

```
1 public class Sudoku {
2
3     public static String isSolution(int[][] s){
4
5         // By til 2n vigra ur nxn fylkinu s
6         int[][] allt = new int[18][9];
7         for (int i = 0; i < s.length; i++) {
8             for (int j = 0; j < s.length; j++) {
9                 allt[i][j] = s[i][j];
10                allt[i+9][j] = s[j][i];
11            }
12        }
13
14        // sortera alla vigranna
15        allt = insertionSort(allt);
16
17        // athuga hvort sorterudu vigrarnir gangi upp
18        // med tvi ad athuga hvort ad aN-N = 0
19        for (int i = 0; i < allt.length; i++) {
20            for (int j = 0; j < allt[i].length; j++) {
21                if(allt[i][j] - j - 1 != 0){
22                    return "Ekki lausn";
23                }
24            }
25        }
26        return "Rett lausn";
27    }
28
29    // insertion sort
30    public static int[][] insertionSort(int[][] a){
31        for (int j = 0; j < a.length; j++) {
32            for (int i = 1; i < a[j].length; i++) {
33                int tmp = a[j][i];
34                int k;
35                for (k = i-1; k >= 0 && tmp < a[j][k]; k-- ) {
36                    a[j][k+1] = a[j][k];
37                }
38                a[j][k+1] = tmp;
39            }
40        }
41        return a;
42    }
43
44
45    public static void main(String[] args) {
46        // Fylki sem er lögleg lausn á Sudoku þraut
47        int[][] s = {
48            { 5, 3, 4, 6, 7, 8, 9, 1, 2 },
49            { 6, 7, 2, 1, 9, 5, 3, 4, 8 },
50            { 1, 9, 8, 3, 4, 2, 5, 6, 7 },
51            { 8, 5, 9, 7, 6, 1, 4, 2, 3 },
52            { 4, 2, 6, 8, 5, 3, 7, 9, 1 },
53            { 7, 1, 3, 9, 2, 4, 8, 5, 6 },
54            { 9, 6, 1, 5, 3, 7, 2, 8, 4 },
55            { 2, 8, 7, 4, 1, 9, 6, 3, 5 },
56            { 3, 4, 5, 2, 8, 6, 1, 7, 9 }
57        };
58
59        // Kóði til að staðfesta að s sé lögleg og athuga hvort t sé lögleg
60        System.out.println(isSolution(s));
```

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61     }  
62 }
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