

CSTATE1 - Chessboard State 1: National Chess Tournament

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Note: This is an easier version of the problems CSTATE2 and CSTATE3. A solution to those problems (except the I/O format) will pass here.

The inhabitants of Slovakia decided to organize a national chess tournament.

Since the first place prize is 1 point on SPOJ, everyone played as if their life was at stake.

However, since time was not measured in this chess tournament (unlike at most chess tournaments in the rest of the world), a problem occurred - players took way too long to admit defeat.

They always just kept thinking and thinking, trying to find some move which would prevent their king from being taken. Just one more moment... And perhaps one more...

The inhabitants of Slovakia are planning to hold the tournament next year as well. It would be great if a skilled programmer lent them a hand and got rid of this nuisance!

For a given description of a chessboard, decide its state - which player's king is under threat, and whether it is a Check or a Checkmate.

For the purposes of this problem only take into account basic moves of every chesspiece; complicated moves such as Castling, En passant, moving a pawn 2 squares or Promotion are not accepted in Slovakia.

Input

The first line of the input contains the integer $1 \leq t \leq 2000$ - the number of chessboards. t descriptions of a chessboard follow.

Each description of a chessboard consists of **8** rows, each consisting of **8** characters (the chessboard is of the traditional dimensions **8x8**).

These characters are from the set **{.KQRBHPkqrbhp}**, representing in this order an empty square, king, queen, rook, bishop, knight (horse), and pawn.

The pieces belonging to the White player are marked by lowercase characters; the upper side of the chessboard (first in the input) belongs to him, hence white pawns move downwards.

The pieces belonging to the Black player are marked by uppercase characters; the lower side of the chessboard belongs to him, hence black pawns move upwards.

A blank line follows after every chessboard.

The number or placement of the pieces may by all means be impossible to reach in a standard game of chess, however you may assume that on every chessboard there is exactly one white king ('k') and one black king ('K').

Output

For each chessboard output one line with one of the following messages:

- "**Safe**", if neither players' kings are being threatened
- "**Impossible**", if both players' kings are being threatened
- "**{colour} Check**", where **{colour}** is either "**Black**" or "**White**", if the respective player's king is being threatened, and there exists at least one valid move by any of his pieces after which his king is no longer threatened
- "**{colour} Checkmate**", where **{colour}** is either "**Black**" or "**White**", if the respective player's king is being threatened, and there exists no valid move by any of his pieces after which his king is no longer threatened

Additional note

There are 13 input files "0" through "12".

In order to make finding mistakes easier and/or let you implement various chesspieces one by one, with the exception of the example (file #0), the following holds:

Chesspiece	Appears first in file #
King	1
Knight	1
Rook	3
Bishop	5
Queen	5
Pawn	8

Example

Input:

7

....k...
.....
...H....
.....
...h....
.....
....K...
.....

.....
...h...
..k.....
....H..
...K....
.....
.....
.....

k..H....
...H....
.HH.....
.....
.....
.....K.
.....
.....

k..H....
...H....
.HH.....
.....
.....
.....K.
.r.....
.....

K....Rr
R.h....r
.....
.....
rr.....
....k..
.....
.....

k.....
.....R
.....
...B....
.R.....
.....K.
..q.....
.....

.....
..PPP...
..PkP...
...Pp...
...K....
.....
.....
.....

Output:

Impossible
Safe
White Checkmate
White Check
Black Checkmate
White Check
Black Check

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Date: 2017-07-03
Time limit: 2s
Source limit: 50000B
Memory limit: 1536MB
Languages: All
Resource: own problem