

1 SPOJ	NGM	A Game with Numbers	GT, Pattern
2 SPOJ	HUBULLU	Hubulullu	GT, Pattern
3 SPOJ	MMMGAME	M&M Game	GT, Misere Nim
4 SPOJ	QCJ3	The Game	GT, Nim
5 SPOJ	SYNC13C	WHAT A CO-ACCIDENT	GT, Pattern
6 SPOJ	NIMGAME	Special Nim Game	GT, Table Fill
7 SPOJ	QWERTY04	TRIVIADOR	GT, Pattern
8 SPOJ	TWOKINGS	TRIVIADOR	GT, Observation
9 SPOJ	CLK	Chomp	GT, Grundy
10 SPOJ	REMGAME	Stone Removing Game	GT, Grundy
11 SPOJ	PEBBMOV	Moving Pebbles	GT, Misere Nim
12 CF	135/C	Zero-One	Greedy, Independent Game,
13 CF	87/C	Interesting Game	Polite Form
14 CF	15/C	Industrial Nim	GT, Nim
15 CF	167/C	Wizards and Numbers	
16 SPOJ	TEAMNIM	Team Nim	GT, Nim, Pattern
17 CF	255/E	Furlo and Rublo and Game	GT, Grundy
18 CF	36/D	New Game with a Chess Piece	GT, Pattern
19 CF	154/D	Flatland Fencing	GT, Nim, Pattern,
20 CF	38/F	Smart Boy	Decomposition, String, KMP
21 LOJ		1393 Crazy Calendar	GT, Nim
22 LOJ		1199 Partitioning Game	GT, Grundy
23 LOJ		1229 Treblecross	GT, Grundy
24 LOJ		1344 Aladdin and the Game of Brac	GT, Grundy

CC	SIMNIM
SPOJ	RESN04
SPOJ	TWOKINGS
SPOJ	CONQUER
SPOJ	CRSCNTRY
CC	BIGPIZA
CC	CHEFBRO

X
X
X
X
X
X
X

X
X

X

X
X

X
X
X

X
X
X
X

If, taking any number greater than n leads to losing, I can simply take 1 and push 2nd player into losing state. Otherwise I have winning state.

Use 11 base number for stroing the grid

Check Topcoder

Notice that, after the first move, x becomes < 100000 .

Whenever in a grid, and you are allowed to move only 1 postion, think parity.

Nim
 Misere Nim
 Grundy
 Blue-Red Hacken Bush
 Green Hacken Bush

Topics Need To learn

Impartial Games	Games where both players have same moves from any given position.
Partizan games	Players have different set of moves.
Normal play rule	The last person to move wins.
Misere Play Rule	The last person to move loses.
Number of Winning Moves in Nim	odd number of 1's. In particular, there is always an optimal nim strategy, I will never leave exactly one pile > 1
Misere Nim Strategy	integers as the smallest non-negative integer not in the set
Minimal Excludent	Branches of length a,b,c from a vertex is same as a stalk of a xor b xor c from vertex
Colon Principal	fusion will convert each edge into a loop. Each loop is same as 1 nim bar.
Fusion Principal	

<http://www.cs.cmu.edu/afs/cs/academic/class/15859-f01/www/notes/hack.html>