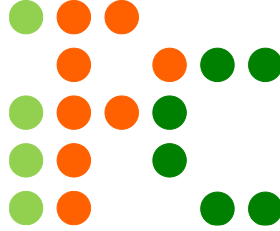


# puzzle Ramayan

and



Episode – 1  
19<sup>th</sup> – 25<sup>th</sup> January 2024

Classics  
by  
Prasanna Seshadri

Puzzle Ramayan rounds will also serve as qualifiers for Indian Puzzle Championship for year 2024. Please check <http://logicmastersindia.com/PR/2024pr.asp> for details.

## Important Links

Submission Page : <http://logicmastersindia.com/live?contest=PR202401>

Discussion Thread : <http://logicmastersindia.com/t/?tid=3601>

F. A. Q. : <http://logicmastersindia.com/t/?tid=2773>

Registration, if required : <http://logicmastersindia.com/register.asp>

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## About this Episode

This episode has 22 Puzzles from the following puzzle types:

- 3\* Skyscrapers
- 3\* Nurikabe
- 3\* Fillomino
- 3\* Maxi Loop
- 3\* Hitori
- 3\* Akari
- 2\* Skyscrapers [Odd Even]
- 2\* Liar Loop

## How to participate?

- Understand the rules of different puzzles that will appear in this episode. This Instruction Booklet has rules for each puzzle.
- Any time on or after 19<sup>th</sup> January (but on or before 25<sup>th</sup> January), login at the submission page using your LMI user-id and password. Please check the submission page for exact timing.
- **If you plan to solve on paper:**
  - a) Download the password protected Puzzle booklet (will be uploaded before the test starts). The Puzzle booklet contains the actual Puzzles to be solved. It is password protected, so you won't be able to open it.
  - b) Click on "Start". At this time, password for pdf will be shown and timer will start. **The contest duration is 60 minutes.**
  - c) The puzzle booklet can be downloaded, printed and solved on paper.
  - d) We advise you to have a printer accessible with enough paper.
  - e) You are allowed to use writing implements, eraser, blank paper (including commercial graph paper), ruler, scissors, and tape.
- **If you plan to solve on LMI's Penpa-Integrated Interface:**
  - a) Click on this link and understand the instructions - <https://logicmastersindia.com/live/faq-online-solving.asp>
  - b) It is noted on the link too, but we note it here as well to be clear – the participants must still input the answer keys in the boxes below the puzzle and submit them to receive credit as given below.
- Outside solving help of any kind is not permitted. This includes but is not limited to: assistance of any kind from any other person; prepared notes, books, calculators, computers, or tools other than items explicitly permitted.
- Participants may use both paper solving and online solving, even interchangeably. Eventually our system will only count anything submitted in the submission boxes in either mode.

If you are participating at LMI for first time, it will be useful to check the F.A.Q. at <http://logicmastersindia.com/t/?tid=2773>.

## About answer keys and Submission

- Each puzzle has some answer keys, as described in the instructions.
  - After solving the puzzle, you need to submit the puzzle using the answer keys.
  - You may submit the answer keys anytime during the test duration. You may consider submitting a puzzle as soon as you solve it.
  - Answer keys are always to be entered from left to right or top to bottom
  - Don't enter any separator unless specified in the answer key
  - If one row and one column is marked, enter the row first and then the column
-

- If multiple rows are marked, enter from top to bottom for marked rows
- If multiple columns are marked, enter from left to right for marked columns
- Uppercase or lower case does not matter for answer keys where letters must be entered.
- Characters other than the ones explicitly expected by the answer key will cause the red highlight to appear around the submission box.

## Points Table and Scoring

Points typically indicate difficulty of the Puzzles and time required to solve them. You will get full points if you enter the correct answer key. While the organizers have made best efforts to match them, **your personal experience and preference may differ.**

Skyscrapers	5, 7, 7
Nurikabe	2, 3, 4
Fillomino	4, 7, 7
Maxi Loop	2, 6, 4
Hitori	2, 2, 3
Akari	2, 6, 3
Skyscrapers [Odd Even]	5, 8
Liar Loop	4, 7

This test uses instant grading where a solver can submit any individual Puzzle and receive confirmation that the solution is correct or not. Each incorrect submission reduces the puzzle's potential score. The first, second, third, and fourth incorrect submissions reduce the potential score to 90%, 70%, 40%, and 0% respectively. A demonstration for this is shown below.

