British Informatics Olympiad Final

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Dominoes

A domino is a 2×1 rectangle with 0,1,2,3,4,5 or 6 written on each 1×1 half. A set of dominoes consists of the 28 unique dominoes that can be constructed.

A set of dominoes has been fitted into an 8×7 grid. You will be given the values on each square, but not the boundary of the dominoes. Your task is to determine where the dominoes are positioned.

Input will consist of seven rows of eight numbers, representing the values on the grid. For each possible arrangement of dominoes you should output the layout, and finally print the number of solutions you have found. If you do not believe there is a solution you should print out '`Impossible`'.

Sample Input

```
3 5 1 2 6 3 5 6
0 3 0 4 6 1 0 4
5 6 6 3 0 6 0 4
5 6 5 3 1 0 4 1
2 2 2 2 0 3 2 1
1 1 4 1 3 4 0 5
4 5 3 6 2 5 2 4
```

Sample Output

```
3 5 1-2 6-3 5-6
| |
0 3 0 4-6 1 0 4
    |     | | |
5 6 6 3 0 6 0 4
| |   | |
5 6 5 3 1 0-4 1
    |         |
2-2 2 2-0 3-2 1

1 1 4 1-3 4 0-5
| | |     |
4 5 3 6-2 5 2-4


3-5 1-2 6-3 5-6

0-3 0 4-6 1 0 4
    |     | | |
5 6 6 3 0 6 0 4
| |   | |
5 6 5 3 1 0-4 1
    |         |
2-2 2 2-0 3-2 1

1 1 4 1-3 4 0-5
| | |     |
4 5 3 6-2 5 2-4

2 solutions found
```