
Sudoku

P85062_en

Write a program in Python that, using the **optilog** library, solves a given sudoku.

In order to use the optilog library, the program has to include something like:

```
from optilog.solvers.sat import *
...
solver = Glucose41()
solver.add_clauses(...)
solver.solve()
solver.model()
```

Input

The input is a text (in the stdin) with numbers (between 1 and 9) in some cells, and dots "." in the empty cells. For instance, the text:

```
53..7....
6..195...
.98....6.
8...6...3
4..8.3..1
7...2...6
.6....28.
...419..5
....8..79
```

Output

The output is also a text (in the stdout) only with numbers between 1 and 9 that represents the solution. In this example:

```
534678912
672195348
198342567
859761423
426853791
713924856
961537284
287419635
345286179
```

If the problem has no solution, the output must be the sentence: **NO SOLUTION**

If the problem has multiple solutions, the output must be the sentence: **MULTIPLE SOLUTIONS**

Sample input 1

```
53..7....  
6..195...  
 .98....6.  
8...6...3  
4..8.3..1  
7...2...6  
 .6....28.  
 ...419..5  
 ....8..79
```

Sample input 2

```
53..7...4  
6..195...  
 .98....6.  
8...6...3  
4..8.3..1  
7...2...6  
 .6....28.  
 ...419..5  
 ....8..79
```

Sample input 3

```
53..7....  
6..195...  
 .98....6.  
8...6...3  
4..8.3..1  
7...2...6  
 .6....28.  
 ...419..5  
 ....8....
```

Sample output 1

```
534678912  
672195348  
198342567  
859761423  
426853791  
713924856  
961537284  
287419635  
345286179
```

Sample output 2

```
NO SOLUTION
```

Sample output 3

```
MULTIPLE SOLUTIONS
```

Scoring

If your program is able to solve correctly sudokus with just one solution, the score will be 5. If additionally, you detect unsolvable problems, you will get 2 additional points, and 3 more if you can detect problems with multiple solutions.

Problem information

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