### Original points

04 Araf	50 points	4A	Sum should be 10
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### Potential points after 1 incorrect submission

04 Araf	45 / 50	4A	1234
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### Potential points after 2 incorrect submissions

04 Araf	35 / 50	4A	23311
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### Potential points after 3 incorrect submissions

04 Araf	20 / 50	4A	1111111111
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### Potential points after 4 incorrect submissions

04 Araf	0 / 50	4A	541
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## Bonus and Ranking

If you submitted all Puzzles correctly, you can have bonus points of 1 point per minute saved, computed up to seconds.

Ranking will be based on following rules in order:

1. Most total points
2. Earliest final submission time, up to seconds (ignoring incorrect submissions)

### Credits

- **Wessel Strijkstra** and **David Altizio** for test solving the puzzles and providing invaluable feedback.

- The original creator **opt-pan** for penpa edit - <https://opt-pan.github.io/penpa-edit/>

- **Swaroop Guggilam** for his recent efforts in adding features to Penpa-edit -

<https://swaroopg92.github.io/penpa-edit/> and also working to integrate it with our contest engine.

## About the Puzzle Booklet

The password protected Puzzle booklet will have 8 pages. This is relevant only for paper solvers.

*Solutions and keys (including the key explanation) to examples are towards the end of the booklet in the Solutions section.*

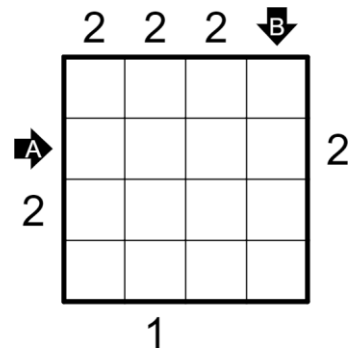
## 1-3 Skyscrapers

5 + 7 + 7 points

Insert a digit from 1 to N into each cell in the N by N grid so that no digit repeats in any row or column. Also, each number in the grid represents the height of a building and the clues on the outside of the grid indicate how many buildings can be "seen" when looking from that direction. Taller buildings block the view of smaller buildings.

[The puzzles in the contest will be of sizes 6x6, 6x6 and 7x7. This example is 4x4.]

Penpa for example: <https://tinyurl.com/3b2n95fc>



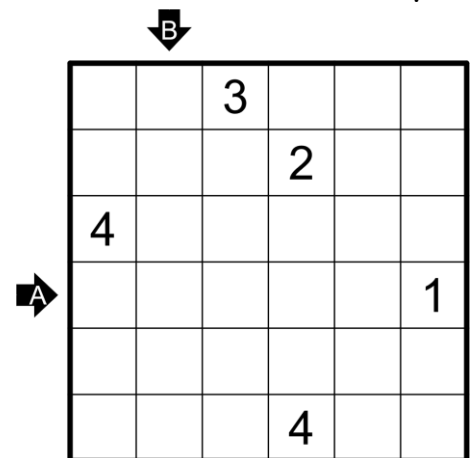
## 4-6 Nurikabe

2 + 3 + 4 points

Shade some cells so that all shaded cells form one orthogonally connected area. Clues cannot be shaded, and every orthogonally connected area of unshaded cells contains exactly one clue, the value of which represents the size of the area. No 2x2 region may be entirely shaded.

[The puzzles in the contest will be of sizes 8x8, 9x9 and 10x10. This example is 6x6.]

