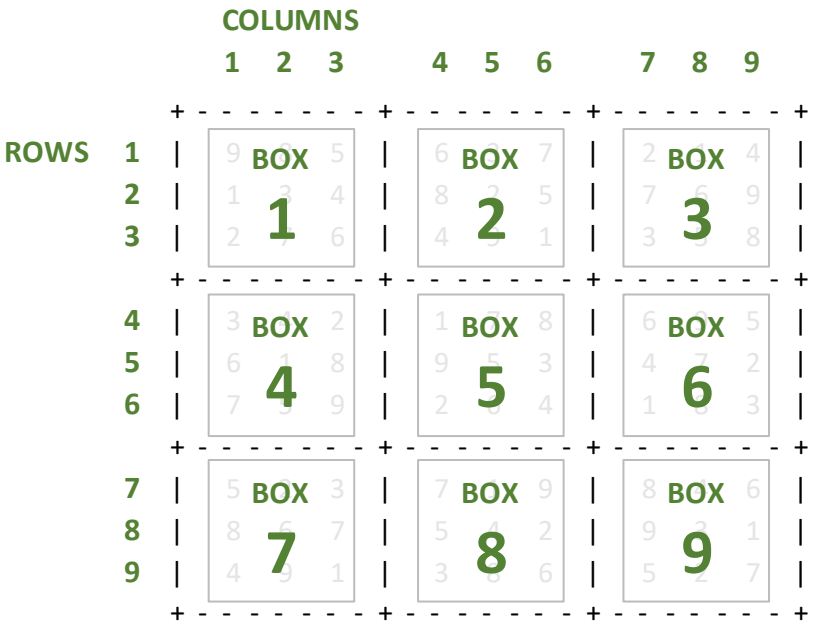
Introduction

A Sudoku is a type of puzzle where you must fill a 9x9 grid with numbers from 1 to 9 with the following rules:

- Numbers cannot repeat in a row
- Numbers cannot repeat in a column
- Numbers cannot repeat in a box

This will help you understand our coordinate system:

- A box is a 3x3 region that divides the Sudoku grid in a 3x3, normally represented with a darker outline.
- The rows are counted from top to bottom being the topmost number 1
- The columns are counted from left to right being the leftmost number 1
- The boxes are counted in reading order, being the top-left number 1 and the bottom-right number 9



In Sudoku a cell is considered a friend if its value coincides with the number of its row, column, or box. We need a program to count the number of friend cells in a given Sudoku.

Input

81 digits from 1 to 9 separated by a space representing a Sudoku.
The numbers in the Sudoku are assigned in reading order.

Ex.: The 15th digit will be in row 2, column 6, box 2.

Output

The total number of friend cells in the format:

```
Number of friends = number
```

Example

In this example, the ***cells in red*** are friends.

```
+------+-------+-------+
|9 8 5 | 6 3 7 | 2 1 4 |
|1 3 4 | 8 2 5 | 7 6 9 |
|2 7 6 | 4 9 1 | 3 5 8 |
+------+-------+-------+
|3 4 2 | 1 7 8 | 6 9 5 |
|6 1 8 | 9 5 3 | 4 7 2 |
|7 5 9 | 2 6 4 | 1 8 3 |
+------+-------+-------+
|5 2 3 | 7 1 9 | 8 4 6 |
|8 6 7 | 5 4 2 | 9 3 1 |
|4 9 1 | 3 8 6 | 5 2 7 |
+------+-------+-------+
```

Input (notice that although this text appears as three lines, the program input is a single line)

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

Output

```
Number of friends = 21
```