Penpa for example: <https://tinyurl.com/2l8qttqn>



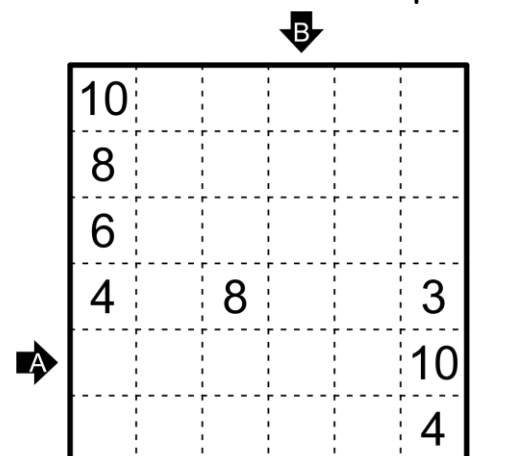
## 7-9 Fillomino

4 + 7 + 7 points

Divide the grid into regions of orthogonally connected cells. Two regions of the same size may not share an edge. Clued cells must belong to a region containing the indicated number of cells. A region may contain 0 or more clued cells.

[The puzzles in the contest will be of sizes 8x8, 9x9 and 10x10. This example is 6x6.]

Penpa for example: <https://tinyurl.com/2d8aufrb>



## 10-12 Maxi Loop

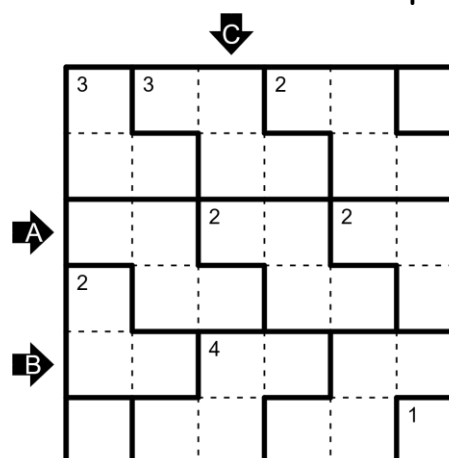
Draw a non-intersecting loop traveling orthogonally through the centers of all cells.

A number in a region represents the number of cells occupied by the largest continuous loop segment within the region.

[The puzzles in the contest will be of sizes 8x8, 8x8 and 10x10. This example is 6x6.]

Penpa for example: <https://tinyurl.com/2jkb5ykz>

2 + 6 + 4 points



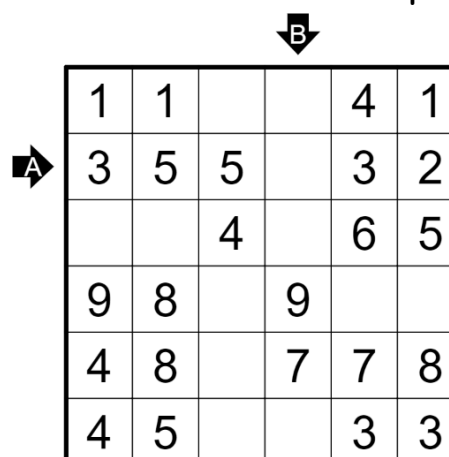
## 13-15 Hitori

Shade some cells so that no two shaded cells are orthogonally adjacent and the remaining unshaded cells form one orthogonally connected area. No two cells in the same row or column containing the same number may both be unshaded.

[The puzzles in the contest will be of sizes 7x7, 8x8 and 9x9. This example is 6x6.]

Penpa for example: <https://tinyurl.com/y7ao8rld>

2 + 2 + 3 points



## 16-18 Akari

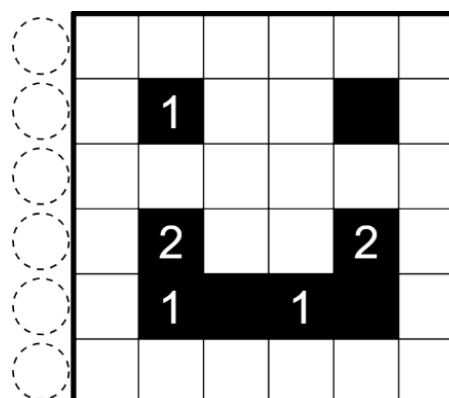
Place lights in some cells so that every cell is illuminated. Lights illuminate the cell they're in as well as all cells seen in a straight line horizontally or vertically, not obstructed by a black cell. Lights may not illuminate each other.

Clues represent the number of lights in the (up to) four cells surrounding the clue.

[The puzzles in the contest will be of sizes 8x8, 9x9 and 10x10. This example is 6x6.]

Penpa for example: <https://tinyurl.com/2764q7dv>

2 + 6 + 3 points



## 19-20 Skyscrapers [Odd Even]

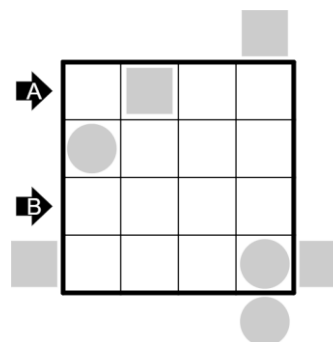
5 + 8 points

This is a variation of Skyscrapers. Apply Skyscrapers rules.

Shaded circles must contain odd digits and shaded squares must contain even digits.

[The puzzles in the contest will be of sizes 5x5 and 7x7. This example is 4x4.]

Penpa for example: <http://tinyurl.com/ysfmh2tw>



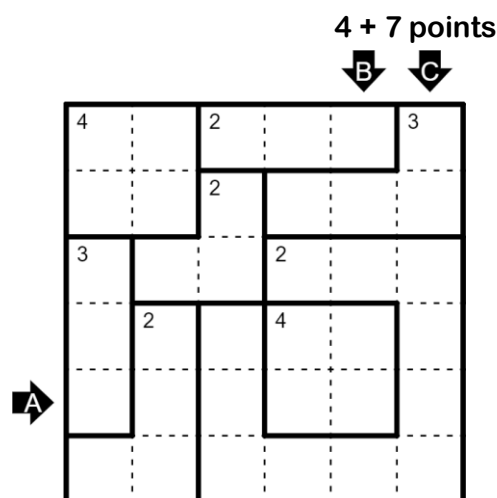
## 21-22 Liar Loop

Draw a non-intersecting loop traveling orthogonally through the centers of all cells.

A number in a region indicates that the loop never runs through this many cells consecutively. Whenever it passes through the area it always runs through either more or less cells than the given number before exiting.

[The puzzles in the contest will be of sizes 8x8 and 10x10. This example is 6x6.]

Penpa for example: <http://tinyurl.com/ykrpvjov>



## Solutions

For this round, all answer keys will NOT be the same for all puzzles.

The keys are given section by section.

**Skyscrapers, Skyscrapers [Odd Even]** – For each marked row/column, enter the digits in the direction of the arrow, excluding digits outside the grid.

**Nurikabe, Hitori** – For each marked row/column, enter the number of consecutive shaded and unshaded cells in the direction of the arrow.

**Fillomino** – For each marked row/column, enter the number of consecutive cells belonging to separate regions in the direction of the arrow. Use unit's digit for double digit values.

**Maxi Loop. Liar Loop** – For each marked row/column, enter the lengths of all loop segments in the direction of the arrow. Enter 0 if there are none.

**Akari** – For each row from top to bottom, enter the number of lights.

**Skyscrapers**

2 2 2

1	3	2	4
4	2	1	3
3	1	4	2
2	4	3	1

2

2

1

Key: 4213, 4321

**Nurikabe**

		3			
			2		
4					
					1
			4		

Key: 111111, 1131

**Fillomino**

10	10	10	10	10	1
8	8	8	8	10	3
6	6	8	8	10	3
4	6	8	8	10	3
4	6	6	4	10	10
4	4	6	4	4	4

Key: 1212, 132

**Maxi Loop**

3	3	2		
		2	2	
	2			
2				
	4			
				1

Key: 11, 111, 31

**Hitori**

1	1			4	1
3	5	5		3	2
		4		6	5
9	8		9		
4	8		7	7	8
4	5			3	3

Key: 11211, 312

**Akari**

1					
0	1				
1					
3	2		2		
0	1		1		
1					

Key: 101301

**Skyscrapers [Odd Even]**

				2	
	2	4	1	3	
	1	3	2	4	
	4	1	3	2	
2	3	2	4	1	2
				3	

Key: 2413, 4132

**Liar Loop**

4		2		3
		2		
3			2	
	2		4	

Key: 11, 21, 5